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WESTERN Farm Life

Vol. XXII | Denver, Colorado, January 1, 1920 | Semi-Monthly

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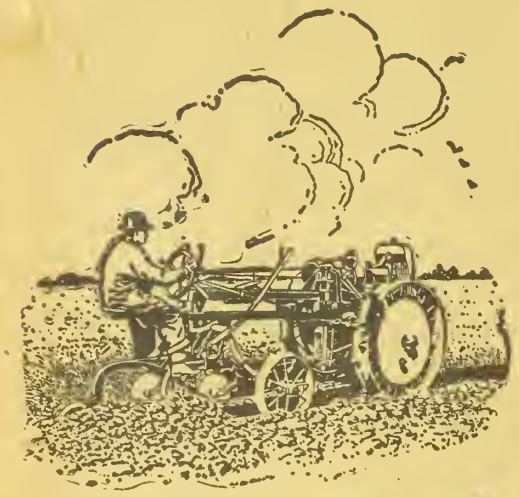

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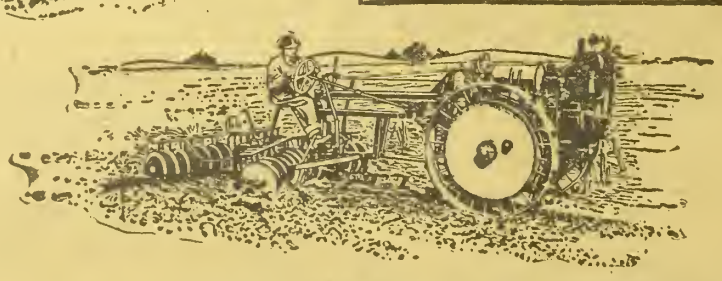

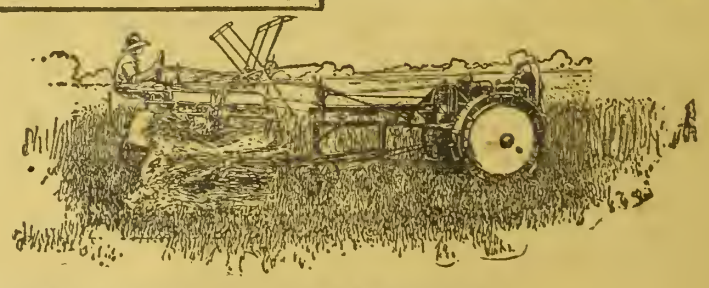

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A Western Magazine for Western Farmers and Stockmen

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Largest Circulation of Any Farm Magazine in the West

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Holly Cow Club Members Make Tour of Dairy Farms

SPLENDID HERDS FURNISHING MILK AND FERTILIZING THE SOIL

H. A. LINDGREN

THE Holly Cow club, in cooperation with County Agriculturist Morgan Sweitzer, recently staged a tour of dairy farms in Prowers county around Holly and Lamar. The tour had been previously planned for Armistice day, but on account of a severe storm at that time, it was postponed. November 25th was the day finally set for the trip. The farmers gathered at Holly at 8:30. Some eight cars of people made the start. At first the crowd was rather small, due to a threatened storm. However, the weather turned out warm and the crowd grew so that by the time the second stop was made there were seventy-five people with the party.

The Holly Cow Club is an organization of live farmers who are doing much to promote the dairy industry in the county. It was organized as a part of the farm bureau program with W. S. Partridge, president; C. F. Hampton, secretary, and J. A. Pierce, vice-president, all of Holly.

The club is assisting County Agriculturist Sweitzer in his work among the farmers. The cooperation given is an indication of the warm feeling they hold toward him. He has done a number of big things in the way of community fairs, club shows, grasshopper and prairie dog control. Sweitzer is a farmer lad and has the aptitude to see things from the farmer's viewpoint, which is of untold assistance to him.

The first stop made on the tour was at the Manville farm, one of three operated by the American Beet Sugar Company. They, realizing the need for manure in connection with growing beets, maintain a herd of dairy cows on each of their farms. Here was seen some excellent dairy equipment and a herd of outstanding grade Holstein cows. The equipment here is up to date in every detail. One of the things especially noticeable was a tank heater for the stock water. This is a feature that should be adopted by all stockmen. Cattle need water, but will not drink it when too cold.

The second stop was made at the Center farm of the same company. Here were seen some excellent registered Holstein cows. The herd is headed by Smithdale Alcartra Pontiac, brother to the sire of Tillie Alcartra, a world famous cow. The farm is under the able management of George Penley. The cows on this farm are producing heavily under ideal conditions. Several famous producers are owned by this farm, among them being Robertdale Flint Alcartra, state champion three-year-old with a record of 30.8 lbs. butter in seven days. Also Robertdale Flint Tillie Hengerveld, with a senior four-year-old record of 32.96 lbs. butter and 619.8 lbs. milk in seven days and 131.96 lbs. butter in 30 days. Sally Johanna DeVries 2nd has a seven-day butter record of 34.74 lbs. The milking machine is used on both farms.

From here the party went to the Green Mountain Dairy, which is managed by Hayes Williams. Only a short stop was made here as no one was present to point out the work being done. Mr. Williams operates one of the largest dairies in this section.

The fourth stop was made at the farm of E. P. Gilbert, who maintains a dairy of 22 grade Holstein cows. Mr. Gilbert has a very practical dairy and modern in every respect. His concrete block barn is neat. His farm buildings are lighted by a small electric plant. From here the party went to the Amity headgate, where they ate their lunch, which they had brought with them. Hot coffee was served by Mr. and Mrs. Wilson. Mr. Wilson is superintendent of the Amity Ditch Company. The lunch was greatly enjoyed by all and the party continued their journey on schedule time in the best of spirits.

The first farm visited after lunch was that of Mr. L. C. Dingus, where a registered cow with high production was seen. She shows very good conformation and bears out the fact by producing 80 lbs. of milk daily on ordinary feeding with three milkings a day.

The next place visited was that of A. P. Meade & Son. These men are milking 26 grade Holstein cows and are reputed to be the best dairy feeders in the section. They have been sixteen years in building up their herd. At present they are feeding a grain ration of three parts bran, one part oil meal and two parts shorts. The cows are producing well from this feed together with beet tops. Next the party stopped at the farm of Roy B. Bloyd. Here we found another excellent herd of grade Holsteins, but were disappointed to find a grade bull in use. This is the only grade bull used in the Cow Testing Association.

The next stop was made at the farm of Harry Heath. Mr. Heath is secretary-treasurer of the Cow Testing Association. Here we saw a hollow tile barn and a herd of grade Holstein cows. Mr. Heath was found busily engaged in hauling manure on to his land, some thing he considers a valuable consideration in his farming.

A brief stop was made to view the herd of Bill Terpen. Mr. Terpen was absent, but Robert Boerner, the tester in the Cow Testing Association, was present and pointed out the best cows.

The last stop was at the farm operated by Gus Center. Here was found an excellent herd of grade and registered cows. The herd bull used is a son of Rag Apple Eighth. The yards were clean and well bedded and the cows were clean and dry. Those who so desired were then shown through the condensery at Lamar by F. D. Reynolds. The condensery is now receiving 23,000 lbs. of milk daily. This is the market for the dairymen in this section. The condensery is doing much to promote dairying in the community. The tour did much as these tours always do, to promote the general good feeling among the farmers.

Prowers county has some very good herds of dairy cattle and it was of interest to note the use being made of the manure in that section. On nearly every farm visited the farmer had a manure spreader as a part of his equipment. The beet yield is very high as a result of manuring the land.

The Cow Testing Association in Prowers county has 462 cows on test at present. Robert Boerner, the tester, reports that the average return is about $1.72 for every dollar expended for feed.

The Holly farmers have a strong livestock shipping association, which has done $13,420 worth of business, saving $1,600 to the farmers since organized. The officers are: J. H. Leonard, president; W. H. Wright, vice-president; P. A. Branson, secretary-treasurer and manager, who with George D. Shell and Joe Boets constitute the board of directors.

The organization work in the country is well under way and with the cooperation manifested in farmers' affairs, Prowers county is rapidly taking the place it so richly deserves. There is both irrigated and dry farming carried on, there being about one-fourth of the agricultural land irrigated and the remainder dry farmed. The year was exceptional and the crops under each condition were good. As a result the farmers are having ample opportunity of selling their land, but in most cases consider it more profitable to keep it and produce crops.

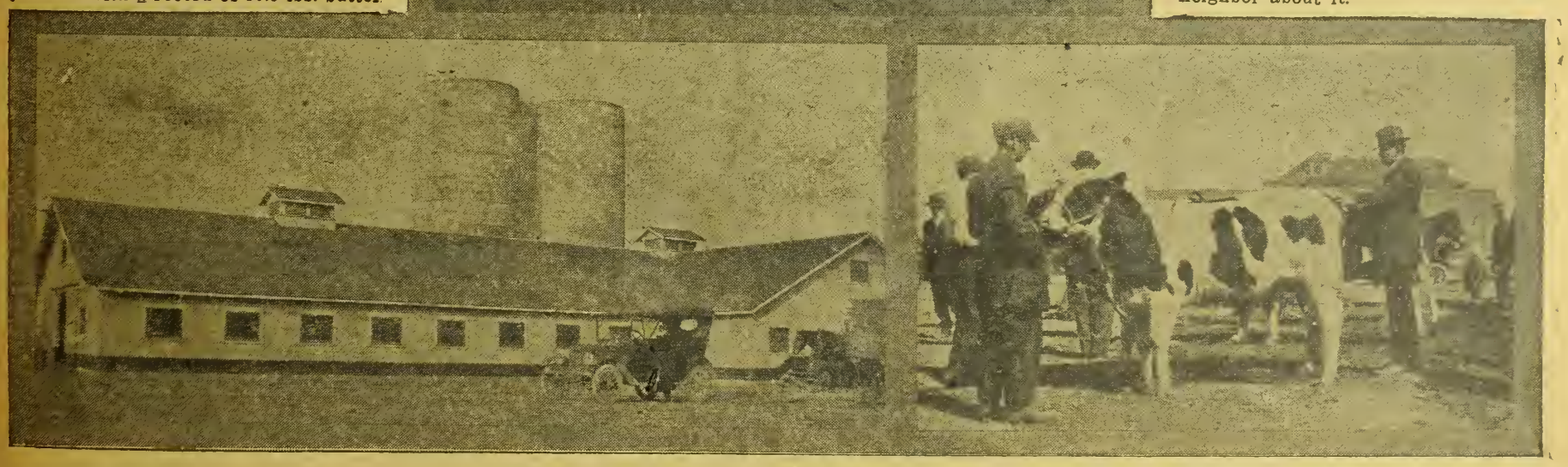
Beet tops are used as part of the feed ration in this section. They are stacked or put in piles for future use at the time they can be handled after topping. The feed from this crop is very valuable for meat and milk. Last winter considerable stock was lost in the plains section because of a severe winter and a shortage of feed. The farmers have prepared for such an emergency this year and are in position to feed their stock in a better way.

The Prowers county section has quick transportation to the Kansas City market to which the larger part of the meat animals are shipped. The farmers are justly proud of their section and have faith in it. With this feeling they are rapidly bringing their land to the highest state of production.

Children to Test Cows

The trustees of the Darrah school, in Lincoln county, Idaho, are putting in a Babcock testing outfit in the school for the use of pupils and people of the community. The county agent hopes that this will be the beginning of a cow testing association for the county and that a great many of the "boarder" cows will be eliminated.

If you like this magazine tell your neighbor about it.



VIEWS IN THE HOLLY DAIRY DISTRICT, PROWERS COUNTY, COLORADO

At Top—Dairy Maids of Holly. Bottom at Left—Dairy Barns on American Beet Sugar Company's Center Farm. Bottom at Right—Carlos W. Hall of Denver Judging the Bull Classess at the Holly Dairy Show

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A Westerner's Impression of Wisconsin Potato Show

THREE POINTS BROUGHT OUT THAT WILL HELP OUR GROWERS

STUART L. SWEET, Chief, Colorado Office of Markets

In view of the approaching Western Potato Show, scheduled to be held in Denver during the week of the National Western Stock Show, the accompanying article on the Wisconsin show, written for Western Farm Life by Stuart L. Sweet, is of especial interest. Nothing has done so much for the potato industry of Wisconsin as the educational exhibition which is held in that state annually. The Western show will be modeled after the Wisconsin show and will be thoroughly representative of the big industry of the seven states participating.—Editor.

POTATOES here!—potatoes there! potatoes everywhere! — and yet consumers were unable to get a good baked potato! In the land of potato plenty — and Wisconsin now ships annually over 20,000 cars of potatoes—there is an apparent scarcity of edible, bakable potatoes. With all of her splendid seed potato improvement work—her great annual Potato Show—this big potato producing state has failed to fulfill the demand of her own people, of her dining cars and hotels and of the thousands of Chicago consumers in that huge market at her door for "bakers." Wisconsin either does not produce the much desired article or has failed to sort them out and mark them "baker grade." It takes care to establish the market for this fancy product, it takes advertising to widen it and it takes standardization to maintain it. The demand is there but it is not being filled from local production.

This shows the opportunity for Colorado and western potato producers who can meet this demand and maintain this trade.—Point One.

Whatever Wisconsin's shortcomings may be in the potato work, the potato industry of that state is on the whole remarkably successful and has had, no doubt, more support in its advancement and development than probably any other state in this country. Wisconsin has brought certified seed potato work to a high state of development.

A visitor at the Wisconsin Potato Show is impressed, first, with the great ables of certified seed stock in the center of the auditorium. There were some samples of "perfect" seed, brushed, manicured, eyes washed, eyebrows painted and all dolled up for the show. Interesting?—Yes; and instructive in showing true varietal characteristics of these potatoes, but these "perfect" potatoes are not the commercial seed. They are not the stock found on the market or the stock which the grower plants.

Prof. J. G. Milward, secretary, Wisconsin Potato Show, and the motor which keeps the potato industry of that state rolling ahead, has met the need for commercial or "practical exhibits," as he likes to call them, in showing large tables of true commercial certified seed stock. On these long, wide tables were bushels and bushels of "bin run" or "field run" certified seed potatoes. They were the real feature of the Wisconsin show and may truly be said to be the key to the future success of this growing industry in this great potato producing state.

These practical exhibits of certified seed were representative samples of the fine seed stock as yet produced in limited quantities in Wisconsin. They were shown just as they came from the bin or from the field and they were the seed potatoes which our western potato growers would receive if they bought Wisconsin certified Cobblers. Early Ohios, Rural New Yorkers, Bliss Triumphs, Green Mountains or Burbank seed potatoes.

Careful examination of these exhibits showed this seed to be distinctive from the ordinary seed potatoes found on the market in two things. First—they showed varietal purity; that is, freedom from a mixture of varieties, and second —they showed a remarkable freedom from disease. They were generally true to the type of the variety in question. It was an impressive sight.

These exhibits attracted more attention than any other one thing at the show and they represented the results of several years of potato improvement and development work in that state. They were an actual representation of certified Wisconsin seed now on the market. It will pay our Colorado growers to buy certified seed for their seed plots, so that we may have the benefit of Wisconsin's work instead of going through the tedious period of the years of development which Wisconsin now has at her back. Let us take advantage of this work.—Point Two.

Around the sides of these big tables of certified seed were the county exhibit booths about 12 feet square and containing shelves on three sides where a feast for the eyes awaited the visitor. Truly, those present at the Wisconsin Potato Show were "potato bugs." They were enthusiasts, they had come from near and far and they were well repaid for their time, trouble and travel.

The booths were remarkable for their beauty, for their attractive arrangement, for the superb and uniform specimens and for the few varieties displayed by different counties.

Wisconsin has a reputation for standardization of varieties in the different districts. These varieties are selected in consultation with the county agents and the potato specialist of the college, Prof. J. G. Milward, so that the varieties chosen were the best adapted to the soil and climatic conditions of the sections in question. The matter of the markets and market preferences were also taken into consideration in the selection of these varieties which are now standardized and grown in carload quantities by the different counties or districts of that state. There is a real advantage in this plan from a marketing standpoint, and it has aided materially the development of the potato industry of that state.

The standardization of a few varieties is forcefully shown by some county exhibits where only one or two varieties were used. Some counties exhibited only two varieties, such as Rurals or Bliss Triumps, and displayed with pride a statement to the effect that 60, 75 or 80% of the potato crop of this community or county consisted of this one favored variety. It is a plan we could well follow in Colorado.

We need a further standardization of varieties in our leading potato producing districts. The San Luis valley has been specializing on Brown Beauties for the last few years, the Western Slope section ships out large quantities of Burbanks and Red McClures, and for many years the Greeley district has been raising Rurals, Pearls and Early Ohios, the new district at Longmont is raising largely Green Mountains. But too many other varieties are being grown in large quantities in all of our Colorado producing districts.

I do not attempt in this article to give the varieties which should be grown in the different districts, but suggest that this matter is worthy of careful consideration. We need to determine upon these varieties during the coming season after a careful investigation of the important factors, including the soils, climatic conditions, yields per acre and market demands and preferences and after a consultation with recognized authorities. Then the one or two leading varieties best adapted to the loclaity should be raised by all of the growers of that section. The value of this standardization of varieties in the marketing and in seed production and certification is apparent to all. Let us act on it, this coming spring.—Point Three.

The importance of such an exposition as the Wisconsin Potato Show lies not merely in the exhibits displayed, but the work and planning and program which is behind this big undertaking which is represented through a potato show.

These three points—the opportunity for Colorado to meet the demand for the "baker grade" of potatoes, the development and use of certified seed, the standardization of varieties in the different potato districts, are fundamentally important and will mean much to the potato industry of Colorado and the West. We need to consider them carefully and, if adopted, they will have a far-reaching effect in the potato development work of the Intermountain section.

The Wisconsin Potato Show was the first large potato exposition in this country. It will have a real competitor in the First Annual Western Potato Show to be held in Denver during January coincident with the Stock show. We have an industry here which needs protection, which needs development, which needs thought and study. Let us profit by Wisconsin's wonderful work and let us team together to further the potential potato industry of Colorado and the Intermountain section.

National Federation of Farm Bureaus Organized

AGGRESSIVE PROGRAM OUTLINED FOR FARMERS OF THE NATION

ALVIN T. STEINEL

THREE hundred and fifty delegates, representing 426,000 farmers, met in Chicago recently and formed the American Farm Bureau Federation. It is the hope of men familiar with agricultural thought that through this organization the farmers may act unitedly on questions of national agricultural policy and legislation; that, in fact the farmer now has an authoritative body through which he can influence public sentiment, Congress and the federal departments with which he comes in contact. Such, at least, is the theoretical basis of the new organization. How it will work out in practice remains to be seen. The ship has been launched on an uncharted sea and it is yet to be manned.

The various state farm bureaus are to hear from their delegates and then decide whether or not to cast lots with the parent organization. Colorado's Farm Bureau is to meet at Fort Collins early in the new year to make its decision. This state, though small in point of farm bureau membership, received recognition in the appointment of its state Farm bureau president, William E. Jamison, of La Veta, on the executive committee. Mr. Jamison and E. J. Lamb, of Fremont county, ably represented the state at the national meeting. Both were impressed with the earnestness of the delegates and their aggressive concern for the welfare of the man on the soil. No other gathering purporting to represent agriculture nationally ever included so many actual tillers of the soil.

The convention was led by farmers and not by exploiters of the farmer, nor yet by representatives of the Department of Agriculture. Department men were present in numbers watching the trend of affairs with mingled feelings. Some were concerned lest the convention, as they expressed it, "cut loose" from the department, some feared radical political tendencies, but nothing incorporated in the final action of the meeting indicates other than a sound desire for a united body of farmers along constructive lines. The resolutions are reassuring. The constitution is broadly constructive, the objects of the organization being set forth in the following expressive paragraph:

"The objects of this organization shall be to correlate and strengthen the state farm bureaus and similar state organizations of the several states in the national federation, to promote, protect and represent the business, economic, social and educational interests of the farmers of the nation and to develop agriculture."

"Business, economic, social and educational interests," is an all inclusive program. Nothing less could be expected of an organization pretending to speak for the farmers of the nation. It was made clear by the leaders that there was no intention of supplanting any existing farm organization filling a special field. But those who were looking for a placid educational association, formed to back up departmental bureaus, if not disappointed, found their expectations exceeded in the scope of the organization.

Interesting comment has been made by the farm press of the nation, all of it distinctly favorable. Alva A. Agee expresses a thought in the National Stockman and Farmer that is illuminating when he says:

"The suggestion that farm bureaus cannot function as the free spokesman of farmers on account of their relations to the federal government and partial support by public funds would seem to be without a shadow of basis, if one may judge by the attitude of the delegates to this meeting. The ground was taken that the farm bureau, composed of the farmers of a county, is an integer, just as is the state college and the federal department of agriculture. It cooperates with the other two agencies in certain lines of work and makes use of a county agent to that end. It leaves itself free to engage in other work, either as citizens wishing to serve their government, or as farmers proposing to secure fair opportunities for agriculture."

To which may be added that the federation has no apologies to make for its relations with the Department of Agriculture. They are legitimate. The department is and should be the servant of the farmer whose taxes support it. There is danger, otherwise, of the creature assuming superiority to its creator and dictating an agricultural policy which should be dictated by the farmers. If the federation becomes the lusty youth which its infancy already indicates, it is unlikely that another Secretary of Agriculture will be named by any President of the United States without consulting the farmers. This is said without disrespect to the distinguished educator now occupying that high cabinet position, which, in all fairness to the fundamental industry, should be filled by a farmer. While all cabinet positions cannot well be filled in that manner, it will be noted that none but a lawyer ever becomes Attorney General and that a miner is at present Secretary of Labor. So why not a farmer as Secretary of Agriculture? Nothing is so important to the welfare of the people as food production. There is no need of argument on the point that a farmer should represent the farmers in the President's cabinet.

At present the Secretary of Agriculture is a bureau head, as is the Post-Master General, or the Secretary of War. What we need is a broader definition of duties for this cabinet officer who should be not merely an administrative head but a spokesman. It is in this and other matters of broad national concern that the Farm Bureau Federation can servie. If the organization lives it will "run things," just as some of our active county farm bureaus are now outlining a working program for the county agent. If it does not assume leadership, but is to be merely a mouthpiece for the Department of Agriculture, it will be short lived.

The temporary officers elected were: J. R. Howard, Clemons, Iowa, president; S. L. Strivings, Castile, N. Y., vice-president. The resolutions, which are given herewith, express the sentiment of the delegates regarding the problems of the hour in agriculture:

I

The Resolutions

We declare our independence of affiliation with any commercial, labor or industrial organization, but maintain a co-operative attitude toward all movements promoting the welfare of American institutions.

II

We appreciate the work of the press, both agricultural and secular, in its promotion of high ideals and constructive thought.

III

We unqualifiedly assert our loyalty to the principles of the freedom of the people under our American institutions, and while recognizing the right of any and every class of our people to associate

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Splendid Display of Livestock and Farm Products

EL PASO COUNTY AUTUMN EXPOSITION AT COLORADO SPRINGS

H. A. LINDGREN

THE El Paso County Autumn Exposition held at Colorado Springs December 8 to 13, was held under both favorable and unfavorable weather conditions. A part of the time it was extremely cold and two days of the time were pleasant. The showing of stock and agricultural products was very creditable. The exhibits were shown in the Temple theatre building with a temporary structure built to one side for the livestock.

The poultry show was well filled with entries from all of the principal breeds of chickens. The quality of the birds shown was excellent. The same was true of the pet stock exhibits. Several out of the state breeders were represented.

The exhibits of agricultural products carried out the farm bureau idea, in that each community made up an exhibit and showed as a community entry and also as individual exhibits. The displays from each community had much to do in stirring up the pride of the people interested in it. While this style of entry makes it more difficult for the judges to place the entries, it showed what each district was doing in argricultural development.

The community displays were all general in character. They were made up of corn, small grains, vegetables, potatoes, sewing, baking and candy making. After the individual entries were passed upon by the judges, the best community display was selected. This created a great deal of interest.

The grains and other farm products shown were largely from the dry land sections. The corn especially was most excellent. The corn shows in the various sections are doing a great deal to improve the type and quality of the corn grown in the state.

The various community placings will be given. First place was won by the Table Rock Farmers club, which community is 20 miles north and east of Colorado Springs. This community covers a territory 8 miles square, in the dry farming section. The people in this club have produced in the past year 13,825 bushels of wheat, 79,200 bushels of oats, 30,000 bushels of rye, 2,870 bushels of barley, 550,000 pounds of potatoes, and last, but not least, 14,650 pounds of butterfat. This showing is most excellent and indicates what the club is doing toward feeding the world.

The second prize for community exhibit was won by Eatonville. While this display was not so large as some of the rest, the exhibits were exceptionally fine. Third was won by the Buttes and Wigwam community. The others represented were: Monument, Kendrick, Ellicot, Bleeker, Leader, Drennan, Fountain and Highway Junction.

The Boys' and Girls' Clubs exhibit was composed of entries from all over the county. The school work was shown in this display. It did much to show what the work means to the boys and girls.

Much of the success of the show is due to the work of County Home Demonstration Agent Miss Mary Collopy and County Agriculturist Lauck, with the splendid co-operation they are getting from the people of the county.

The livestock show in the annex built for that purpose was filled with some of the best stock to be found in the state. All departments were represented and the quality was good. Charles I. Bray, associate professor of animal husbandry at the Colorado Agricultural college, acted as judge.

As a result of the interest in the show and in the improvement of the livestock, the breeders met at the Elks Club on the evening of December 10 and started a purebred livestock breeders association. Officers were selected as follows: President, James T. Gould; vice-president, Geo. T. Sinton; secretary, W. E. Cushner; treasurer, Dr. C. C. Stewart. The working committee on organization was: S. G. Rose, J. W. Brauer, J. W. Potter, Henry Luehring and Frank J. Evans. The organization will be completed and a drive for membership made in the near future. This is the fifth purebred association organized in the past year in Colorado.

Live Stock Awards

The following premiums were awarded on livestock:

In the Shorthorn beef division the herd of S. J. Evans took the following prizes: Heifer sr. calf, first and second; bull jr. calf, first and second; bull jr. yearling, first; champion heifer under 2 years; champion bull under 2 years; grand champion heifer, any age. The entries of E. J. James in this division took first in bull sr. yearling class and champion bull over 2 years.

In the Hereford classes the Stratton Farm herd was shown without competition.

In the dairy division the Holsteins claimed the floor and the judging was very close in many classes. Cows, 3 years or over—Sinton Dairy first; Chas. Mangas, second; County Farm, third. Heifer, sr. yearling—Sinton Dairy, first; Holland Dairy, second; County Farm, third. Heifer, jr. yearling—Columbine herd, first; Chas. Mangas, second. Heifer, sr. calf—Chas. Mangas, first and second. Aged bull—Cloverdale Dairy, first; Holland Dairy, second. Bull, 2 years or under—County Farm, first. Bull, jr. yearling—Columbine herd, first; Cloverdale Dairy, second. Bull, sr. calf—Stratton Farms, first; Columbine herd, second. Bull, jr. calf—Chas. Mangas, first; Columbine herd, second. Champion cow over 2 years—Sinton Dairy. Champion heifer under 2 years—Columbine herd. Champion bull, over 2 years—Cloverdale Dairy. Champion bull, under 2 years—Columbine herd. Grand champion, cow or heifer, any age—Sinton Dairy. Grand champion bull, any age—Columbine herd.

On the dairy division, Milking Shorthorns, the Pine Valley Farms showed without competition. A grade cow and calf showed by J. W. Peck were also in this division without competition.

Grade cows in the Holstein division were shown and placed as follows: First, R. W. Richey; second, Brown and Sons; third, Clarence Lauck.

In the Belgian horse division the entries of Cathedral Rock ranch showed without competition. In the Percheron division, General B., owned by Stratton Farms, placed first, and Blue Ribbon Ladd, owned by A. B. Hope, placed second. The Percheron mares, 4 years or over, owned by Edwin James, placed in first and second places without competition.

In the any age Jack class, Lord Randolph, Jr., owned by Stratton Farms, placed first, and Jerry Simpson, owned by A. B. Hope, placed second.

In the Sheep division the entries of the Spencer Penrose farm showed without competition.

In the Poland China division there was no competition and the entries of Carl Decker, H. A. Dunbar and A. V. Watson were shown in their respective classes.

In the Duroc-Jersey division there was lively competition in some classes. The following awards were made: Aged sow, first, H. Bruning. Sow, over 18 months, under 24—First, J. W. Brauer; second, Fred Staley. Sow, under six months—First, A. G. Brauer; second and third, Stratton Farm. Boar, 2 years or over—First, Stratton Farm; second, Fred Staley. Boar, under 6 months—First and second, J. W. Brauer; third, Fred Staley. Champion boar, 1 year or over—Stratton Farm. Champion boar, under 1 year—J. W. Brauer. Grand champion boar and sow, any age—J. W. Brauer.

The Black Forest Dairy Farm, Chas. Mangas, Monument, Colo., had six Holsteins entered in six classes from the Junior yearlings up. This was the largest herd of Holsteins in the show and Mr. Mangas has six ribbons to show for his trouble—two of them firsts.

In the saddle horse classes, six beauties that have just finished the fair circuit in charge of H. S. Burnham, of Colorado Springs, were shown by him.

Saddle stallion, any age—First, Excelsior Squirrel, R. W. Brooks, owner; second, Billy Squirrel, Mr. Allen, of Pueblo, owner.

Champion saddle stallion—Excelsior Squirrel.

Saddle mare class—First, Jean Brett, owned by Wm. G. Johnston; second, Dixie, owned by Miss Ruth Banning.

Saddle gelding class—First, Colorado Silver Dare, owned by Judge J. H. Vorhees; second, Golden Dare, owned by H. S. Burnham.

Lerna Baker Piertertje, Grand Champion Holstein at the El Paso County Autumn Exposition. Owned by George T. Sinton

Forecast of West's Biggest Livestock Exposition

PLANS COMPLETE FOR THE NATIONAL WESTERN AT DENVER

THE rapid growth of the annual Stock Show in Denver has resulted in adding several acres more land to the show grounds for the next show January 17th to 24th, and in addition the association has put limitations as to the kind of stock that can be exhibited. The new building being erected will hold about 600 cattle and an effort is being made to limit the entries in the Shorthorn and Hereford breeds to that number. Committees will pass upon the cattle entered and those that are not suitable for exhibition will ge withdrawn. The number of cattle that any exhibitor can enter in a single class is also limited. Over $12,000 in cash premiums will be awarded to these two breeds alone and the effort of the Stock Show management is not to secure exhibits, but to limit them to the cattle of quality.

All classes of livestock will be represented, beef cattle, hogs, dairy cattle, horses, sheep, poultry and pet stock. There will also be exhibits of farm appliances and machinery, an exhibit of educational nature by Colorado Agricultural college, a showing of results in Boys' and Girls' Club work, and the usual sales of breeding stock in the various classes. The evening horse show and entertainment will be better than usual, and that is saying a great deal, for the Denver horse show is one of the biggest annual events of its kind.

The National Western Stock Show is now acknowledged to be in the same class with the International Show at Chicago. In some respects the Chicago show is larger than the Denver show and others the Denver show eclipses the Chicago show. This is the one event of the year that stockmen all over the West look forward to. This year, for the first time, the Denver show will be financed and conducted entirely by the Western Stock Show Association. Heretofore, the Denver Union Stock Yard Company has been called upon to finance the show and take the receipts to reimburse it. After paying out more than $25,000 cash in excess of the receipts, the Stock Yard company this year declined to go any further so the Stock Show Association has rented the guildings and grounds and will conduct the show itself. The state of Colorado will contribute $5,000 towards the premiums and the Denver Civic and Commercial Association a similar amount. In addition the association has determined that everyone must pay to enter the show. There will be no free list, even the exhibitors being required to purchase a season ticket when they make their entries. It is hoped that the attendance will be strong enough to enable the show to break even.

Denver is enthusiastic over the annual exhibition and will turn out in force and the stockmen and their families from all over the West are expected to attend in larger numbers than ever before. There was some discussion in the association regarding raising the admission price, but it was finally decided to make no change and the general admission will be fifty cents as heretofore.

Get Into the Beef Game

Do you want to grow Shorthorn beef? If so, be sure to attend the best auction sale of Shorthorns ever staged in the west. This sale will be held in the arena at the Stock show on Wednesday afternoon, January 21. On the back page of this issue will be found an advertisement of the American Shorthorn Breeders' association announcing this sale under the official auspices of this association. Thirty bulls and twenty females, the pick of the western herds, will be offered. It is announced that all offerings will be of the very highest type of breeding stock; in fact, nothing less is to be expected from an auction that has the official sanction of the parent organization.

Not only will there be foundation stock of value to the western farmer and ranchman, but some of the offerings will be of the kind that experienced breeders need to replenish the blood of their own herds. Catalogues will be distributed at the beginning of Stock Show week and ample opportunity will be given buyers to inspect the offerings before the opening of the sale. The Shorthorn association has just one aim, and that is to disseminate good blood. It is not striving for the highest sales figures but seeking to give the average farmer and ranchman an opportunity to found a herd of beef cattle at a cost commensurate with the returns that good blood always brings. Our advice to the farmers in this western country is to come to the Stock show prepared to look over these breeding cattle, with a view to getting into the beef game on the right foundation.

Horse Sale at Stock Show

Fifty head of purebred registered Percheron and Belgian draft horses will be offered at auction during Stock Show Week in Denver under the auspices of the Colorado Purebred Draft Horse Association. The animals are being selected from the best Percheron herds of Colorado. The consignors include Zang's Elmwood Stock Farm, Broomfield; R. A. Chace, Ft. Morgan; J. D. Brunton, Aspen; Clarence Bixler, Boulder; Wenzel Blach, Yuma; H. Bert Cave, Littleton. Catalogues are ready for distribution and may beh ad on application to the sale manager, Colorado Draft Horse Association, 944 Marine St., Boulder, Colorado.

This sale offers farmers a rare opportunity for the purchase of registered brood mares and stallions for draft power and the foundation of horse breeding herds. The offerings will include offspring of some of the most noted mares and stallions in America. The sale will take place Thursday, January 22, at 10 a. m., in the Stock Show pavilion.

If you like this magazine tell your neighbor about it.

Boy Wins Championship in Boulder County Corn Show

AN ACTIVE FARM BUREAU'S REPORT OF A YEAR'S PROGRESS

ALVIN T. STEINEL

"GROW more corn to fill more silos to feed more stock to produce more manure to grow more corn."

That is the motto of the Boulder County Farm Bureau. That this slogan is being practically applied was demonstrated at the fourth annual corn show held at Longmont, December 10th, in connection with the annual meeting of the Farm Bureau. While abnormal weather conditions kept many farmers from bringing exhibits and cut down the attendance somewhat, the show was, nevertheless, highly successful as an object lesson in progress. F. S. Luethi, president of the Farm Bureau, called attention in his address to the great strides made during the seven years since organization of the bureau.

"Seven years ago," he said, "the idea was prevalent that we could not raise corn successfully in Boulder county. The remarkable change that has taken place is shown by the fact that when we organized the bureau there were very few silos in the county, but now we have 372—1 silo for every 4.2 farms. The Farm Bureau and county agent have persistently advocated the construction of silos and the sentiment thus created is responsible for our great development in this respect. Corn club work is another feature that speaks for itself in the exhibits which we find here before us. Our pig clubs and calf clubs have done equally as well as corn clubs. In fact club work alone has been worth many times the expenditure of effort and money put forth by the Farm Bureau since organization.

"The farmers of the United States are the balance wheel of this country. We must depend on them to preserve our national structure. The farmer at present is between the upper and nether millstone of capital and labor, and is suffering. He must keep his head and see that our government shall not go off on a tangent.

"The Farm Bureau organization offers him the opportunity for working out his problems in cooperation with the Department of Agriculture because the bureau is recognized by the government as the farmers' official organization.

"I have studied the program of the Russian Bolshevik and one of their fundamental principles is that basic industries belong to the public. They have nationalized farms in Russia. The radicals of this country use the same arguments. They are saying that the steel industry is basic and the coal industry is basic. We all know that the farm is the basis of all industry and the next step of the radicals will be to advocate nationalization of farm lands. It behooves the American farmer to wake up and combat that idea."

These statements by the president of the bureau created a stir among the farmers, many of whom had failed to realize just what the radical program was leading up to.

County Agent's Report

County Agent H. H. Simpson, in his annual report given verbally, stated that the livestock and crop improvement project of the Farm Bureau had been the biggest work of the year. Work in standardization of varieties in corn, wheat, alfalfa and other crops had progressed. He reported that last year there was a demand for 60,000 lbs. of pedigreed Minnesota 13 seed corn and that the farmers had been able to supply only half of this demand. Seventeen Colorado county agents got Minnesota 13 seed corn for club work in their localities. Prices received for the 1918 seed crop were 9 and 10 cents a pound.

Mr. Simpson explained the purpose of registering some of the fields where Minnesota 13 corn and standard varieties of wheat are being grown. These registered fields are to furnish a supply of absolutely pure seed as to variety which would be depended on for a future source by the farmers of Boulder county and other sections. Out of thirty applications for corn registration fifteen fields were found to be true to type and worthy of registration. This does not mean, however, that these fields furnish the only pure Minnesota 13 seed. Many other farmers are growing pure seed although in unregistered fields. It is manifestly impractical to keep track of all seed corn grown either for home use or for sale, but by keeping a limited number of fields on the registration list it insures the future pure seed supply.

In wheat there are now six fields registered in Boulder county. Mr. Simpson explained that these six were selected after an inspection of 150 fields. This indicates how badly mixed the wheat varieties are and the need for pure seed. The test which has been in progress now for four years in Boulder county with the Marquis and Defiance varieties of wheat, will be continued. Marquis, for the first time the past season, gave a higher average yield in the test fields than Defiance. Kanred, which is an improved type of Turkey Red, originated by the Kansas State Experiment Station, was tried by several farmers who found it very satisfactory. The Kansas station claims that Kanred produces on the average of 4 bushels more per acre than Turkey Red. Mr. Simpson said that in the tests made only one field finished the season under what were considered fair conditions, consequently no definite conclusion could be based on the results of the past year. These tests will be continued.

Testing Grimm Alfalfa

Grimm alfalfa, known as one of the most hardy varieties and badly needed in northern Colorado and in the higher altitudes of the state, is being tested on 500 acres in Boulder county. Three demonstration plots are located in the mountain sections of that county at 8,000 feet and upward, one plot being located at 9,500 feet, which, as far as the writer is aware, is the highest point on the continent at which alfalfa is being tested under expert supervision. The results of these tests, which are not yet sufficiently advanced to be conclusive, will be watched with great interest.

Mr. Simpson's report further showed that of the 372 silos now to be found in Boulder county, 72 were built during 1919. The Cow Testing Association was reorganized and there are now 384 cows on test. Much other information was given to show farmers that their plans adopted last winter for improvement of agricultural conditions had been effectively carried out by close cooperation between the county agent and the committees of the bureau.

Committee chairmen were called on for short reports regarding their projects, all of them bringing out the fact that the program of improvement was highly practical. Mr. C. L. Hover, who spoke on farm business projects, told of the instruction schools held last spring at which farmers were given full information regarding preparation of income tax reports. As a result of this work many farmers were able to make out their reports without the assistance of a banker or lawyer.

J. H. Golden, head of the marketing project, made an interesting report concerning this new feature of Farm Bureau work, bringing out the fact that the beet raisers were in a fair way to solving the troublesome question of the price of beets. While this was not specifically a part of the work of his committee, he cited it as an example of the necessity for marketing projects in the Farm Bureau program. He spoke of potato grading, grain grading and cooperation with the United States Bureau of Markets in these matters. Other chairmen made equally interesting reports, the details of which must be omitted because of space limitation.

Mr. A. E. Lovett, state leader of county agents, gave a very clear and interesting explanation of the purposes of the National Federation of Farm Bureaus and advised the Boulder county farmers to make careful investigation of the organization's plans and to send a representative to the meeting of the State Farm Bureau in Fort Collins early in January. It will be up to the Colorado farmers at that time to decide whether they shall become affiliated with the national organization.

Kezer Announces Awards

The event of the day was the announcement of awards in the corn show made by Prof. Alvin Kezer, who officiated as judge. Prof. Kezer prefaced his announcement with a few remarks concerning the great progress Colorado has made in corn growing the last few years. The increase in corn production in nine years has been 125 per cent. In placing the awards, Prof. Kezer explained that type in the variety and type in adaptation to conditions, were governing factors. He likes a smooth type ear in Minnesota 13, because this type matures earlier, and early maturity is a quality essential to any variety adopted by Colorado farmers. The smooth type has a shallower kernel, but the question is not whether there is more corn on the ear but whether a variety produces more bushels to the acre and more tons of feed.

In announcing the corn club awards he pointed out that the scoring was based not on quality of product alone, but that the boys were obliged to keep a record on cost of production and profit and to submit a story telling how they grew their acre of corn. On this basis the awards in club work might have been differently made had all the young men kept records, as required. There would have been no change in award of first premium in this class, but corn which clearly would have been second in ten ear exhibits received no ribbon because the youthful grower failed to keep his records.

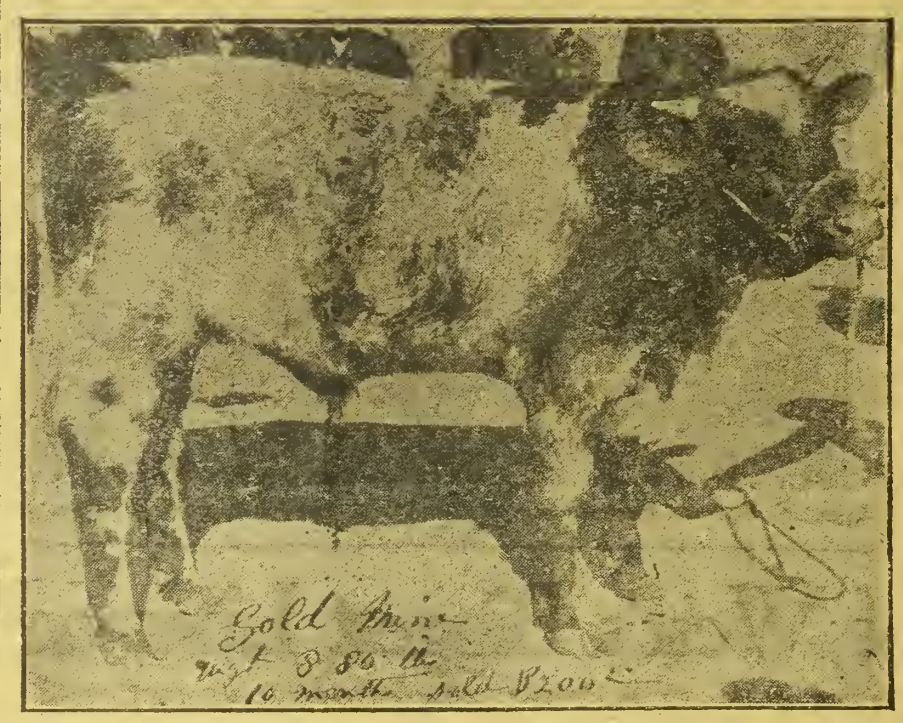
Regarding exhibits of seed corn in half bushel crates in the club classes, he said it was very difficult to decide between first and second. The crate which received first premium showed 98 per cent germination, while the second premium crate showed 100 per cent germination. The reason the latter was set down was that the corn, on close examination, indicated some crossing, evidently from a nearby field of white corn.

There was an interesting contest in the placing of 10 mongrel ears open to everybody. In this contest 39 persons submitted scores, and W. S. Hill, of Fort Collins, club leader for Larimer county, was the winner. He placed 6 of the 10 ears correctly. E. J. Henderson was second with 5 ears, and D. W. Spangler third with 4 ears, as they were finally placed by Prof. Kezer.

The auction sale of pedigreed seed corn, which was in charge of Alpheus Bashor, of Longmont, furnished a lively ending to the day's proceedings. Glen Leggett got top price for half bushel crate at $9.00, the purchaser being Charles Rossiter. Bernard Buster's grand champion car was knocked down to F. S. Leuthi, president of the Farm Bureau, for $13.

Exhibit of Silage

An instructive exhibit of ensilage was made by the Hinman Silo Company, of Denver. The ensilage had been taken from silos in the neighboring country, some of it being perfect in character, some made from immature corn, etc., the object being to show the difference in feeding value of ensilage made at various stages of maturity of the corn. This exhibit included silage from the farm of Mr. Simmonds who planted Minnesota No. 13 corn on ground which



Gold Mine, a Ten-Months-Old Bull Shown by Sam Ball at the First Western Stock Show in Denver, Fifteen Years Ago

WHEN SAM BALL WAS NOT WANTED AT THE STOCK SHOW

Sam Ball, breeder of the famous Shortgrass Shorthorns at Wray, Colorado, was one of the pioneer exhibitors at the National Western Stock Show. It wasn't the fault of the Stock Show association that he came to the first exhibition. They tried their best to keep him away. Not because they had any objection to Sam or his Shorthorns, but because, at that time, he lived over the line in Nebraska.

The originators of what was then known as the Western Stock Show did not forsee, at that early day, fifteen or sixteen years ago, that the exhibition would become one of the big shows of the world. They thought of it then only in the sense of building up the livestock market at Denver and they believed it could be done without the aid of breeders east of the Colorado line.

Sam Ball started in the Shorthorn game back in 1877 in Illinois. He went to McCook, Nebraska, in 1885, when everything round about was range country and purebred herds were scarce as hen's teeth.

Ball knew the value of livestock shows, so when he heard of the plan of Denver men to hold a Western exhibition he immediately applied for a premium list and said he wanted to enter.

"Sorry, but our show is not open to Nebraska breeders," was the word he got.

Ball wrote back and said he wanted to come anyhow, but correspondence availed him nothing, so he fitted his herd and came at his own expense. He got space at the show, but still found himself shut out of the competition, because of the ruling. Having a well fitted herd, in fact the biggest and best string under the Shorthorn tent, his exhibit caught the eye of the cattlemen.

One result was the sale of the wonderful youngster shown in the accompanying illustration, Gold Mine, a ten months' old bull, at $200, which was a good price in those days. The buyers were Fred and William Weiss, of Elbert, who used him in their foundation herd. His descendants have produced grand champions in the cariot calf classes at the National Western.

Sam Ball was never excluded from the show again; in fact he has helped make it the big exhibition that it is today, for he has come back year after year with exhibits of the type of Shorthorns that western farmers and range cattlemen want; the kind that are bred and nourished on the buffalo grass of the plains. Eight years ago he moved his herd to Yuma county, Colorado, where he is serving the farmers of his own and the nearby states of Kansas, Nebraska and Wyoming, who come to the ranch to get their breeding stock.

had been originally prepared for beets. The beets came up but they made such a poor showing, owing to lack of early water, that Mr. Simmonds decided to plow them under. He worked the ground several times and planted corn after the first week in June. He gave this field of 35 acres only one irrigation and it made a fine yield. His cash return was $4,140, or at the rate of $118 per acre. Of this amount $400 was for grain sold and the balance for silage.

W. A. Dickens brought in a sample of beet top silage from his farm near Longmont. He has 175 tons of this put up in a trench, which he is feeding to stock cattle. He says they relish it and are in thriving condition. At the time of the corn show farmers who relied on feeding their tops in the field had lost them by reason of the heavy snow that covered the ground. The trench silo saves all the tops and Mr. Dickens thinks it well worth while to take care of this valuable by-product.

Directors elected by the Farm Bureau for the ensuing year were: W. A. Groom, of Boulder, and C. L. Hover and Frank Wadsworth, of Longmont.

Following are the awards made in corn:

Minnesota No. 13 (adult class): E. Rasmussen, first; F. S. Leuthi, second; Steve Bishop, third; W. A. Groom, fourth.

Yellow Dent: J. E. Manchester, first; Richard Sammons, second; R. A. Hay, third; Mrs. F. W. Culver, fourth.

White Dent: St. Vrain Dairy Farms, first; C. W. Finch, second; J. W. Madden, third.

Swadley: J. M. Thompson, first; D. M. Ward, second.

Popcorn, smooth: J. E. Manchester, first.

Popcorn, rice: J. E. Manchester, first; St. Vrain Dairy Farms, second.

Boys' Club (all Minnesota No. 13): Bernard Buster, first; Horace Selby, second; Leslie Madison, third; Rudolph Brand, fourth.

Best crate seed corn: Bernard Buster, first; Glen Leggett, second; Leslie Madison, third; Horace Selby, fourth.

Sweepstakes, ten ears: Bernard Buster.

Grand champion ear: Bernard Buster.

Judging contest: W. S. Hill, first; E. J. Henderson, second; D. W. Spangler, third.

Colorado At International

Among the winners at the International at Chicago was the herd of the Allen Cattle company, Colorado Springs. Thisn oted herd was in the money six times. Their show herd consisted of eight head, three of which played an important part in the Shorthorn sale during the week. They sold two heifers, one to James Brown of Chicago for $1,250, and the other to Dunndale farm of Alexis, Ill., for $1,400. Their senior white bull calf, Silver Star, which had been twice grand champion and four times champion at the fairs in the west during the year, was sold to P. H. Griffin of Drummond, Montana, for $5,000, the second highest price in the sale. This is an indication of the place western bred cattle have in the minds of the breeders.

The sire and dam of this calf, Silver Star, were both bred by the Allen Cattle company. The sire, Western Star, was a first prize winner at the International in the past and is now in Argentine Republic. The company is to be congratulated on their success, which means much not only to them but to the western Shorthorn industry. W. N. W. Blayney of Denver won on Herefords in six classes. Among his winnings were third on senior calf bull.

Colorado had a part in the winning among the fat and feeder cattle in carlots. The best car of fat steers was of the Angus breed. They were fed by John Hubbly, Mason City, Illinois, who purchased them at Denver last January where they won grand championship in the calf carload class. They were bred by N. L. Harrison of Roggen, Colo. Mr. Hubbly won second and fourth on carlots of calves from the Harrison herd in the feeder class.

Cernforth & Son of Elbert, Colo., won fourth on a carload of Shorthorn calves in the feeder class.

A Hereford calf born January 8, 1919, was the winner of this coveted prize. He was owned and exhibited by Marion Armentrout of Botna, Iowa. His feeder was Joe Edwards. The weight of the steer was 1,025 pounds and he sold for $2.62 per pound. The purchasers were Mousel Bros. of Cambridge, Nebraska. The judge, J. J. Cridlan, of England, pronounced the calf the best he had seen in 25 years.

Duroc Sale at Denver

In this issue you will notice an advertisement headed "Last Call! Duroc Sale at Denver!" Western Farm Life wishes again to call the attention of its readers to the unsual opportunity offered in this sale to improve the class of hogs raised on our western farms.

The manner of selecting animals for this sale makes it possible to offer on January 20th, a much higher average lot of registered Durocs than could possibly be put in by a single breeder. The two or three animals from each herd have geen selected from among the choicest Durocs each breeder has developed. They are strictly high class Durocs from the farmers' and breeders' standpoint.

Especial attention has been paid to future usefulness as breeders and at the same time keeping in mind, modern type, popular blood lines and representative individuals of this great breed of hogs.

The catalogues of this sale put out by the Colorado Duroc Breeders' Association at a cost to them of several hundred dollars, are free for the asking. This catalogue should be in the hands of every progressive hog raiser in the west.

It will give you a good idea of every Duroc to be sold and it also contains photographs of a number of the most famous Durocs in the west. A postcard request to the secretary of the Colorado Duroc Breeders' Association, C. F. Burke, Pueblo, Colorado, will get you one of these attractive catalogues.

You will note that quite a number of the Durocs to be sold, besides being high class breeding stock, have been prize winners at Pueblo, Denver, and other good livestock shows, and we can hardly see how a more attractive offeringc ould have been gotten together for a public sale.

Any one of these high class registered Durocs taken to a western farm and properly cared for should make money for the buyer and will, within a short time, raise the standard of the hogs to be found in an entire neighborhood.

Scrub Purebreds Counted

Of particular interest in a livestock survey recently completed in South Dakota are figures on the quality of purebred sires, as well as on the number of scrubs and grades in that region. Fourteen counties typical of livestock conditions in the state were included in the survey. Of the sires in herds of cattle 65 per cent were grades or scrubs, and about 25 per cent of the purebred sires were classed as inferior, according to a part of the reports. This is the first count of scrub purebreds, over a considerable area, received by the United States Department of Agriculture.

It was found that when purebred sires were used, the average herd of 20 grade cows returned $540 more profit during 1918 than when grade or scrub sires were used. It has been estimated that the elimination of inferior purebred sires would increase the average profit in each herd from $540 to $800 annually.

An Outstanding Jersey Sire

The Valley Home Jersey Farm of Elbert, Colo., has some excellent Jersey breeding stock. The farm is operated by Joseph Janner. His herd sire is Valley Home Pogis 173645. He was sired by Lass 64ths son, by Pogis 99th of Hood farm, by Hood Farm Pogis 9th and out of Sophie 19th of Hood farm. His grand dam, Lass 64th of Hood farm won the junior four-year-old record by making 962 lbs. of butter from 13,444.6 lbs. of milk in a year. He is a grandson of Hood Farm Pogis 9th, who is the sire of more daughters in the registry of merit than any other sire.

The dam of this bull has a registry of merit record of 536 lbs. of 85 per cent butter as a 2½-year-old, and 850.59 lbs. as a six-year-old.

$20,000 Crops Saved

Preliminary reports from the squirrel poisoning campaign that has been conducted in Kootenai county, Idaho, the last season, show that $20,000 worth of crops were saved on 13,750 acres, and that $3,250 worth of crops were lost. These figures represent reports of 150 farmers. Others are yet to report.

ESSEX MOTORS DETROIT USA

Do You Know Hudson

But Through Sheer Merit Alone Essex Made Its Thirty Million Dollar Sales Record

Builds the Essex?

Essex success has not been accidental. No one doubts its right to the position it holds.

But how many know why Essex in its first year revealed qualities more mature, more evident of the influence of long experience, than is commonly found in cars even in their third and fourth year.

You will recall the Essex was announced one year ago without one word as to the identity of its builders. Not a claim was made for its performance.

You were asked to go look at it, take a ride and form your own opinion. The Essex, we said, would have to speak for itself.

Now that it has established itself, we reveal why Essex has all the qualities of cars of long development.

Was Designed by Hudson Engineers

They conceived it as they developed the Super-Six. All they learned about endurance, they incorporated in the Essex.

They gave to the Essex the power that has made it famous in all quarters. Its speed is the result of what had been learned in making the Super-Six winner of all worth while speed records.

The Essex can never be all that the Super-Six is for they are totally different types.

But the Essex does bring quality and performance to a class field that was unknown.

The former owners of large costly cars that have adopted the Essex have not been Hudson users. They have come from other cars, cars that fall short of the Super-Six in all particulars save size and cost.

The Essex appeals to such users because of its nimbleness. They like the way its performance compares with that of the Super-Six. You can see this on every hand. The two cars in any community that are most prominent because of their performance ability are the Hudson Super-Six and the Essex.

Essex Did Not Need Hudson's Endorsement

Think of the advantages Essex has had. What ordinarily would have required years to perfect was made possible in the very first model.

That is why 20,000 are now running, why more than $30,000,000.00 was paid for Essex cars in ten months.

You have not needed the Hudson endorsement to understand Essex performance.

Essex has won its own way. Hudson gave it full benefit of the experience of its engineers and the ability of its manufacturing organization. Its name was not needed.

Now Hudson takes the same pride in acknowledging its kinship to Essex that a father might in speaking of his son who on his own account had made good.

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H.R.H. the Rider

ROMANTIC ADVENTURES OF A PRINCE, A MAID, AND A HIGHWAYMAN

By EDGAR RICE BURROUGHS—Author of Tarzan of the Apes and Other Tarzan Tales

(Copyright by Edgar Rice Burroughs)

CHAPTER XV.

Under Arrest

As Hemmington Main entered the dining-room of the hotel at Demia the following morning he opened a morning paper which he had just purchased in the lobby. Vying with one another for importance were two news items upon the first page. One reported the abduction of Princess Mary of Margoth by the notorious Rider, and her subsequent rescue by the royal troops. Main whistled as he read of the capture of the famous bandit and the probable fate which was in store for him.

"Such a prize tempted him from fulfilling his little promise to me," thought Main; "though how in sin the thing got so balled up I can't imagine. His note to Peter certainly resulted in my being led to Gwendolyn. I can't understand it."

Further along in the account of the occurrence was another item which brought a second whistle to the lips of the American. It read:

Princess Mary insists that the Rider did not know her true identity until after the royal troops had rescued her and captured the brigand. He appeared to believe that she was the daughter of Abner J. Bass, the American millionaire, and that the lady-in-waiting who accompanied her was Mrs. Bass. An element of mystery surrounds the entire adventure, and is still further augmented by the connection which is seen between the abduction of Princess Mary and the reported assassination of Prince Boris of Karlova, the details of which appear in another column of this paper, for in the latter tragedy the names of Mrs. Bass and her daughter also appear, as well as that of Hemmington Main, an American newspaperman.

There was an excellent reproduction of Klopkoi's famous portrait of Mary of Margoth, beneath which was a tribute of love and devotion to "Our Little Princess, the last of the Banatoffs."

The account of the reported assassination of the Crown Prince of Karlova was most carefully worded, and showed the hand of the censor in every line. The account closed with these words:

It is not yet definitely known if the prince be really dead, for, following the tragedy, he was spirited away by unknown accomplices of the conspirators. The servants at the royal hunting-lodge deny that Prince Boris was there last night, or that he was shot; but the priest who reported the affair swears that he saw him with his own eyes, and that he saw the shot fired which killed him. The authorities, it is reported, found blood upon a large Persian rug in the breakfast-room, at the very spot where the priest says the prince fell, mortally wounded. The prefect of police at Demia has been asked to detain and question all strangers, especially Americans, now in the capital. Margoth is anxious to demonstrate his friendship and sympathy for Karlova by cooperating with her in every way in the apprehension and arrest of the conspirators.

Mr. Main's whistle became a long and heartfelt thing as he assimilated the full purport of that last paragraph. He was still staring intently at the article when Gwendolyn Bass entered the dining-room, and, seeing him, crossed the room to his table.

"Good morning, Hemmy," she said. "Isn't it good to be safe and sound in Demia after all the horrid adventures of yesterday?"

"Yes," he replied mournfully, "we're so awfully 'safe and sound'—look at this," and he passed the paper over to her, holding a forefinger on the paragraph which had caused his perturbation.

Miss Bass read the article through. Then her eyes wandered to the portrait of the Princess Mary and opened in astonished wonderment.

"'Princess Mary,' she quoted, "and 'the last of the Banatoffs.' Why, Hemmmington Main, this is little Mary Banatoff who roomed with me at college. She called on me here last evening, and I never knew she was a princess."

Main rose excitedly and leaned across the table to look once more at the picture of the princess as though the evidence of his own eyes would substantiate that of his companion's, though he had never seen either Mary Banatoff, or the Princess Mary of Margoth.

"Why, Gwen!" he cried. "Are you sure?"

"As sure as I am that I know your face, Hemmy," she replied.

A shadow fell across the table where the two bent over the likeness of the Margothian princess. Thinking that the waiter had come for their orders, Main looked up, to behold a large, scowling gentleman, gorgeous in gold lace and braid. Behind him stood a file of gendarmes.

"M. Main?" asked the officer.

The American nodded.

"And Mlle. Bass?"

Again Main assented.

"Come with me," said the officer; "you are under arrest."

"Eh?" ejaculated Main.

"It is quite true, monsieur," replied the other, "and it would be well to come without a scene."

The American pleaded with the officer to permit Miss Bass to remain at the hotel, but the man was politely firm, explaining that he but acted upon the orders of a superior.

"But at least you will let her communicate with her mother?" he asked.

"Oh, yes, she will have an opportunity to communicate with her mother," replied the officer, and when the party reached the lobby of the hotel Main discovered the explanation of the man's generosity—Mrs. Bass was there awaiting them. She, too, was under arrest.

It was a melancholy party that drove to the gloomy portals of Demia's jail, likewise a silent party, for their guardians would permit no conversation between the prisoners. Main still clutched the morning paper in his hand, and as he gazed vacantly at it the features of Margoth's girlish princess smiled up at him from the blur of type. An inspiration seized him. The Princess Mary was a friend of Gwen's. If Gwen could only see her and explain, surely everything would be set right, so far as Gwen and her mother were concerned. He, of course, would have to pay the penalty for the shooting of Prince Boris—the pig! He asked permission to say half a dozen words to his fellow prisoner, but the guard silenced him with a curt word and a menacing shake of a baton.

They were slowing up now before the jail, and Main was at his wit's end to find a way to communicate with Gwendolyn Bass. She had risen to leave the car which had transported them from the hotel when Main seized upon the only plan that seemed at all feasible for communicating with her. Taking a pencil from his pocket he wrote across the picture of the princess: "See her," and as Gwendolyn Bass passed him to leave the car he pushed the paper into her hands.

A few minutes later, after having been carefully searched, Main was conducted to a dark cell below the street level. The door clanged behind him, the turnkey shuffled away, and, so far as his eyes could penetrate the unaccustomed darkness, the American was alone.

But he had taken but a single turn of his cell when a pleasant voice broke the silence of the prison—a voice which came from close at hand through the grating which separated Main's cell from that adjoining it upon the left.

"Ah, my good friend, the American joker!" exclaimed the voice. "But the joke seems also to be upon the joker, eh?"

Main stepped to the grating and peered through. His eyes, becoming accustomed to the darkness, presently discovered a familiar figure reclining at ease upon the hard wooden bench.

"Joker!" ejaculated Main. "You, my friend, are the prince of jokers, and this is the result of your pleasantry."

The other was silent for a moment. "What is beyond me," he said presently, "is how in the world you obtained the connivance of the royal chauffeur, and even of the princess herself and her companion. None of them denied that they were the Basses."

"I don't understand you," said Main. "I obtained the connivance of no one. Mrs. Bass and her daughter left Demia, as I told you they would; but instead of being waylaid by you, as we had arranged, they fell in some way into the hands of Prince Boris of Karlova. The note you gave me to Peter the innkeeper resulted in my being taken to the hunting-lodge of the prince, where I found Miss Bass, her mother, and Prince Boris—the latter was about to wed Miss Bass. It was in the altercation over this that he was shot."

The man in the adjoining cell leaped to his feet.

"Shot?" he cried.

Turn to page 15

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How I Make Big Money Out of "Ornery" Horses

By R. W. SINCLAIR

ABOUT two years ago I witnessed up in New York State an exhibition of horse-training that opened my eyes. A man by the name of Mackley took a devil of a mean, vicious mare that hadn't been harnessed for seven months and in a few days had her gentle enough for a school girl to drive. Mackley had taken the mare off the owner's hands for $50 and just ten days after sold her for $175.00. A clear profit of $125.00 in ten days!

That started me investigating. I learned that Mackley had simply used the methods introduced by the famous horse trainer, Jesse Beery. Beery, I learned, used to go about the country giving wonderful exhibitions in colt-breaking and horse-training; but realizing that he could accomplish more by teaching his methods by mail, had given up his exhibition work to spread his horse-training secrets by mail-instruction. Mackley had studied Beery's Course in his spare time and in a few months was able to accomplish magical results with green colts and horses with bad habits.

Other Successes

Mackley's work showed me a way to make some nice money and I determined to take Prof. Beery's Course in horse-training—but before doing so I made further inquiries. Here are what a few of Beery's students said. I'll let them tell of their success in their own words.

Mr. S. L. Arrant writes: "Just to test Beery's methods, I bought the worst balky, kicking, fighting horse I could find. Paid $65.00 for him. After handling him only a few hours according to Beery's system I sold him for $135.00.

Mr. Dell Nicholson, Portland, Mich., writes: I have trained a four year old mare that was given up by everybody. Bought her for $35.00, and now have her so gentle, my little boy handles her. Wouldn't take $200.00 for her.

Dean L. Smith, Findley, Ohio, writes: By following Beery's instructions have changed a worthless, dangerous balker into a horse worth $225.00.

Everett McBlock, Elkhart, Ill., writes: Have just broken a pony to drive and taught it some tricks. Owner bought it for $17.50. Paid me $40 to train it. He just sold it to a show company for $150.00.

How I Work

The big source of my income is in buying up "ornery" colts and horses at bargain prices, and after training the animals, selling them at a good profit. However, I also pick up good money handling colts and training horses for others on a fee basis. For instance, a farmer had a beautiful driving bay that had the bad habit of shying. A piece of paper blowing across the road would set the horse crazy. The owner thought a great deal of the animal, but couldn't take chances on the shying habit. A friend of his for whom I had done some work put this man in touch with me and in a few hours I had the horse completely cured of the habit—for which job I received $50.

Curing Bad Habits

You can see from this that my work consists not only in breaking colts and "gentling" vicious horses, but in curing the various bad habits a horse can have—such as shying, balking, fear of automobiles, etc., pulling at hitching strap, pawing in the stall, etc. etc. Beery's methods of colt breaking are particularly amazing. Under the old way of handling green colts one usually had to half kill the horse as well as himself to accomplish anything—and then the colt was usually spoiled or hurt in some way or other. But, when you apply Beery's principles, there is no hard, long work or injury to the colt.

No one should have a biting, kicking or balky horse when it is so easy to cure these vicious habits. No one should attempt to break in a colt the old fashioned way when Beery's methods make the task so easy. To every horse owner, to every lover of horseflesh, my advice is to get acquainted with the Beery principles. You can not only make money for yourself, but you can do a world of good, particularly at this day when war-demands have placed a premium on horses.

Wonderful Book Free

I have been requested to state that Prof. Jesse Beery will send his remarkable booklet, "How to Break and Train Horses" free to those interested. It is a booklet well worth having as it reveals some startling information on horse-training. I have heard men who considered themselves expert horsemen say that the booklet was a revelation to them. There is no use in my going into details on the booklet when you can get it free for the asking.

Just drop a line to Prof. Jesse Beery, Dept 501 Pleasant Hill, Ohio, and the booklet will be sent free by return mail. A postcard will do as well as a letter.

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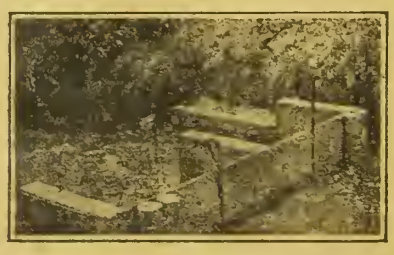

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New Mexico Boy Wins

ROY W. FOARD

Harry Barrier, of Las Cruces, New Mexico, won first place in the junior free-for-all stock judging contest at the International Stock show recently held at Chicago. All boys in the United States and Canada of non-collegiate rank and under 19 years of age were eligible to enter this contest. With almost a hundred boys to compete against, representing all sections of the United States and Canada, this lad from the southwest and one of the lesser agricultural states, walked away with the highest score and first place honors.

The Las Cruces high school sent the team to the International Stock Show at Chicago to represent the state of New Mexico. Each state in the union had the privilege of having one team of three boys present. The team from the Las Cruces high school representing the state of New Mexico was Harry Barrier, Moody Kilgore and Oral Behymer. This team was coached by E. E. Lehman, supervisor of vocational agriculture of the Las Cruces high school.

There were two non-collegiate contests for judging livestock at the International Stock show. One of these was the competition of the teams representing the various states, and the other was the junior free-for-all, which was open to all boys of non-collegiate rank under the age of 19 years.

In the junior free-for-all there were near a hundred boys entered. The animals judged were the baby beef of the

Harry Barrier, Las Cruces, N. M., First Prize-Winner, Junior Stock Judging, at the International

junior feeding contest. The breeds represented were Angus, Hereford, Shorthorn and Red Poll, a total of about twenty animals. From this lot the boys were to select and place the best five in their proper order. It was in this contest that Harry Barrier walked away with highest honors. The fact that his placing was 1, 2, 3, 5, 4, shows how nearly correct he placed them.

The first five boys in this contest were as follows: First, Harry Barrier, Las Cruces, New Mexico; second, Geo. Bruington, Galesburg, Illinois; third, Willard Parvis, Frankfort, Indiana; fourth, Wilford Young, Frankfort, Indiana; fifth, Arthur Bennede, Chillicothe, Missouri.

It is interesting to note that the boys from the west successfully competed with the boys from the rich agricultural sections of the corn gelt. The teams from Colorado and New Mexico as well as from several of the other states, were from vocational schools of agriculture. As the teaching of vocational agriculture increases more interest is going to be manifested in these contests.

Greeley Team at Chicago

In the non-collegiate judging contest for boys and girls under 19 years of age, the Iowa team, coached by Carl N. Kennedy, agricultural agent of Polk county, won over the Texas team by a single point, at the International Livestock show in Chicago. Twelve teams of three each, selected in the various state judging contests, competed and were ranked as follows:

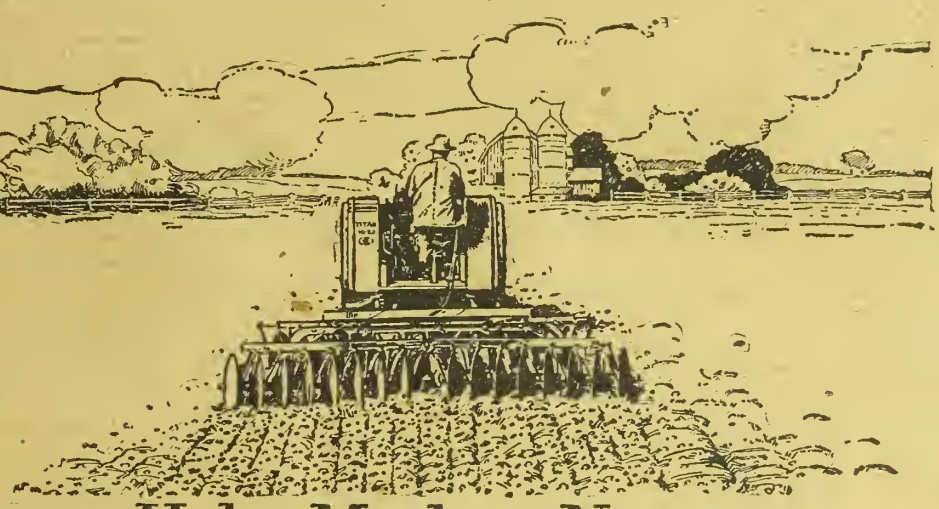
1	Iowa	1090 points
2	Texas	1089 points
3	Wisconsin	1041 points
4	Michigan	1035 points
5	Indiana	1005 points
6	Illinois	988 points
7	Nebraska	979 points
8	No. Carolina	970 points
9	Missouri	936 points
10	So. Dakota	913 points
11	New Mexico	880 points
12	Colorado	817 points

In judging cattle Illinois was first with 379 points, Texas second with 346 points, Iowa third with 342 points, and Wisconsin and South Dakota tied for fourth with 341 points. In judging horses Nebraska was first with 378 points, Illinois second with 374 points, Iowa third with 354 points and Michigan fourth with 351 points. In judging hogs Texas was first with 407 points, Iowa second with 394 points, Michigan third with 360 points and Indiana fourth with 341 points.

Colorado was represented by a team from the agricultural classes of the Greeley high school. Prominent stockmen and business men in Weld county raised a purse of over $600 to finance the trip. The accompanying illustration includes Prof. F. A. Ogle, head of the agricultural work in that school and the members of the team: Manford Grove, Charles Clay, Donald Bliss, William Snider and Stow L. Witwer. Considering the fact that it was the first experience of the young men at the world's biggest show, their record was very creditable. The team was accompanied also by County Agriculturist Mason E. Knapp.

The city is a place where people must dwell—the country a place where people may live.

COLORADO'S NON-COLLEGIATE STOCK-JUDGING TEAM AT THE INTERNATIONAL
Reading from Left to Right—Manford Grove, Charles Clay Prof. F. A. Ogle, Donald Bliss, William Snider, Stow L. Witwer



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Colorado Farmers' Congress

The annual session of the Colorado Farmers' congress was held at Fort Collins during December. The meetings were interesting and helpful. In the issue of January 15 there will be a report on such phases of the gathering as are of general interest to our readers.

✦ ✦ ✦

Breeding and Showing

It is quite a hobby on the part of some wealthy men to show a string of prize winning stock at the big stock shows. This is getting to be more and more of a fad. It is easy enough to purchase an animal that someone else has developed and show it and receive the credit for having the best. This is natural. However, the real skill in livestock breeding lies with the knowledge of proper mating. In other words, it is no credit to a man to own a grand champion bull that he has purchased, if he cannot mate him in such a way as to develop other good animals. It is a discouragement to the smaller breeders when they have to come in competition with men who make it a hobby of buying championship stuff in order to win the ribbons at a show. Good competition is needed and is always welcomed, but let it be on breeders' skill rather than on wealth. A man who buys a good bull and is able to develop something exceptional through his offspring is the one who is entitled to the credit of benefiting the breed.

Would it not be practicable to arrange the classification so that a breeder's stuff would show in its own class and purchased stuff in another class? The aim of our shows is to develop the breed, and any breeder who cannot improve his own herd through proper mating is not entitled to the honors of the show ring on stuff that he has been able to buy for that purpose.

We need to keep this in mind and not allow our splendid stock shows to become society events or millionaire's competitions. Livestock has a practical place to fill in our country and our shows should be as near practical as they can be made. Good animals should be shown, as they help improve the breed, and breeders' skill should be the chief basis for awards.—H. A. L.

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Value of Crops Trebled

The value of crops produced in the United States this year is nearly three times greater than the average annual value during the five years preceding the outbreak of the European war, according to the report of the secretary of Agriculture. "On the basis of prices that have recently prevailed," says the secretary, "the total value of all crops produced in 1919 is $15,873,000,000, compared with $14,222,000,000 for 1918; $13,479,000,000 for 1917; $9,054,000,000 for 1916; $6,112,000,000 for 1914; and $5,829,000,000 for the five-year average, 1910-1914. These values represent gross production and not net returns to the producer. The value of livestock on farms in 1919 was $8,830,000,000, compared with $8,284,000,000 in 1918; $6,736,000,000 in 1917; $6,021,000,000 in 1916; $5,890,000,000 in 1914; and $5,318,000,000 for the five-year average, 1910-1914.

"This increased financial showing, it is again necessary to emphasize, does not mean that the nation is better off to that extent or that its real wealth has advanced in that proportion. Considering merely the domestic relations, the true state is indicated rather in terms of real commodities, comparative statements of which are given in foregoing tables. The increased values, however, do reveal that the monetary returns to the farmers have increased proportionately with those of other groups of producers in the nation, and that their purchasing power has kept pace in the rising scale of prices."

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Cure Your Own Meat

It is hard to understand why the farmer has largely done away with the habit of curing his meat on the farm. Not so many years back, it was not at all uncommon to hear of a farmer putting up from 5 to 12 hogs for his own meat. The many good things that were made from the meats are seldom ever tasted at the present time. It is true that these products are now prepared on a commercial scale by the packing plants, but they do not have the same flavor that the home-made products used to have. It has been noticed that the people generally flock to a farmer who still makes these products and the orders come so fast for home-made sausage, headcheese, lard and so forth that the farmer is unable to supply the demand. The same craving on the part of the people is here and there is no reason why this long lost art should not return. It is probably true that there are some people that are more successful in this work than others. These experts would find it a mighty good business to do the work for others.

There is no reason why the meat used in a community should not be cured in some such way. It would be a means of great saving to the meat consuming public if they would buy the hogs direct from the farmers and take them to the place where they could be made up and cured. This would help make a local market for the hogs grown on the farm as well. To assist in this, community meat shows would be of great help in bringing out the most desirable method of handling meat in home curing.—H. A. L.

✦ ✦ ✦

Winter Farm Schools

In four Iowa counties this winter it is proposed to try out a twelve weeks winter farm school for young farmers who cannot leave home long enough to take a regular college course. The counties selected for this trial are Black Hawk, Buena Vista, Mills and Dubuque.

Each of these schools will be in charge of a specialist, and it is expected that he will not only conduct this special winter school, but will remain in the county throughout the year. These schools will be open to any person over 14 years of age, who is engaged in farming and who is not able to attend the regular day school classes. The instruction will cover farm crops, animal husbandry, farm arithmetic, farm literature, the elements of farm law, farm records, and shop practice, including instruction in gas engines, tractors, etc.

This is an interesting experiment. Naturally the number in each school will be limited, but we strongly advise the young men who are reading Wallaces' Farmer and who are eligible to entrance to these schools, to take advantage of the opportunity. Get into the work with a determination to learn everything possible.—Wallace's Farmer.

Montrose County Farm Bureau

The farmers of Montrose county, Colorado, have a strong farm bureau organization for the coming year. Their program of work includes such progressive ideas as road improvement, pest eradication, marketing, crop and seed improvement and livestock improvement. There is an increasing interest in the farm bureau work demonstrated by the leading farmers of the county who are always active in the affairs connected with agriculture on the Western slope. County Agriculturist Ben H. King is to be congratulated in having the strong support of the farmers in these matters and with the following officers to assist him in the work he is sure to have a successful year in ringing about the provisions of the program: President, R. L. Loesch, Montrose; vice-president, John Lamb, Uncompahgre; secretary-treasurer, B. S. Tobin, Montrose.

Does the Farm Bureau Pay?

Boulder county spent during the year just closed $3,900 in Farm Bureau activities, which includes salary and expenses of the county agent. Of this sum $1,200 was appropriated by the government from what is known as the Smith-Lever fund, $700 came directly from the Farm Bureau treasury in membership fees and the balance out of the county treasury. During the year 71 silos were added to the county's total of 300; 60 bred sows and their litters were handled by pig club members; 384 dairy cows were placed on test to weed out the non-payers; Minnesota No. 13 and other corn was grown to fill the 372 silos; a breeder's association was organized; marketing problems were tackled; farmers were shown how to fill out their income tax reports without the aid of banker or lawyer; farms were supplied with labor through exchanges established at various points in the county; calf clubs, canning clubs, sewing clubs carried on their work; tests were made in wheat, alfalfa and other crops for varieties that will be surer and bigger yielders; thousands of pounds of pedigreed seed corn were produced and placed on the market; a successful county fair was held; crop pests were controlled; many purebred animals were added to the existing herds and new herds of purebred cattle and hogs were established. What the gain to the wealth of the county has been through these direct results from Farm Bureau work would be hard to estimate. A million dollars would not cover it. And all it cost was less than $4,000—and cooperative effort. Has it been worth the price? Ask any Boulder county farmer.—A. T. S.

When the Enumerator Calls

When the census enumerator calls on you this month he is going to ask how many gallons of milk were produced on your farm in 1919. Will you be able to tell him? And when he asks this question, remember that he wants you not merely to tell him how many gallons you sold, or used in making butter and cheese, or consumed in your own household, but to report every gallon produced, including even that fed to animals. Nor will he stop with this question, but will keep right on until he has asked six more as follows:

1. How many gallons of milk did you sell in 1919?
2. How many gallons of cream did you sell in 1919?
3. How many pounds of butterfat did you sell in 1919?
4. How many pounds of butter did you make in 1919?
5. How many pounds of butter did you sell in 1919?
6. How many pounds of cheese did you make in 1919?

Then, as if all these were still not enough, he will ask you how much was received in 1919 from the sale of each one of these products which you sold.

The Census Bureau is willing to admit that, of all the questions which will be asked in the farm census, those relating to dairy products will be among the hardest for you to answer. Yet the bureau is unwilling to omit these questions from the schedule to be used in the coming census, when its figures show that there were produced in 1909 almost six billions gallons of milk—enough to cover a 175-acre farm 10 feet deep—and that nearly $500 000,000 were received by the farmers of the United States from the sale of dairy products.

Now get some paper and a pencil and do a little figuring, so that when the enumerator comes—some time in January, remember— you will have all your figures ready for him.

Grain Sorghums Increasing

Final estimates made by the State Co-operative Crop Reporting Service show that about 53 per cent of the grain sorghums planted in Colorado this year was harvested for grain. Reports of county assessors show a total of 255,605 acres planted to this crop, of which apparently 136,500 acres was harvested for grain, most of the remainder being harvested for forage alone. Reports indicate an average yield of about 14½ bushels per acre, or a total production of 1,973,000 bushels. This is much the largest production of grain sorghum ever reported for the state, despite the fact that the average yield per acre was below normal. No figures are at present available showing the amount of grain sorghum forage produced.

If you like this magazine tell your neighbor about it.

The Branding Iron

Uncle Sam's census enumerator will call on you this month. Tell him all you know. He won't tell anybody else.

✦ ✦ ✦

A Happy and Prosperous New Year to you all. We lived through the last one; got past December 17 alright, didn't we?

✦ ✦ ✦

Pandolfo got ten years from United States Judge Landis at Chicago for swindling the farmers. Looks like we can protect our rights even without blue sky laws. New laws are not so much the need as efficient enforcement of those already on the statute books.

✦ ✦ ✦

A recent decision in the district court of Jefferson county, Colorado, is of interest to tractor owners and makers. A farmer purchased a tractor and the machine did not stand up to the guaranty of the dealer who sold it. It was returned and demand was made that the money paid be refunded. Suit resulted, the jury giving the farmer judgment for the entire amount including costs of suit. The case has been appealed and the final outcome will be awaited with interest.

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Ex-Congressman Keating of Colorado and Washington recently wrote Gifford Pinchot, ex-United States forester, asking him to define just what "the farm people of America want." Pinchot did so, in great detail. What Branding Iron would like to know is who authorized Pinchot to speak for us? Too much of the so-called farm opinion comes from self-appointed leaders who spend their private wealth in agricultural pursuits and who are not farmers, but owners of landed estates managed by hired experts.

✦ ✦ ✦

Vaplon the hen man of this establishment has received an interesting communication regarding his recent article on the use of electric lights in the hen house to lengthen the egg laying day. While this inversion of the daylight saving plan may not be popular with the Layers union it will help reduce the egg shortage. Anything along that line is welcome, so here is the letter Vaplon got from "John Eggtwilliger:"

"I want to put you next to the very latest thing in winter egg production. I have a neighbor who is working his hens by this method, so I know it's all right. After the hatching season he uses his incubators for propagating lightning-bugs; when he gets about a bushel of bugs he puts them into cold storage; when he gets ready for the short days he puts these bugs back into his incubators on about half rations. About sundown he turns about a thousand bugs loose, first closing the doors and windows. The bugs are hungry and begin hunting around; the hens are hungry and chase the bugs; there's a continuous stream of light making it light as noon-day. When the hens get used to the bugs, they don't mind them much and get busy scratching for grain, but they do eat most of them eventually and as the bugs decrease in number, of course the light decreases and the hens go to roost. No expensive light plant to keep up, the hens get the finest kind of animal food at a minimum cost, get the longer day and lots of exercise and a soft, quiet light to go to bed by."

In No Hurry

"All the little boys and girls who wish to go to heaven," said a Sunday school superintendent, "will please rise." Whereupon all, with the exception of Sammy Scruggs, rose. "And doesn't this little boy want to go to heaven?" asked the superintendent, in surprise. "Not yet," said Sammy.

"jan. 20"

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WESTERN FARM LIFE,
Denver, Colo.

Comment by Farmer Putnam

OUR MISSOURI FRIEND MIXES WITH BOTH SIDES AT THE COLORADO FARMER'S CONGRESS

WELL I sure had a swell time at the Farmers' congress in Fort Collins. I went up in disguise; that is, I left my whiskers off so's the folks couldn't pick me out. Some of 'em thought Lord Oglivie was me, others picked W. W. Putnam, the man that guesses on crops fur the government, because his name's the same as mine, and others sez they bet Gene Grubb was Farmer Putnam because of his long white mane. Everything would of gone alright if Clarence Swayze hadn't been thar and give me away. I heard him a whisperin' it to some fellers in the dairy meetin'—"that's Farmer Putnam." The feller sez: "Naw' taint. The real Farmer Putnam ain't no white collar farmer."

Talkin' about white collar farmers, we sure had plenty of 'em to lissen to and sass back. It was a fine program—fur everybody but the speakers! They had to stand fur a lot of heckling. You know they didn't hold no Farmers' congress last winter. It was because two years ago the radical farmers got their officers in control and so last winter they was agoin' to invite A. C. Townsley, the feller that owns North Dakota, to come down to speak to us Colorado farmers. Before they could get it all arranged the flu happened to come along and so it was up to the college to decide which they wanted, Townsley or the flu, and they took the flu. The congress was called off and so this time they made up their minds they'd git some of them North Dakota fellers or bust, so they played fair and sez:

"We'll divide the program between the N. P. L. and Big Biz. We'll git Governor Frazier to talk and Albert Dakin and let the enemy have General Wood fur the Republican party, Hans Mendelson fur the sugar company and Jim Brennan fur the packers."

So that was about the program. I had lots of fun settin' around the hotel lobby watchin' them radicals and non-radicals mixin' and millin' around shakin' hands with each other, pattin' each other on the back and sayin' nice things to each other about crops and the end of the world, etc. Well, on Wednesday, the 17th, when the end of the world failed to show up by 2 p. m. and General Wood arrived instead, a non-radical from Greeley sez to one of them Weld county leaguers: "Looky here, Bill. What I said last night about buryin' the hatchet don't go onless old Mother Earth kicks the bucket today."

That was about the way it looked to me. In public they was friendly and behind their backs they cussed each other. Delph Carpenter talked about "Bridgin' the Gulf." It cain't be done just yet—we ain't suffered enough from our fool fightin'. You know the gulf between a real dyed-in-the-wool conservative and an out-and-out radical is about as wide as the gulf between heaven and hell, one of them two parties bein' on one shore of the gulf and the other on the other. Now whichever way you want to place 'em is your own business. You kin say the other feller is in hell; I'm in heaven. It don't matter what you are to him, or where he thinks you are; it all depends on how YOU feel and what you think about it yourself.

Of course, I know where I stand and I reckon I got a right to judge the other feller's status by what he sez is his own condition. If a man thinks everybody's ag'in him, graft offen him, imposes on him and kicks him when he's down, why he'll show his thoughts in the way he shakes your hand. When he's sayin' with a sickly smile: "Fine weather we're havin'," his thought is running like this: "Now I wonder what that highbinder is doin' up here at a farmers' meetin'?"

In other words, a man's contact with his fellow man is just about what he makes it. Just like Delph Carpenter sez: the gulf looks like it was full of deep green water, but it's only a few inches deep and we don't find out how shaller and narrer it is till we try to cross it. The trouble is, we don't try.

Lissenin' to conversation on both sides in the Northern hotel lobby I heard another way of settlin' the differences between them two classes, the radicals and non-radicals, and that is by elimination. It was the pious wish of one side fur the other (and vicy versy), that each of the others would go and hang hisself. But no harm can come outen them bad wishes and the mixin' of oil and water. I think it done good; because they ain't a man of us, no matter what he is, rich or poor, farmer or city man, preacher or politician, but what he's selfish or bitter, or stingy, or crafty, or got a screw loose somewhere in his moral make up. If his case ain t hopeless—and no man is total depraved—rubbin' elbows with men of opposite views is goin' to broaden him, if from nuthin' else then raisin' his own self-respect. It allus makes a feller feel like patin' hisself on the back when he has shook hands with a feller he don't like. We sez to ourself: "I'm big hearted after all and I showed that feller that I was a broad gaged man." In other words, we like ourselves better when we hates our enemies less.

So I say, that thar Farmers' congress was a good thing. Governor Frazier didn't go back to North Dakota with any new converts; General Wood didn't convince any Democrats that they should ought to vote the Republican ticket; the dairymen didn't agree to cat oleo to please Swift & Company; the beet growers didn't take up any collection to help the sugar company to pay dividends, but we all agreed that we was more or less human beings, that our bark is worse than our bite, and that we got to live together in this world till judgment day, so we might as well make the best of it. Of course, I believe in bridgin' the gulf between town and farm, and between radical and conservative, and between the corporations and the consumers, but adoptin' resolutions never will change human natur, so let's leave the bridge up so's we kin git back and forth in time of trouble.

Thos Jefferson Putnam.

Thanks, Brother

Western Farm Life,
Denver, Colo.

Gentlemen:

Enclosed please find check. Western Farm Life is the only magazine that comes to our shack that I can swear by and not make a mistake. Any dry farmer that will follow methods in general recommended in it can't go wrong, and what's good for dry farmers is better for wet ones. I've been in Colorado thirty years and am familiar through press with all you gentlemen and will back you against any heavyweights in or out of commission. If everything was as good fit as Western Farm Life with me my regrets would be few. I know nearly all magazines give premiums but none should in view of bridges ahead, and if the practice was outlawed every tub would have to stand on its own bottom and some good print paper would be released for worth while things. I'm going to get off right here. You've all got your bets down on a good thing. Western Farm Life is a sure winner.—P. B. Stevenson, Jackrabbit, Colo.

Feminine Bargaining

A woman wearing an anxious expression called at an insurance office one morning. "I understand," she said, "that for five dollars I can insure my house for a thousand dollars in your company." "Yes," replied the agent, "that is right. If your house burns down we pay you one thousand dollars." "And," continued the woman anxiously, "do you make any inquiries as to the origin of the fire?" "Certainly," was the prompt reply; "we make the most careful inquiries, madam." "Oh!"—and she turned to leave the office—"I thought there was a catch in it somewhere."

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Question of Water Rights

Your information on the following would be considered authority. Opinion of attorneys consulted seems indefinite. A claims prior water rights on a stream rising in New Mexico, based on the fact that a Mexican ditch was taken out thirty years ago to irrigate a small patch of ground. No decree or court record was made. A purchases this farm, moves diversion dam higher up the stream to enable larger tract of land to be irrigated and thus diverts all water from the stream, without notice to others using water below and owning first water rights in Colorado. A contends this ditch taken out in New Mexico prior to other ditches on the stream in New Mexico or Colorado, even without court record or decree, gives him prior rights over all others to divert all the water he wants for use in New Mexico, only. Have water users, owning prior water rights of record in Colorado, any recourse against such diversion of water in New Mexico? If so, how shall we proceed to obtain the same?—T. McH., Las Animas county, Colo.

You have presented here a very vexed and large question, which has not been conclusively determined by any court as yet. I am, therefore, only giving you my opinion and a suggestion or two. The constitution of New Mexico apparently does not vest such water rights as the one A has, assuming that he had it before the adoption of the constitution. Apparently then A has the better right to the water. The rights of A could be determined, in my judgment, in one of two ways: a suit in the federal court, provided there is diversity of citizenship and value enough, a suit in the courts of New Mexico against A. I regret that the question has never been determined completely so that I could answer you more definitely.—Hamlet J. Barry, 724 Equitable bldg., Denver.

Property Rights of Wife

In case a man and wife, having been married five years with children to support, desire to sell the husband's ranch, is it necessary to have the wife's signature on the bill of sale? Can she prevent him from selling the ranch if it is her desire to live on it? The husband paid a small sum on this ranch before his marriage so the ranch is in his name only. Since she has worked five years on it, helping him to get out of debt, is there any way she can become part owner of the ranch except by buying it? Her only object is to prevent him from selling the ranch, so she may have a home for the children.—B. F., Gunnison county, Colo.

If the wife wishes to prevent the sale of the ranch she may go to the clerk and recorder's office at Gunnison and enter the place as a homestead upon the margin of the record on the conveyance to her husband. When that is done no conveyance can be made without the signature of the wife as well as the husband. Your correspondent improperly suggests a bill of sale when she means deed. There is no community property in Colorado. She could possibly bring an action to have her husband declared a trustee for say one-half of the property, which she might claim as her own.—Hamlet J. Barry, 724 Equitable Bldg., Denver.

Hawthorn for Fence Posts

Can you give me information in your paper regarding length of time hawthorn will last for posts? We have a great deal of rough fencing to do and we want a post that is not too expensive. We have access to plenty of this kind of material for posts.—E. L. M., Idaho.

Hawthorn will hardly make a satisfactory post. It is not considered of any more value than apple wood; in fact, the hawthorn belongs to the same family as the apple. While apple wood is very hard it lasts only a short time in the ground and your hawthorn posts probably would not stand up more than three or four years.—H. N. Wheeler, Supervisor, Colorado National Forest.

The Elm Leaf Aphis

As a subscriber to Western Farm Life, I write you concerning a disease working on our elm trees. Early in the spring there was a small green aphis on the leaves, which caused the leaves to roll. Later in the season the ends of the branches die and leaves turn yellow (after aphis is gone, they do not seem to do much harm). I think the trees are suffering from blight. I don't think there are borers. Trees look like they are suffering for water. The whole tree seems to suffer. Is there an elm tree blight and is there any remedy?—Mrs. J. B. H., Otero county.

The green louse you mention that rolls the leaves is probably the common elm-leaf aphis Pemphigus americana. This insect is very abundant in most parts of Colorado, and especially so in this section. I do not know any very practical remedy. Possibly the best is a thorough spraying of the trees just as the buds are beginning to open. At this time nearly all of the lice have hatched from the eggs that remained on the bark of the trunk over winter and are located on the buds waiting for them to open. The best spray would be a tobacco preparation such as Black Leaf 40, one part to 1,000 parts of water, or kerosene emulsion, or whale oil solution. If the last spray is used, dissolve one pound of the soap in six gallons of water and thoroughly spray over the trees. I do not know of an elm disease known as a blight.—C. P. Gillette, State Entomologist.

Stock Raising Homestead

Answering A. B. T., Moffat county, Colo., as to whether patent can be obtained on stockraising homestead claim of 640 acres that has a perpetual stream of running water on it:

We are unable to give you a direct answer to this question, as no one can say what the land office would do in regard to granting patent. We can only refer you to the circular of instructions setting forth the kind of lands designated under the 640 acre act. Paragraph 2 of this circular reads as follows:

"The lands to be designated are those the surface of which is, in the opinion of the secretary of the interior, chiefly valuable for grazing and raising forage crops, which do not contain merchantable timber, are not susceptible to irrigation from any known source of water supply, and are of such character that 640 acres are reasonably required to support a family. The classification will be made, so far as practicable, so as to exclude lands that are not chiefly valuable for grazing and raising forage crops, either because too valuable for such use or too poor for such use. Lands which are capable of producing valuable crops of grain or other food cereal or fruit are not subject to designation, being, if otherwise subject to entry, disposable under the 160 acre or 320 acre homestead law, according to their character. Lands of such arid or poor character that they are worthless or fit only for occasional grazing in connection with large areas of other land are not subject to designation and entry under this act. No tract may be designated which contains a water hole or other body of water, needed or used by the public, for watering purposes, and such tract, and other tracts, required for access of the public thereto, may be reserved by the president and kept open to the public use under rules prescribed by the secretary of the interior."

The circular further sets forth that location of any surface streams or springs rising or flowing across claims must be accurately set forth in petition for designation. It is altogether a matter for decision of the land office as to whether a patent may be granted under any special circumstances.

Bulletins on Bee-Keeping

Answer to J. H. S., El Paso county, Colo., regarding honey production:

Write to the Department of Agriculture for the following bulletins: Commercial Home Honey Production No. 961; Home Honey No. 503; Bees No. 447; Transferring Bees to Modern Hives No. 691; Home Honey No. 503, Bees No. 447; Bee Keeping No. 59. "A Thousand Answers to Bee Keeping Questions," by Dr. C. C. Miller is a book of 276 pages and sells for $1.25. This book may be had through the American Bee Journal, Hamilton, Ill.

VETERINARY ADVICE

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Practice of Veterinary Science

Answer to R. G. C., Prowers county, Colo.

The state veterinary practice act provides that in order to practice veterinary medicine one must be a graduate of a recognized veterinary college, pass the state board examination, receive a certificate and have the same recorded in the county or counties where he is located for practice. A man may, of course, practice on his own animals and otherwise exception is made in case of castration, dehorning and vaccination. At the time

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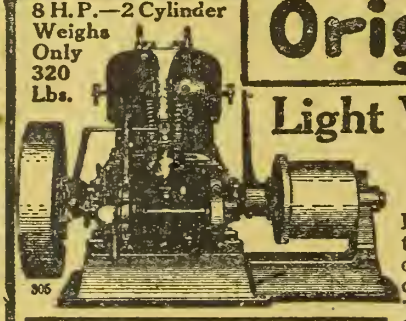

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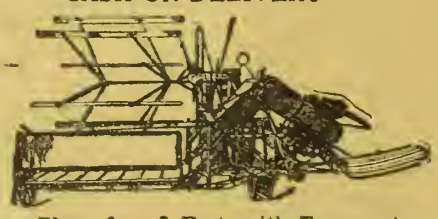

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the law became effective the only vaccination in vogue was vaccination for blackleg and it was apparently never intended that laymen should undertake the use of anti-hog cholera serum, hemorrhagic bacterins, anti-strangles vaccine, and other dangerous biologics. One who cannot meet the educational qualifications of the law cannot secure a certificate to practice and any work done in the treatment of animals will be done empirically. For two years non-graduates were allowed to take an easy examination, and if they passed, were given certificates to practice as non-graduates, but the law was repealed and opportunities in this line are presumably gone forever. There are nineteen recognized veterinary colleges in America. The standards in veterinary education have been raised from year to year and beginning next fall all matriculants in veterinary colleges must have had a high school education, or its equivalent, which will amount to 14 credits.—G. H. G.

The Tuberculin Test

Answering F. W. M., Larimer county, Colo., in regard to administering tuberculin test to cows according to government requirements:

There are three tests for tuberculosis, in which tuberculin is used as the diagnostic agent, viz.: subcutaneous, opthalmic and intradermal. The subcutaneous test is looked upon by many as being the most reliable. In giving this test the temperature is taken at least three times during the day, the tuberculin injected during the evening and, beginning ten hous later, the temperature is taken every two hours during the following day. Diagnosis depends upon the local lesions, the maximum temperature on the second day over that of the first, and the temperature curve. Most any one can take temperatures and inject the tuberculin, but experience and exact knowledge is necessary to correctly interpret the test. Laymen are seldom satisfied with the test after they have made it and such tests are not accepted by state and federal officials. The government tuberculin is carefully guarded and is distributed only through certain state officials, into the hands of licensed veterinarians. The biologic houses are presumed to be equally cautious. The state of Colorado is spending much money in training men for the practice of veterinary medicine. These men, after spending from four to eight years in high school and college, are presumed to have acquired a considerable proficiency and are entitled to some protection. In medicine, as in most other things, Utopia cannot be reached by one jump. If a man wants to experiment on his own livestock I presume there will be no objection, but, of course, there is always the question as to whether it is worth while.—G. H. G.

This May Be Glanders

I have a neighbor who has a mule with breakings out on both legs on one side and also on side of jaw. They seem to itch. What is the matter and what should he do for it?—J. M. G., Kiowa county, Colo.

The symptoms given strongly indicate glanders, which is a deadly disease and for which there is no treatment. The disease is dangerous for man as well as for mules or horses. Cases of suspected glanders should be immediately reported to the state veterinarian, Dr. Charles G. Lamb, Denver, Colo.

Possibly it is only a skin affection, which might be caused by parasites, ringworm, malnutrition, etc. Its wide dissemination over the body indicates animal parasites, ringworm or czema, but the "breaking out on both legs" more strongly indicates ringworm or glanders. Make careful examination for parasites, not finding them treat locally with tincture of iodine. In the absence of reasonably prompt recovery, report the case to the state veterinarian.—G. H. G.

Peculiar Hog Disease

Answer to A. W., Alamosa county, Colorado, regarding peculiar hog illness.

The condition described is very unusual. A condition similating this is seen in swine erysipelas, but not known in an acute form in this country. It could scarcely be caused by ergot or other food poisoning. Inflammation of the skin is seen sometimes as a complication in hog cholera, but the symptoms given otherwise preclude the possibility of hog cholera or diseases commonly associated with it. It may be from freezing the ears and skin along the back. Since there are several affected, and for this reason the possibility of it being infectious, the office of state veterinarian, State Capitol, Denver, should be notified at once. Connected with the bureau of animal industry office, federal building, Denver, is a field specialist on hog cholera. This man is sent into the state to help in the investigation and control of hog cholera and his work is not necessarily confined to this one disease. Lastly, in an emergency like this, it is quite likely that the Monte Vista Hog Growers association, would be glad to send one of their veterinarians to assist you, or the veterinarian at La Jara might be called.—G. H. G.

Ready for the Ice Harvest

Each year dairymen lose thousands of dollars from returned sour milk, poor butter and low-quality cheese. These losses are largely due to improper cooling of milk and cream on the farm, according to dairy specialists of the U. S. Department of Agriculture. For good results milk and cream should be cooled to 50 degrees or lower and held there; and as this usually can best be done by the use of ice, dairymen should take advantage of any nearby lake or stream to obtain a supply of ice. The ice-harvesting season fortunately comes at a time when there is the least work on the farm for men and teams, and consequently the actual money cost is usually not very great.

The quantity of ice needed depends upon the location of the farm—whether in the north or in the south, the number of cows milked, and the method of handling the product. In the northern states it has been found that, with a moderately good ice house, one-half of a ton of ice per cow is sufficient to cool cream and hold it at a low temperature for delivery two or three times a week. One and one-half or two tons per cow should be provided where milk is to be cooled.

A cubic foot of ice weighs about 57 pounds, so in storing ice it is customary to allow from 40 to 50 cubic feet per ton for the mass of ice. At least 12 inches must be left between the ice and the wall of the building for insulation, unless the ice house has permanently insulated walls, and an unusually large space for insulation beneath and above the ice. From these figures it is possible to calculate readily the quantity of ice that any given ice house will hold.

Where a lake, pond, or stream of clear water is not available, some preliminary work in preparing the ice field will be required before freezing weather sets in. It is therefore advisable to make all plans for the work as soon as possible. Water for the ice supply should be entirely free from contamination or pollution. Ponds and sluggish streams usually have grass and weeds growing in them, so that the ice harvested is likely to contain decayed vegetable matter, which is always objectionable. They should therefore be thoroughly cleared of such growths before the ice has formed.

In some sections it is necessary to impound the water for producing ice. This may be done either by excavating and diverting a stream into the excavation, or by constructing dams across low areas. In localities where very low temperatures prevail for several weeks at a time, and the supply of pure water is limited, blocks of ice may be frozen in metal cans or in special fibre containers.

In harvesting ice it is desirable to have a field of sufficient size to fill the ice house at a single cutting, as the thickness and quality of the ice will be more nearly uniform, and the necessary preparation for cutting and harvesting need be made but once. In many instances, however, the size of the pond or stream is such that it is necessary to wait for a second crop in order to fill the ice house. The average farmer requires only a comparatively small quantity of ice, so that even a small harvesting surface will usually prove large enough, especially if ice is cut the second time. The square feet of surface required per ton when the ice is of different thicknesses is shown in the following table. Size of cake, 22 by 22 inches.

Square Feet of Ice Surface Required Per Ton of Ice

Thickness of ice. Inches	Number of cakes required per ton.	Cutting space required per ton. Square feet
4	31.3	105.4
6	20.9	70.2
8	15.6	52.6
10	12.5	42.1
12	10.4	35.1
14	8.9	30.1
16	7.8	26.3
18	6.9	23.4
20	6.3	21.1
22	5.7	19.1

When a small quantity of ice is to be harvested, but few tools are required. The following list contains those actually needed for harvesting ice on a small scale: Two ice saws, one hand marker, one pulley and rope, two pairs of ice tongs, two ice hooks, one pointed bar and one straight edge.

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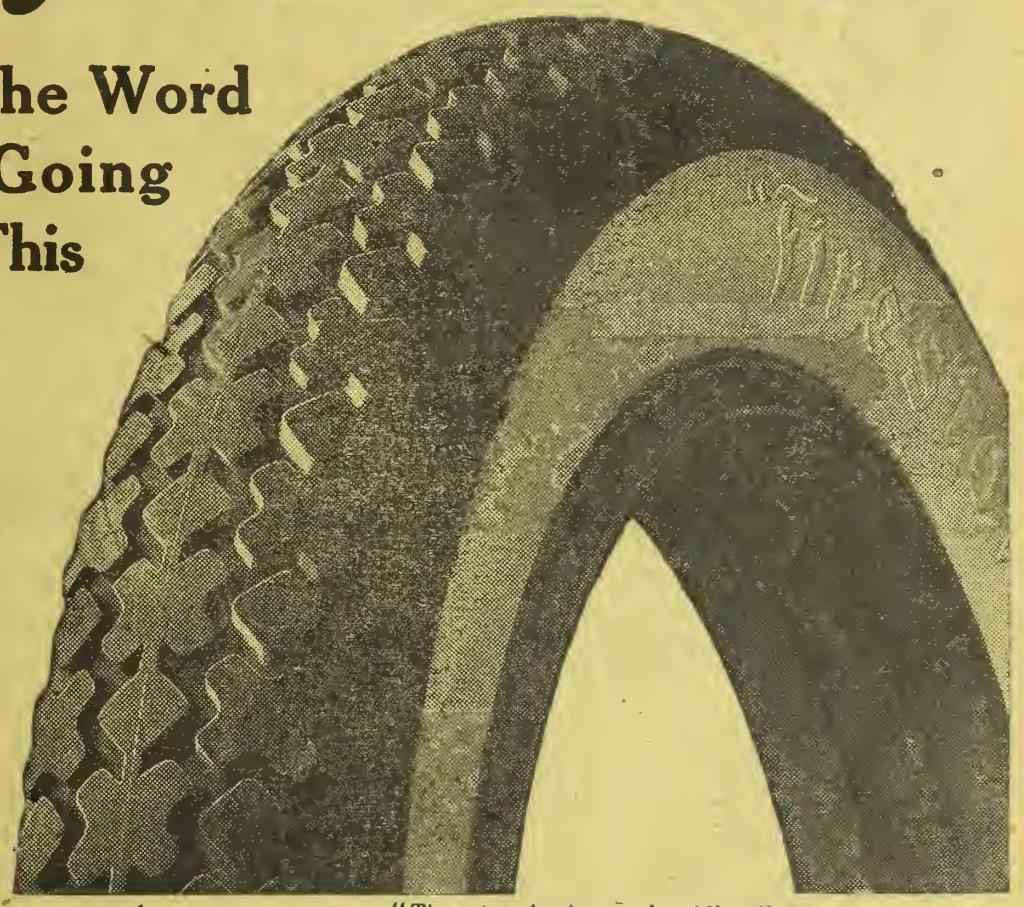
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A SPECIAL breeding and feeding school will be held at the Colorado Agricultural College, Fort Collins, January 6, 7, 8 and 9. The course is adapted to the farmers who are especially interested in the production of horses, but there is so much in the course of value to breeders generally, that an invitation is extended to everybody to attend. A perusal of the description of the special courses herein given will show them to be of value also, to the breeders of swine, sheep and cattle.

The people who attend this school are requested to come prepared to ask questions and to visit the different departments of the college, and to familiarize themselves with the livestock and especially with the feeding tests that will then be in operation. The college is well equipped with the modern types of livestock and with competent, capable men and these will be at the disposal of all who attend the course.

Breeding

This course will deal with the principles of breeding as affecting the farmer. The origin of breeds. Mendel's Law, reversion, pure breeding, cross breeding, inbreeding, line breeding, selection and mating of animals will be fully discussed. Emphasis will be laid on the things that are demanding most public attention and are of most vital importance to the farmer.

Horse market requirements have changed so extensively during the last five years that every horse breeder in the state should hear these lectures. This course will be given by G. E. Morton, professor of animal husbandry.

Feeding

This subject will be handled in a very practical manner. The selection of foods, and the requirements of the body under different conditions, as work, reproduction, and growth, will be fully explained. How to feed work horses and raise colts for greatest efficiency and most profit will receive full consideration. This is a very important subject and farmers should plan by all means to attend this course. This work will be given by C. I. Bray, associate professor animal husbandry.

Judging

This course will consist of a study of the score card and of judging horses in the college pavilion. The best types procurable will be used and comparisons made between them, so that the farmer or stockman who pursues this course will receive a thorough training, thus enabling him to secure the best types for breeding purposes and to make the most of them in his breeding operations. This will be given by R. W. Clark, extension animal husbandry specialist.

Physiology of Reproduction

This subject is a study mainly of the reproductive cells, and of cell manufacture, union and reproduction. It deals with growth and nutrition from the time of conception to birth and is the foundation of successful breeding operations. It is through the study of the cell that reproduction and the improvement of livestock can be understood and fully appreciated. This course will be given by Dr. R. F. Bourne, professor of physiology.

Anatomy of the Generative Organs

This is a study of the location, form and structure of the different parts of male and female generative organs. It is necessary for the horseman and breeder to familiarize himself with this subject, in order to detect or avert conditions that may produce low fertility or non-breeders. This course will be given by Dr. A. W. Whitehouse, professor of veterinary anatomy.

Artificial Insemination

This is a practical course in the use of the impregnator, and it is of inestimable value to the horse breeder. Every step in the course will be fully explained and instructions given how to secure best results. Every stallion owner in Colorado should take this course. It will be given by Dr. H. E. Kingman, professor of veterinary surgery.

Diseases of the Generative Organs

This course is of special value to horsemen, farmers and breeders generally, because a certain percentage of our best mares and other animals are barren. Knowledge of this subject will often enable the breeder to prevent or diagnose diseases, and other conditions that prevent conception. This course will be given by Dr. I. E. Newsom, professor of pathology.

Sorgo for the Pit Silo

Farming in Fall River county during the next five years is to undergo a great change through the growing of thousands of acres of Lakota amber sorgo and the storing of this crop in hundreds of pit silos. This system will insure a greater and steadier income to all who follow it.

This plan of producing an adequate supply of a proper livestock feed is being demonstrated by the Ardmore Field station and practical farmers as the one best adapted to the conditions in this county. Sorgo or "cane" produced over two tons per acre more than corn this year when tested at the Ardmore Field station. The same results have been secured by individual farms. This proves cane to be a sure crop and one that produces a large tonnage.

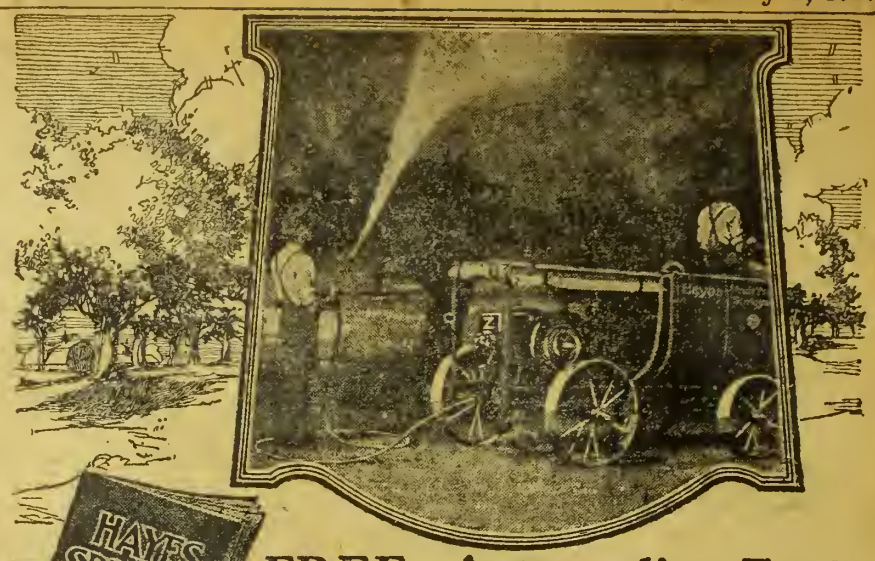
The production of livestock is acknowledged as the foundation of farming operations in this county. Upon this basis the securing of a plentiful supply of the proper feeds for livestock is a farming operation of first importance. This feed must not only be of the proper kind and of a plentiful supply but it must be on hand to be fed at all times, especially when pastures are short and feeding is necessary. Here is where the pit silo proves itself to be of such value for it offers the best possible place to store the cane crop for feeding at all times and also makes it one of the best feeds that can be fed to livestock.

To have plenty of cane silage means that cattle can be carried over and even fattened during a year of short crops, for this silage will keep for several years and if put in during a year when the crop is abundant it can be fed out when crops are shorter. This is being done this year at the Ardmore Field station with cane silage that was put in the silo in 1918. This silage comes out in excellent condition and is proving as good a feed as corn silage.

This sorgo has proven to be a crop that is hardy and gives large yields and that makes an excellent feed when put into the pit silo, while the pit silo has proven to be a practical and efficient storehouse for livestock feed; with a small construction cost and offering the opportunity of a place where valuable feed can be kept from years of plenty to years of want.—Farm Bureau News.

Minerals for Hogs

Every farmer should provide a supply of mineral matter for his hogs. This is very often neglected and the results are apparent in the herd. The amount need not be great, neither should it cost the farmer a great deal to mix it up. It is surprising how this simple remedy will work on the hogs and assist in keeping them healthy. It has been proven that where the hogs are provided with it, the cost of gains is reduced. The Connecticut Agricultural college recommend the following: Three bushels of charcoal, two quarts air slacked lime, and one bushel wood ashes. This mixture should be kept before the hogs at all times.—H. A. L.



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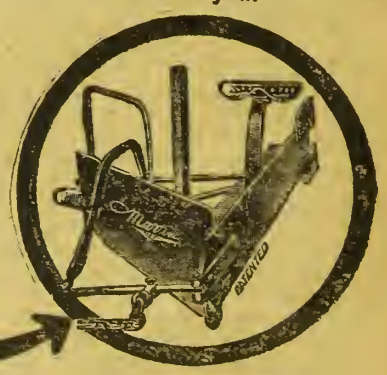

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"H. R. H., The Rider"

Continued from page 8

"Yes, I shot him in self-defense—that is why I am here. Miss Bass and her mother are prisoners, too. Haven't you seen the papers? Didn't you know that they report the assassination of the Crown Prince of Karlova and the secret removal of his body from the lodge?"

"Well!" ejaculated M. Kargovitch, "you certainly have got into a devil of a muss—and you really didn't have anything to do with my getting hold of Princess Mary instead of Miss Bass?"

"Upon my word of honor," replied Hemmington Main.

"Then we are the victims of the strangest combination of circumstances it has been my ill-fortune to experience," said M. Kargovitch; "and I give you my word of honor, monsieur, that I honestly thought I was waylaying your American friends and helping you in your little affair of the heart. The note I gave you should have resulted in your being brought to where I awaited you. Why, I even went so far as to demand from the lady-in-waiting who accompanied her highness that she give her consent to the marriage of Mary of Margoth to Mr. Hemmington Main of New York," and M. Kargovitch leaned back against the steel bars of his cell and laughed heartily.

"You take things rather easily for a man who will probably make the acquaintance of a gibbet in a few days," said Main, laughingly. "Do you know, my friend, that you are a mighty good sport? I only wish that I might lend assistance to you in some way."

"You would laugh, too, Main, if you knew as much about certain matters as do I," replied Kargovitch. "You think that I will be hanged as a brigand; but I won't. You also think that you will be hanged for assassinating a prince of the blood-royal, but you won't."

"Well," said Main, "I hope you know what you are talking about."

CHAPTER XVI.
"To Be Shot at Sunrise".

A door opened at the far end of the corridor as he spoke, and with the clanking of sabers a party of officers and soldiers approached the cells in which the two men were confined. They halted before that occupied by M. Kargovitch. An officer drew a formidable-appearing document from the breast of his tunic, and as he unfolded it a soldier bearing a lighted lantern held it so that the rays of light fell upon the paper.

As he read in sonorous tones the solemn and formal words of a long preamble which recited the career of crime of one individual known only as the Rider, the smile broadened upon the face of M. Kargovitch; but at the last paragraph it died, the man's head went up haughtily, and though he paled his shoulders remained squared; nor did he give any outward sign of what might be passing in his breast.

For the paper concluded: "And so, through the clemency of His Gracious Majesty Alexis III, King of Margoth, it is decreed that said the Rider shall not expiate his sins upon the scaffold as custom and the laws decree, but shall, instead, be granted the more honorable death before a firing squad of the king's soldiers at dawn upon the morrow."

And, having completed the reading, the officers and soldiers turned and tramped away down the corridor, their footsteps resounding dismally through the gloomy prison vault.

It was several minutes after they had departed before either of the prisoners spoke. The Karlovian stood as they had left him, his shoulders squared, his chin up, staring straight before him. Hemmington Main was dumbfounded. The other's assurance had been so great just prior to the coming of the soldiers that even now the American could scarce believe that he really had heard read the death warrant of his fellow prisoner. He raised his eyes to the man's face to note the effect of the announcement upon him. M. Kargovitch seemed to feel the American's gaze, for he turned slowly toward Main, and as he did so a smile spread across his face.

"If I recall correctly," he said, "your last remark, before they came, was to the effect that you hoped I knew what I was talking about. You see now, don't you, that I did know. I told you that I should not be hanged. Well, I shall not be hanged—they are going to shoot me."

"I wonder," mused Hemmington Main, "if your gift of prophecy will prove as painfully inspired in my case as it has in yours?"

M. Kargovitch laughed. "I have it in my power, my friend, to save us both," he said, "but at a cost against which the lives of two men are as nothing, for should I speak now it would throw Margoth and Karlova into bloody war. Alexis of Margoth could scarce overlook the double affront and injury which I have put upon his daughter, and could he, the people of Margoth could not. They worship her; nor, since I have seen her, do I wonder.

"If, through the American minister, you can obtain a sufficient stay the truth must eventually come out, and with the truth known you will be freed from the accusation of having attempted the life of Prince Boris of Karlova."

"If the truth is bound to be known," suggested Main, "why the devil don't you divulge it now, and at least save your own life?"

M. Kargovitch shrugged. "There are several things worse than death, at least to a man in my position. One of them is ridicule. I have made a fool of myself, and I should be laughted at—deservedly. I could not endure it. There is another reason. Within the past two days I have been a party to a hideous hoax, the entire brunt of which fell upon a defenseless girl. I would almost as lief die as look her in the face again, for, inexplicable irony of fate, I have found that I love her."

Hemmington Main, his head tilted to one side, looked quizzically through narrowed lids at his fellow prisoner.

"I can't fathom you, Kargovitch," he said. "You are certainly the most remarkable brigand the world has ever produced."

"Yes," replied Kargovitch, "I am a remarkable brigand. As a matter of fact, Main, I rather suspect that the Lord never intended me for a brigand at all."

In a little back room in the attic of Peter's Inn a man tossed feverishly upon a pile of grimy quilts and blankets. Above him bent a bewhiskered little man whom two others in the room addressed as "doctor."

"He will live," announced the man of medicine, "if he has proper nursing."

"Bakla will look after him well," said Peter. "Eh, Bakla?"

"Yes," replied the girl, "I will take care of him."

Peter and the doctor left the room, stumping down the rickety ladder which led to the floor below, and the girl took her place upon an upturned keg near the sick man's head, that she might change the cold cloths upon his burning forehead.

An hour passed. The man's mutterings and tossing ceased. He opened his eyes, in which now shown the light of rationality.

"Bakla!" he exclaimed. "What has happaned? What am I doing here?" And then, before she could reply: "Ah, yes; I remember. The American. He shot me. Have you heard anything? Have the papers come yet from Sozgrad? I should like to hear what they have to say, and also what Prince Boris says. I should like to learn how he has explained the thing. I am glad, Bakla, that I am a brigand and not a prince. Go down and fetch the papers, Bakla, will you?"

The girl renewed the cloth upon the Rider's head and descended the ladder to the second floor, from which she ran down to the barroom. The Sovgard papers, still unopened, lay upon a table near the door. She gathered them all up and returned to her patient. They laughed together over the guarded announcement of the reported assassination of the crown prince, and of the strange disappearance of his body. Then Bakla read of the capture of the Rider by the soldiers of Margoth and the probable fate which awaited him in Demia.

The Rider whistled and looked solemn. "That will never do," he said; "he is a real man, even if he is a prince—far too good a man to make the acquaintance of a rope's end."

"You think they would hang him?" almost screamed Bakla.

"They might," replied the Rider. "They would not believe him should he say he was Prince Boris of Karlova. No, they would only laugh at him, for did they not see me in Demia only yesterday, and vouched for as the Crown Prince of Karlova?"

"But his friends—they know the truth?" persisted Bakla.

"I wonder if they do," mused the Rider. "The whole thing has been so terribly tangled and confused that it is possible they might really believe that it is the true Rider who lies in prison at Demia, and that Prince Boris, who was to have met me at his hunting-lodge today, arrived there ahead of time and was actually the man who was shot by the American. They would be none too loath to have me out of the way, for if their connection with this affair becomes known they will probably suffer degradation and imprisonment. Oh, the devil take that American! He has put me in a fix which won't let me do a thing."

Bakla sat silent for a long while. Her eyes were wide and fear-filled. Presently the Rider slept. His regular breathing denoted the deep and healing slumber which is nature's greatest remedy. The girl rose and tiptoed to the head of the ladder. Quietly she descended. Tillie was busy with the housework on the second floor.

"Listen for the Rider," said Bakla to her. "If he calls, go to him. I am going to Sovgard. I will be back as quickly as possible."

Tillie would have interposed objections, but the girl was gone before she could frame or voice them. A few minutes later, astride a tall, lanky roan who knew the highways of the border better by night than by day, she was riding at a rapid gallop toward Sovgard.

In time to the drumming hoof-beats of the great horse Bakla droned, over and over: "They're goin' to hang Dimmie! They're goin' to hang Dimmie! They're goin' to hang Dimmie!" and the horror in her eyes increased to the inborn suggestion of the hideous thought.

CHAPTER XVII.
The Night Before

Prince Boris of Karlova spent a long and weary day in the prison at Demia. Early in the afternoon an officer had come and taken the American away without explanation. Boris wondered if they were going to shoot him, too, or if he had been extradited to Karlova, which was the more probable.

As a matter of fact, Hemmington Main had been conducted to the palace, led to the second floor, and ushered, without a word of explanation, into the presence of three women. Two he recognized at once—Mrs. Bass and Gwendolyn, and a moment later he was presented to the third, and found himself bowing very low over the hand of Princess Mary of Margoth.

"It was the suggestion you wrote across her highness's picture this morning which resulted in our being freed in less than half an hour," explained Gwendolyn Bass. "But for the longest time nothing could be done for you. His majesty could not be prevailed upon to release you, even though we all offered to vouch for your presence whenever you were wanted. He was awfully nice and kind about it all, but you see you are a very important prisoner, and he could take no chance of offending Karlova by seeming to look lightly upon your offense."

"Well, how did you accomplish it then?" asked Main. "I don't seem to be very rigidly imprisoned now."

"We don't know what happened to change my father's mind," said the princess. "All we know is that a few minutes since M. Klein came to announce that you were to be liberated, and I asked that you be brought directly here."

"Well," said Hemmington Main, "it beats me. I wish some good angel might

Turn to page 18

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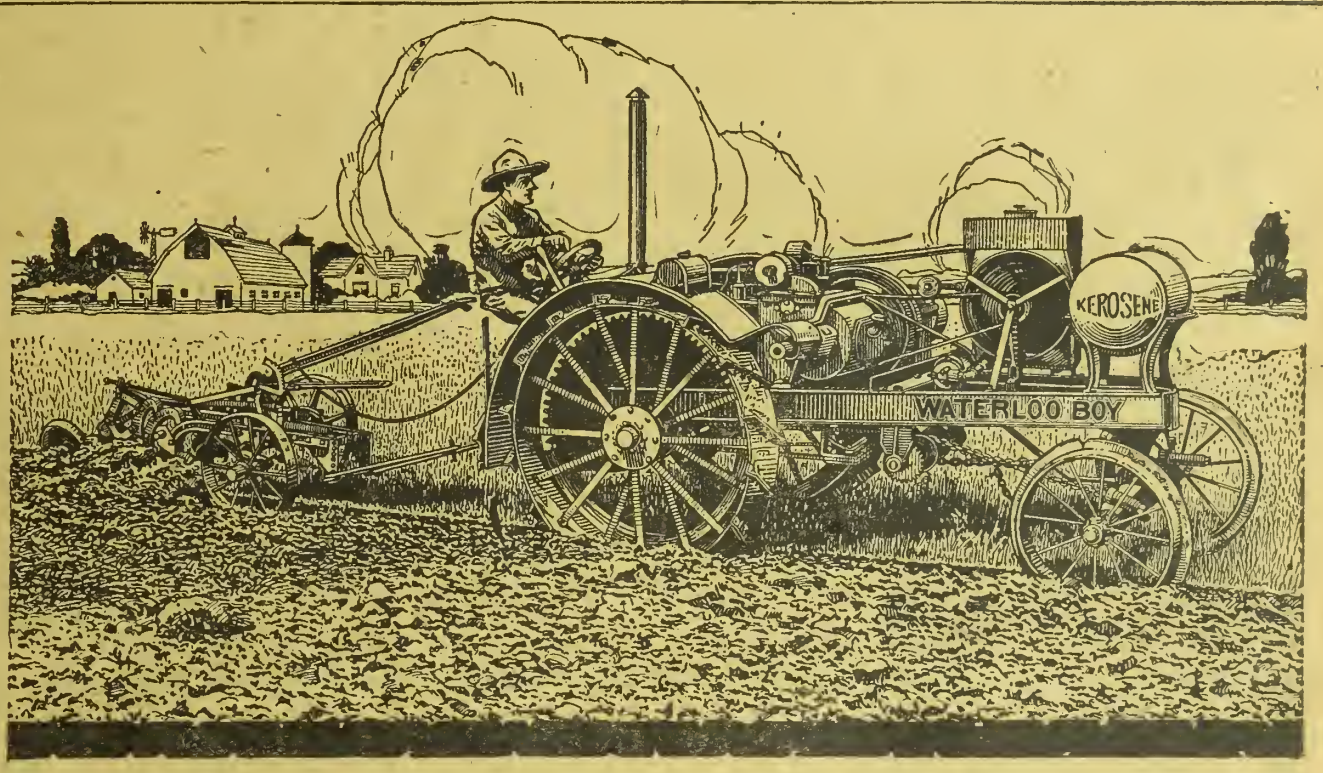

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Raising the Dairy Calf

ARTICLE I

No other work that falls to the lot of the busy dairyman is so important as that of raising the dairy calf. This work tests the skill of the best of dairymen and is often neglected, much to the loss of the business. The future development of every dairy depends largely on the calf. For that reason it is to the best interest of the industry that the calf be given every possible chance to make good as a producer later on in life. The calf, like the infant, should be given the best of care. By this I mean that the feed and surroundings should be sanitary. There should be regularity in the matter of feeding and the kinds of feed used.

The place to start in raising a calf properly is with the cow. No poorly nourished cow can be expected to produce a strong, vigorous calf. A weakly calf is more difficult to raise than one that has the proper strength. The cow should be given a rest of six weeks to two months before calving. During this time she should be given such feeds as will put her in good condition physically. She does not need to be excessively fat, but should carry some surplus flesh. A little silage or roots are of value at this time. Unless the cow is very thin, grain is not required until within a few days of the time of calving. A small feed of bran or oats each day for a week is good at that time.

When the time draws near to calving, the cow needs to be watched closely and where convenient, she should be placed in a box stall for calving. Of course this is not always handy on most of the farms, but at any rate she should be provided with a clean, dry place. The filth of a dirty barnyard often carries infection which causes white scours and should be avoided. When these things are watched there should be very little trouble from weakly calves.

After the calf is dropped, it should be left with the cow for a few hours at least. There are differences of opinion as to how long a time this should be. Good calves are raised from each practice so that one's own good judgment should guide him in this. There is this to consider however: the sooner the calf is taken from the cow the easier it is to teach it to drink from a bucket. On the other hand, the first milk drawn from the cow is necessary to start the calf out properly and should not be overlooked. A sleeker coat of hair is always found if the calf is dried by the cow herself. It is the usual custom to leave the calf with the cow at least 24 hours.

A new born calf, after being taken from the cow should be fed three times a day for the first week or ten days. The best of care should be given during this time. The bucket used for feeding should be as clean as the dishes on the table. In other words, after each feeding, the bucket should be washed carefully and thoroughly scalded with hot water or steam. Much of the calf trouble comes from dirty utensils used in feeding. The bucket should be kept in a place where there is no danger of contamination from any filthy sources. A drying rack inclosed in screen, on the sunny side of the milk house or other building, is a very convenient arrangement for all of the dairy utensils.

The milk fed to the calf should have the chill taken off before feeding. The proper temperature is about 90 degrees. It should always be at the same temperature for the first few weeks of the calf's life. The ideal temperature is as it comes from the cow. The milk should not be allowed to stand too long after milking, as it soon cools. These things may seem trivial, but experience teaches that these little details are most important in the proper handling of the calf. It should be remembered, above all things, in feeding the young calf, that under-feeding is much less harmful than overfeeding. The proper amount of milk to give, of course, varies with the size of the calf. The writer has had the best results with 4 lbs. to the feed, or rather 8 lbs. a day, until the calf is a month old. This was for the smaller breeds. The larger calves can easily stand 12 lbs. per day. Free access to good, pure water is a valuable consideration. The water should be in a sanitary container and should not be allowed to stand until it becomes stale.

When the calf is a few days old it will begin to nibble at the hay. This should be given as soon as there is an appetite for it. As with the other feeds the supply should be fresh and clean. Any uneaten portion should be taken away at the end of the day and a fresh supply placed in its stead. Other feeds are often given such as silage and roots. Care should be exercised in this so as not to over feed. These feeds are valuable for the calf when properly given. The calf soon learns to eat grain. This is important. As soon as this time comes a box should be placed in the pen for this purpose.

The amount of grain to feed should be what the calf will clean up nicely in a few minutes. There is a difference of opinion as to the grain to feed and the condition in which it is fed. Whole oats is used by many dairymen with very good results. Others feel that they obtain better results by grinding the oats. There are various grain mixtures that are satisfactory. In selecting the grain, one that is especially useful in producing growth should be decided upon. A mixture of ground corn, oil meal and bran can be used with good results, using 4 parts corn, 1 part wheat bran and 1 part oil meal. The grain available on the farm should be given first consideration, providing it is the required kind.

In the next article I will take up the questions of a grain and hay ration and also discuss calf scours and dehorning. —H. A. L.

Adopt Dairy Cow Plan

The business men of Raton, N. M., have adopted the plan originated in Las Animas county, Colorado, for the importation and leasing of dairy cattle to the farmers. They put their idle money into the scheme of betterlng the county by bettering the condition of the farmer. This is a big idea and the man who is in position to see the light will realize that the prosperity of the nation must depend on the prosperity of the farmer. It has been extremely difficult to obtain money in many localities to finance a dairy importation. Under this plan the cows are brought in and are let out to the farmer for a term of years. At the end of the lease the business man has his money back with interest and the farmer has a herd started without any large outlay of money. Both are benefited. The plan is worthy of consideration in any community.

Make Sure of Your

DE LAVAL

Cream Separator

Early in 1920

There's no happier or better way of starting the New Year right than by making sure of a new DE LAVAL, if you are either without a cream separator or are using an inferior or half-worn-out machine that should be replaced.

For three years now, thousands of those who wanted a DE LAVAL have had to wait weeks for it and many have had to buy a second grade separator. The demand has simply exceeded the possible supply, though more DE LAVALS have been made each year than ever before.

More and better DE LAVALS will be made this year than ever before—as many as available plant additions and skilled workmen can produce—but the demand gives every indication of being even greater still.

Order your DE LAVAL now. Make sure of getting it. Let it save half its cost by Spring.

See the nearest De Laval local agent at once, or write the nearest De Laval office below for any information desired.

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Sturges Milk Cans

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Makers of Sturges Guaranteed Capacity Milk Cans

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$38 buys the New Butterfly Jr. No. 2½. Light running, easy cleaning, close skimming, durable.

NEW BUTTERFLY

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Separators are guaranteed a life-time against defects in material and workmanship. Made also in four larger sizes all sold on

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and on a plan whereby they earn their own cost and more by what they save. Postal brings Free Catalog Folder. Buy from the manufacturer and save money. [9]

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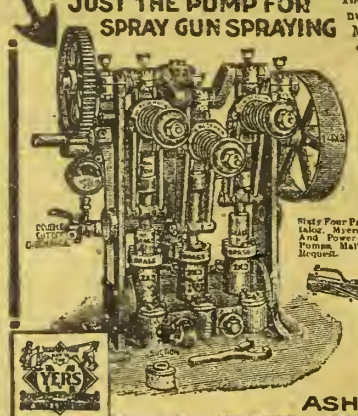

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4-Cycle Frost Proof Engine—pulls over 3 H-P. Hopper cooled. Oscillating Magneto; no batteries ever needed. Easy to start in any weather. Automatic Governor regulates speed. Uses fuel only as needed. Cheap to operate. Saw blade easily removed. When not sawing, engine runs pumps, feed mills and other machinery. Pulley furnished.

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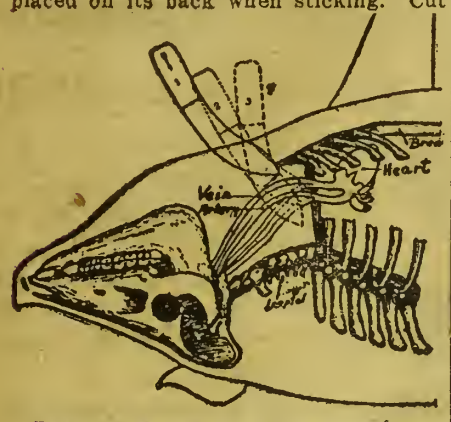
See the OTTAWA at work on your farm once and you will never give it up. Thousands in use, every owner a booster. Out-saws any other on the market. Does sawing no other saw will. Send today.

FREE Write at once for Special Offer and Low Factory Direct Price. Get our offer.

OTTAWA MFG. CO., 2515 Wood Street, Ottawa, Kans.

Sticking the Hog

One of the steps in butchering hogs that causes a great deal of trouble to the beginner is that of sticking. It is not a difficult operation if one stops to think what they are trying to do. The position of the large veins and arteries and where they divide to go to the shoulder and to each side of the neck is the point to locate before the knife is used. The hog, of course, should be placed on its back when sticking. Cut



Position of the Knife in Sticking.
Start knife in position 1. Move to position 2, then to position 3, and withdraw without further cutting.

Courtesy, the Dakota Farmer

a slit about 2 inches long through the skin directly in front of the breast bone. This slit should be directly in the middle line of the hog. With the sharp edge of the knife toward the head of the hog, push the knife in to the hilt, inclined slightly forward. With the knife in this position make a slight cut with the point of the knife toward the front. Withdraw it without further cutting. If this is properly done the veins and large artery will be severed and the hog will bleed freely. Keep a steady nerve and act quickly and carefully.—H. A. L.

Cow Testers' Reports

Arkansas Valley, Lamar. Robt. Boerner, Tester. "During the month 319 cows were tested, averaging 515 lbs. of milk containing 18.3 lbs. of fat. Seventeen cows produced over 40 lbs. of fat. A grade Holstein, owned by Framan Bros., Wiley, produced 1,380 lbs. of milk containing 55.2 lbs. of fat, and is the highest butterfat producer for the month. The Green Mountain Dairy, of Lamar, has the highest butterfat producing herd. The 11 grade Holsteins averaged 1,043.1 lbs. of milk containing 30.8 lbs. of fat. Five cows have been sold for beef the past month. Farmers are commencing to feed beet pulp and tops liberally."

Boulder County, Niwot. Lloyd Simpson, Tester. "Two hundred and sixty-nine cows were tested during the month, their average production being 575 lbs. of milk containing 24.4 of fat. Twenty-three cows produced 40 lbs. or more of fat. The highest butterfat producer is a Guernsey owned by Howard Bros., Hygiene. She produced 1,324 lbs. of milk containing 82.1 lbs. of fat. Howard Bros. are also owners of the high herd. Their 16 Guernseys averaged 803 lbs. of milk containing 38.2 lbs. of fat."

Use of Good Boars

The success of hog raising lies largely in the selection of the right kind of boars. No one can overlook this most important point and expect to produce pork economically. Too often it is found that the boar in use on the general farm is small in bone development, does not carry the proper depth of body and is not well hammed. The sows may carry the same type. Such mating will not bring the right kind of results. The fault found in the sow can be corrected in the pigs if the boar is of the right type. The demand at the present time is for a larger type hog than formerly, because it has been found that the gains can be produced with less expense than on a short early maturing hog. Many farmers have fine boned sows that lack stretch. Unless they are careful in the selection of the boar for mating with them, they will not improve the pigs. Select an animal that has plenty of bone, a strong well arched back, a good spring of rib and a deep body. With this should be smoothness, as indicated by a well balanced form, neatly joined neck and shoulders and a well balanced head. Do not be afraid to pay the price and get a boar of this kind in preference to a weakly conformed hog that can be had for a great deal less money.

One can easily pay the difference in price from the first litter of pigs sired by a good boar as compared with the poorer kind. It will be found that much of the success in raising feeder hogs rests with the proper kind of boar. The size of the litter from which the boar is selected is also a very important consideration. Do not select one from a small litter unless you are sure of the cause for it.

Breeders should, in all fairness to the industry, be careful in the type of boar they offer for sale. Nothing tends toward failure more than a boar of poor conformation. Such animals should be castrated as soon as it is shown what they will develop into.—H. A. L.

Grades Sold High

A report from the Gibson-McNeil sale of grade Holsteins has been received from Roy M. Curtis, tester for the Johnstown Testing Association. The sale was held at the McNeil place on the Denver-Greeley road, 1½ miles south of Twin Bridges. There were 25 high grade cows sold. Each of the cows had good records. Three of the cows brought an average of $311, fourteen averaged $235 and the herd average was $190 per head. This is an indication of the feeling, in the Johnstown district, toward dairying. The prices paid may seem high to the casual observer. However these cows had records to back them up. There is nothing that tends to add profit to dairying more than the testing association.

Pig Club Contest

There will be two phases of Pig Club work at the National Western Stock Show in Denver, namely the regular competition and scoring of the animals, according to the usual rules, and a contest in exhibiting. The purpose of the latter is to give the young people an opportunity to demonstrate their skill as showmen. In the regular competition there will be a fine list of premiums which will include two silver loving cups donated by Western Farm Life for sweepstakes boar and sow. The full list is not available for publication..

The contest in exhibiting will be held Thursday, January 22, at 1:30 p. m. All boys and girls who expect to participate in the exhibition are urged to be present to list their names and receive instructions from J. T. Tingie, state swine specialist, at 10 a. m. on January 22nd on the show grounds. Thirty showing hurdles have been made by the manual training shops at the Agricultural College in Fort Collins for free distribution among contestants in this class. All boys and girls in Colorado, under the age of 18 years, may enter their pure-bred pigs, whether members of pig clubs or not, providing they can meet all other entry requirements. Pigs shown shall be of any age, sex or breed.

Parties interested should make application for entry through their county agent, county club leader or by direct application to Mr. Tingie, care of the Agricultural College.

Following are the prizes being offered in this contest:

Following are the prizes being offered in this contest: Silver cloving cup, by Mr. Caldwell Martin, Denver; one silver medal, "Swine World," Chicago, Ill.; two bronze medals, "Swine World," Chicago, Ill.; prize by Mr. N. W. McIntyre, Denver, Colo.; prize, by Mr. Cooper, Denver, Colo.

The individuality and type of pig shall not be considered by judges in selecting winners but, instead, the way the contestant has prepared his or her pig and the skill with which the pig is shown. The consideration, outlined below will be recognized by the judges in making an award.

The contest will comprise two phases:

1. Examination of each individual pig for thoroughness of fitting, to consume whatever time is necessary for a careful inspection.

2. Competition in actual showing, to continue from ten to thirty minutes, according to the number of entries.

The judge will consider the following points:

A. Preparation of pig for showing.
   1. Condition of feet and trimming of toes.
   2. Trimming of ears, tail, etc.
   3. Washing and cleanliness.
      (a) Ears, head, belly, flanks.
      (b) Freedom from scurf.
      (c) Condition of coat, including gloss, absence of excess of oiling, use of objectionable materials.

B. Showing the pig.
   1. Control of animal by exhibitor.
   2. Poise and coolness of exhibitor.
   3. Skill in showing, including
      (a) Continuous attention.
      (b) Keeping the pig placed to advantage.
      (c) Being on the job.
   4. Ability to stand, move or drive the pig as requested by the judge.

Blackleg Aggressin (Kansas Germ Free Fluid Vaccine)
One Dose Immunizes for Life — It Saves the Calf
THE U.S. BLACKLEG SERUM CO.
INCORPORATED
OKLAHOMA CITY, OKLA.
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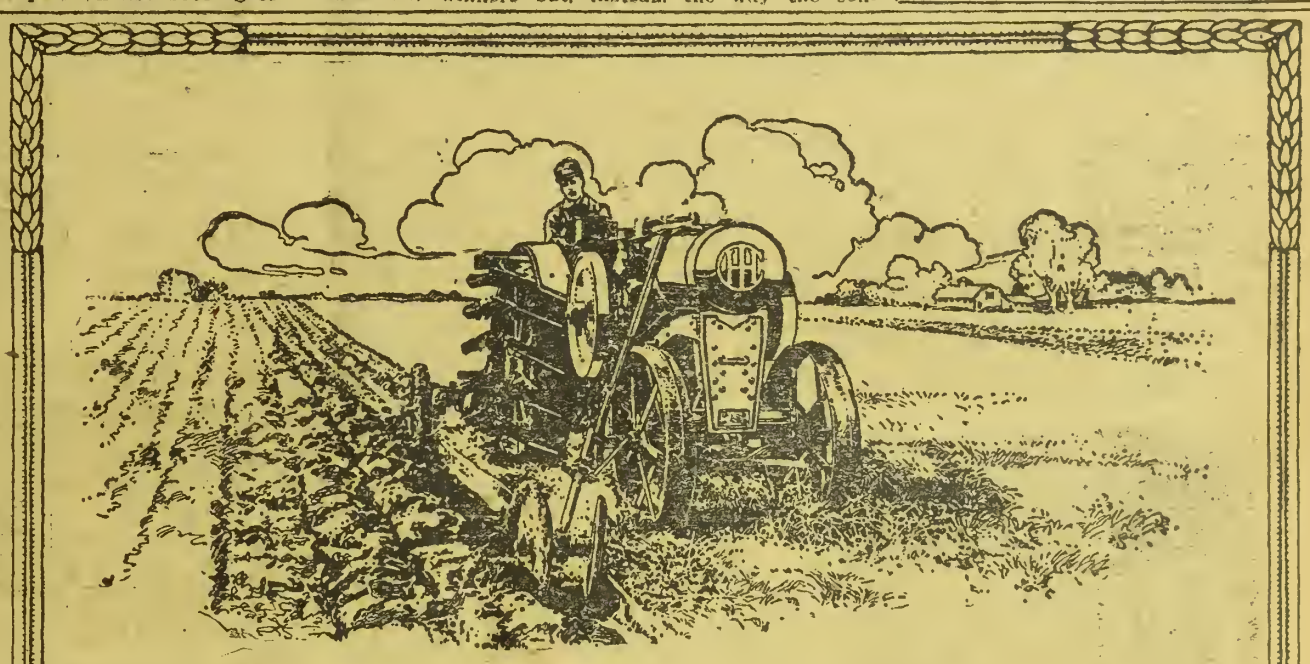
Write us about it. Dr. F. S. Schoenleber, Pres.
25c Per Dose——WHY PAY MORE?



The Sensible Leader of the 1920 Tractor Field

NOWADAYS the chug-chug of the farm tractor is heard in every corner of the land. Tractors are at work in the fields of many thousands of farms and if you look them over you will find them a mixed lot.

Tractor farming is still in its youth. Novelty is still in the surge toward power farming.

The impractical theorists are still in the ring, limping but not out of the running. Adventurers who swarmed into what they termed the "game" are still "playing." The hazards facing the farmer in search of reliable power are many.

In all this turmoil, one tractor like a steady star has lighted the way. That tractor bears the trusted name—**Titan 10-20.** It has led because it is the product of practical builders of good farm machines; because it is backed by many years of experience and unquestioned reputation.

Today **Titan 10-20** is the standard-setter among all tractors. During the past year it has been the topic of conversation on the tongues of farmers and tractor makers the nation over.

Selling at the popular low price—**$1000 cash f. o. b. factory—Titan 10-20** faced a sensational demand. A few months ago this desire for Titan ownership had flooded the factory with thousands of orders which could not be filled at once, though a new Titan was being turned out every few minutes.

Every effort is being directed to greater production and to continued Titan 10-20 pre-eminence during 1920. In view of manufacturing difficulties however, this is earnest advice to the intending purchaser:

Orders for Titan 10-20—and also for International 15-30 and International 8-16—must be placed far in advance. No other course will assure delivery.

International Harvester Company of America
(Incorporated)
Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

"H. R. H., THE RIDER"

(Continued from page 15)

intercede for my fellow prisoner. He seems an awfully good sort—not at all tho kind one would take for a brigand, and he's so brave in the face of the fact that he is to die at dawn.

"Die at dawn?" cried Princess Mary of Margoth. "Die at dawn? What do you mean?"

"I heard them read his sentence just a short time before I was liberated. He is to be shot in the morning, poor fellow. And do you know," continued the American, "there's a mighty pathetic side to it. It seems that he has it within his power to save himself; but pride and honor are keeping his lips sealed. There's something about a girl he has fallen in love with— I couldn't make out just what it was all about—but he's offended her in some way and would rather die than let her know the truth. Foolish, of course, but none the less courageous and chivalrous. I tell you, that fellow, highwayway or no highwayman, is a real man —every inch of him."

Princess Mary of Margoth was standing with her back to a window, so it is probable that none of her guests noticed that her face went from white to red and back to white again several times during Hemmington Main's recital, or saw the moisture which gathered in her eyes, fight as she would to keep it back. A moment later she—withdrew from the apartment, after summoning a lady-in-waiting and arranging for the comfort and entertainment of her American friends.

The king was seated in his cabinet when, as was her custom, the Princess Mary entered unannounced. Prince Stroebel was there, too, and Baron Kantchi, the Karlovian minister, with a very tall young man in the uniform of the Black Guard of Karlova.

They all rose as she entered the room; but she passed among them straight to the king, as though she did not see them. Her eyes were very wide, and in them was a look of pain and terror that Alexis III had never seen there during all the short life of his little daughter.

"Mary!" he said. "What has happened?"

"I have just heard," she said in a dull voice, "that you are going to have him shot tomorrow morning. It is a wicked thing, and must not be done!"

"You mean," exclaimed the king, "that you have come here to intercede for the life of the notorious Rider—confessed cutthroat and ruffian?"

"He is a brave man!" cried the princess. "He fought for me and saved me, possibly from worse than death. He deserves better at your hands."

"He is a criminal of the lowest type," expostulated Alexis III. "He is a menace to society. The world will be better for his death."

"I do not believe that he is bad at heart," insisted the girl.

"My daughter," said the king, kindly but firmly, "the Rider should be hanged; but in the indictment and sentence which was recently read to the prisoner we explained that his honorable treatment of our daughter had won him our clemency —therefore he will be shot rather than hanged. No one could ask for more for the Rider—even for you I can grant him no more."

"Oh, dad!" cried the girl, and there was a choking sob in her voice. "Please! Please!"

But the king only took her by the hand and led her from the room, shaking his head sadly.

Prince Boris paced back and forth in the narrow limits of his cell. He had discovered that by standing with his back against the bars at one side three equal paces should bring his boot in contact with the bars upon the opposite side. After a little practice he was able to measure his strides so accurately that with his eyes closed he could take the three steps, and on the third have the toe of his boot just touching the bars. It was not an exciting form of diversion, but it was better than nothing, and fully as profitable as counting the upright bars which formed three sides of his cell. He was engaged in this thrilling pastime when the door at the end of the corridor open once again.

Prince Boris halted and strained his eyes through the darkness. He welcomed the break in the monotony of his solitary confinement, and wondered who the visitor might be and what was his errand. There was but a single individual, whose light footfalls caused scarcely a reverberation in the dismal corridor. As the newcomer approached, Boris saw a small figure wrapped in a long, dark cloak.

"An assassin with a dagger," mused Prince Boris with a grin. "I would welcome him none the less, though. The devil would be better company than none."

Now the little figure stopped before his cell, threw back the hood which had covered its head and face. At sight of the latter Prince Boris of Karlova gave a gasp of astonishment and delight.

"Your highness!" he cried.

CHAPTER XVIII.

The Firing Squad

The girl looked up into his face, so far above hers. She was very white, and Boris could see that it was with difficulty that she composed herself. "What in the world brings you to this place?" he asked.

"Mr. Main has told me that you might free yourself if you would," she replied, "and I have come to beg you to speak—to tell them the thing that will liberate you, no matter how it may affect any other. I have done my best to save you; but I can do nothing—nothing. My father, the king, is determined that you shall die. Tell me, oh, tell me what it is that you know which would gain your freedom for you!"

"I cannot understand," he said, "what has brought your highness here other than a sense of honorable gratitude to one who deserves nothing but your scorn and contempt. I do not wish to die, but I could face death, your highness, rather than tell you the thing you ask to know. I have been a fool, but I am not entirely without a sense of honor."

His hands gripped the iron bars which separated them. His face was pressed close in an interstice between two cold, steel rods. The Princess Mary stepped impulsively closer. She laid her two warm little hands upon his, sending a thrill tingling through every fiber of his being; but when she tried to say the thing that trembled upon her lips, she hesitated, stammered and dropped her eyes to the rough flagging of the floor.

"What is it?" he whispered. "What do you wish to say to the Rider?"

"Oh, it is so hard!" she cried. "Hard, because I am what I am. Were I just a girl I might find the courage to say what I want to say; but I am a princess, muzzled, fettered and constrained by ages of hereditary pride, by silly etiquette, and senseless customs."

Gently he laid one of his hands upon hers.

"Do not say it, then," he said. "I would not for the world have you suffer even the slightest embarrassment on my account. Remember, your highness, who and what I am."

"I will say it!" she cried. "Last night, just before the guard came, when you thought that death was very near, you told me that you loved me." She stumbled pitifully over the last three words. "If you spoke the truth then, you will speak the truth now and say the words that will free you, because—because—oh, God, have mercy on my soul!—I—love—you!"

Prince Boris of Karlova trembled as the leaves of the aspen tremble to a breeze. Even though the whispered words were plain enough he could not believe that he had heard aright, yet there could be no mistake. Slowly he extended his arms through the grating of his cell and took the little figure of the Princess Mary in them; but as he bent his lips toward hers, the girl placed a palm across them and pushed him away.

"Not that!" she gasped. "I have sunk pride and endured shame to tell you the thing I have told you; but I am still a princess—my lips are not for you even though I love you. For your sake alone have I acknowledged my love in the hope that because of it you would speak the truth that will save your life, and mitigate the misery of mine. Promise me that if I send an officer you will tell him what you will not tell me."

Prince Boris's arms dropped to his sides. He turned back into his cell.

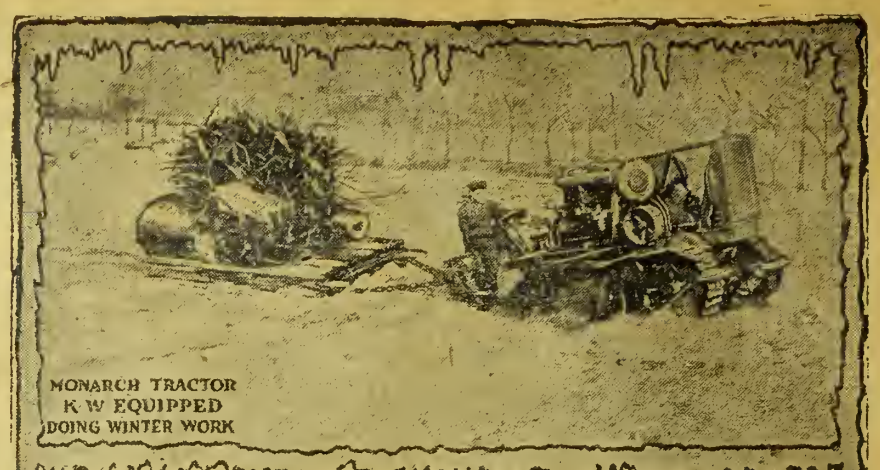
"I cannot," he said, "for when you know, Mary of Margoth, you will hate me—I prefer death to that!"

"You will not tell then?" she asked.

He shook his head. Without another word the girl turned and walked slowly up the corridor. The man saw the door open, saw her pass through, and saw it close behind her. Then he threw himself upon the hard bench at the back of his cell and buried his face in his hands. For the first time in his life Prince Boris of Karlova knew utter misery.

All night he sat there, and there they found him when they came just before dawn to lead him to the courtyard of the prison where the blank wall is.

At their summons he rose and shook himself, and when he stepped into the corridor between the files of soldiery his shoulders were as stiff and his chin as high as when he rode at the head of the Black through the boulevards of Sovgrad. With a firm step, and a half smile upon his lips, he marched out into the chill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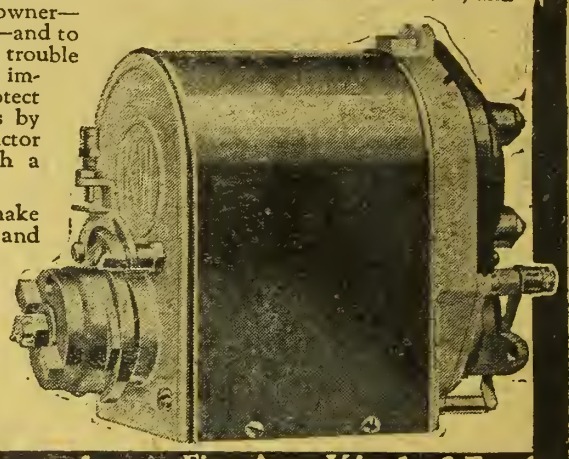

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EASY PAYMENTS if desired, at a small advance over our Special Factory-to-Rider cash prices. Do not buy until you get our *great new trial offer* and low prices and terms.

TIRES LAMPS, HORNS, pedals, single wheels and repair parts for all makes of bicycles at half usual prices.

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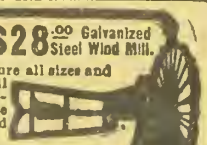
We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.



CURRIE WIND MILL CO.,
610 E. Seventh Street, Topeka, Kansas.

of the early morning. An arc lamp sputtered above the courtyard close to the blank wall. He saw it and the squad of soldiers drawn up opposite, and he knew that the light was there for the purpose of revealing their target to the men.

He spoke but once as they placed him in position with his back against the wall, and that was to ask that they leave his hands free and his eyes unbandaged. Then the soldiers who had brought him from his cell stepped aside; an officer asked him if he had anything to say before his sentence was carried out. Prince Boris shook his head.

Very clearly he heard the short, sharp commands of the lieutenant in command of the firing squad: "Ready! Aim!" Prince Boris licked his dry lips and stared very hard at the young lieutenant.

Why did the man hesitate so long before giving the final command? The prisoner saw the officer cast an uneasy glance in the direction of the door which led from the interior of the prison into the courtyard, then he saw the door open and an officer in full uniform hurry toward them. His hand was upraised, and as he came he cried: "Stop! In the name of the king, stop!"

The newcomer exchanged a few words with the lieutenant, then he approached the prisoner.

"You will accompany me," he said, "His majesty, the king, has sent for you."

Under guard Boris was conducted to the palace, up a broad staircase and along a marble corridor, at the end of which were two massive doors. At these doors his guard halted, and the officer who had brought him from the courtyard and the stone wall advanced and struck upon the panels with his gloved knuckles. Instantly the doors swung inward, revealing to Prince Boris as astonishing a sight as he had ever witnessed.

A dozen officers, resplendent in showy uniforms, were grouped on either side of a table at which sat two elderly men. There was Prince Stroebel and two other functionaries of Margoth, the prime minister of Karlova, Baron Kantchi, Boris's three cronies, Alexander Ivan and Nicholas; the American, Hemmington Main; General Demetrius Gregovitch, Karlovian minister of war, and a very much frightened little girl, whom Boris's astounded eyes recognized as Bakla, the barmaid of Peter's Inn. But the one which caused the prisoner the greatest surprise by his presence there was he who sat at the table beside Alexis III of Margoth. Like a man in a trance the Crown Prince of Karlova stood staring at the big-fisted, red-faced man who glared at him from beneath his bushy eyebrows, and who was none other than his royal sire, King Constans of Karlova.

Boris advanced to the table behind which the two rulers sat, and bowed low before them. King Constans rose and walked around the end of the table to his son's side.

"You are a fool!" he said, and his voice was husky with emotion; "but I watched you just now from a window of the prison, overlooking the courtyard. I saw you before the firing squad, and my only regret is that I haven't a dozen more fools for sons!"

For the first time in many years Constans of Karlova put his arms about his only child and embraced him with real affection.

"I don't understand," stammered Prince Boris. "What does all this mean? How did you find out?"

"You may thank this young person," replied his father, pointing to Bakla. "She rode to Sovgard and found Ivan—told him the fix you were in—made him come to me, by Jove, and confess the whole fool thing!

"And you may thank His Gracious Majesty, King Alexis, and our good friend and servant, Baron Kantchi, for the lesson they have prepared for you, and which terminated just now before the stone wall in the prison courtyard."

"You mean that the whole thing was a hoax!" exclaimed Boris, flushing—"that it was never intended that I be shot?"

"We knew who you were before that indicement and sentence were read to you," said Alexis.

"And the Princess Mary—did she know?" he asked.

"She does not know yet," replied the King of Margoth, "and I rather doubt that she would care much what became of Prince Boris of Karlova after her experience with him in Demia day before yesterday—do you?" and Alexis III scowled his fiercest scowl.

"Yes," your majesty, I do," blurted Prince Boris, "because she loves me and I love her."

"Then you'd better go and tell her about it, my son," said Alexis. "You'll find her in the adjoining room."

As Prince Boris crossed the threshold and closed the door behind him he found himself in a dimly lighted room, on the opposite side of which a little figure crouched in a huge easy chair before a log fire. At the sound of the opening and closing door the figure leaped to its feet, and turning toward Boris, cried: "What word? Have they murdered him, or have they set him free?" and then as the man crossed toward her and she saw who he was, she gave a little cry and ran toward him. "You?" she gasped.

"I, your highness," he replied. "It is I with a confession and a plea for mercy," and then he told her.

"I can't be angry," she said, "for I didn't want to marry you any more than you wanted to marry me. How could we know, who had never seen one another, that we were born into the world, just you for me, and I for you?"

It was fully half an hour before Alexis III sent Ivan Kantchi into the adjoining room to discover what had become of Prince Boris of Karlova. Though he rapped upon the door a dozen times he received no response, and so he turned the knob and entered, and what he saw beyond the arm of the easy chair before the log fire sent him back into the room from which he had come.

"War is hell," he said, bowing low before the two kings," and from what I have just seen in the adjoining room I am positive there will never be war between Margoth and Karlova."

Hemmington Main and Gwendolyn Bass were married in Demia before they left for America. Prince Boris of Karlova was best man, and Princess Mary maid of honor. Mrs. Bass was very happy, and she is very proud of her son-in-law because she has discovered that there is a certain type of American which commands as great respect in Europe as royalty does in America, and that Hemmington Main was a splendid specimen of that type.

And what has become of the Rider? I wish that I could tell you that he reformed and was pardoned by both King Alexis III and King Constans, and that he married Bakla and settled down to run a nice, respectable, little tavern on the Roman road just out of Sovgrad. Would you like to have me tell you that? All right, I will; but it isn't so.

(THE END.)

National Federation of Farm Bureaus Organize

(Continued from page 4)

themselves for material benefit, we just as strongly assert the right of every American citizen to the free and unhampered privilege of disposing of his labor or products thereof as he may individually desire.

IV

We desire to point out that a large factor in the high cost of living is the curtailing of production through shorter hours, lessened efficiency of labor and strikes.

V

We approve the Federal Land Banks and request that the maximum individual loan be changed from $10,000 to $25,000.

VI

We recognize that land ownership is stewardship, that ownership does not give the right to soil depletion and we deplore the system of tenantry that encourages a rapid reduction of soil fertility.

VII

We recognize our great obligation to the returned soldiers and sailors and recommend the appointment of a committee of three of our Board of Directors to act with the American Legion in devising means of getting returned soldiers reinstated into civil life.

We extend to our soldiers of lands, seas and air, men and women, fresh from the battlefields and hospitals of Europe, our admiration and our love. These young men and young women, sons and daughters of ours—who, one year ago were in the camps at home and abroad, serving, suffering and dying—that civilization might not perish from the earth, are worthy of all boundless gratitude, praise, and no gift of the people is too good for them. We believe a constant effort should be kept up to help place them again among us, in society and business. We welcome them to the farms and we will do what we can to help them begin life over as farmers, if they choose to do so.

We commend them "for organizing the American Legion." We see in it what we have seen in the "Grand Army of the Republic" and the United Confederate Veterans—citizen soldiers for law and order, and a guarantee that civil and religious liberty shall be maintained in this land at all costs.

VIII

This organization recognizes that the strength and origin of the American Federation of Farm Bureaus has been achieved through co-operation with the State and Federal Departments of Agriculture, upon a sound educational program of local work.

We declare it to be our purpose to continue such co-operation in the future and that neither business enterprise or legislation activity should diminish such co-operative, educational activities.

IX

We urge the strengthening of the county organization financially and otherwise, so that capable men may be employed to manage the work of the county organization.

X

When state or federal government grants corporate rights to any organization it is incumbent on that government to protect the public through such regulating legislation as will best prevent favoritism, stimulate initiative and guarantee adequate public service.

XI

We urge that as rapidly as possible all corporations doing inter-state business to be under federal charter and all other corporations to be incorporated under the laws of the state in which their principal business is located.

XII

We are opposed to government ownership of public utilities. We demand the early return of the railroads to private control, under such conditions and regulations as will render adequate service at just and equitable rates. We particularly demand immediate attention to restoring the efficiency of livestock and other perishable transportation, both in car equipment and train schedules.

XIII

Recognizing the economic law that impels the consolidation of business, we proclaim that relief from the extortion of monopoly in manufacture and commerce is to be found in co-operation, in enforced publicity of business records, and a just graduated income tax rather than through interference with the economic law upon which great industries are founded.

XIV

We recommend such regulation of all purveyors of food stuffs—including packers, wholesale grocers, commission men and all similar industries in such manner as will be just and fair to producers and consumers as well as to the industries.

XV

We demand strict economy of public expenditures in all departments of government, the cutting out of such customs in transaction of public affairs as adds expense and delay in rendering efficient service, and the discontinuing of all departments or employees which are not rendering efficient service.

XVI

Where service is needed and actually rendered we favor appropriations adequate to meet that service. We do commend the extension work of the Department of Agriculture, through the land grant colleges of the several states.

XVII

We commend especially the Bureau of Farm Management Department of Agriculture, and we believe the work of the Bureau of Markets and Bureau of Crop Estimates should be vitalized and adequately supported to meet the needs of agriculture.

XVIII

We deny statements of some congressmen that farmers demand free seed distribution and condemn the practice.

XIX

With few exceptions in the past 40 years, the farmers' sole profit has come from unrestored fertility taken from the soil and from long hours of work and unpaid labor of women and children. We insist that these are legitimate factors in cost of food production and must be so recognized by the commercial interests and general public.

XX

We assert the farmer is entitled to a just profit on cost of production on all products with these items properly accounted for—with due consideration to the hazardous risks he encounters and with a wage allowance for his own labor and ability commensurate to that received in other occupations.

XXI

We express our appreciation of the Act of Congress in repealing the so-called Daylight Saving Law.

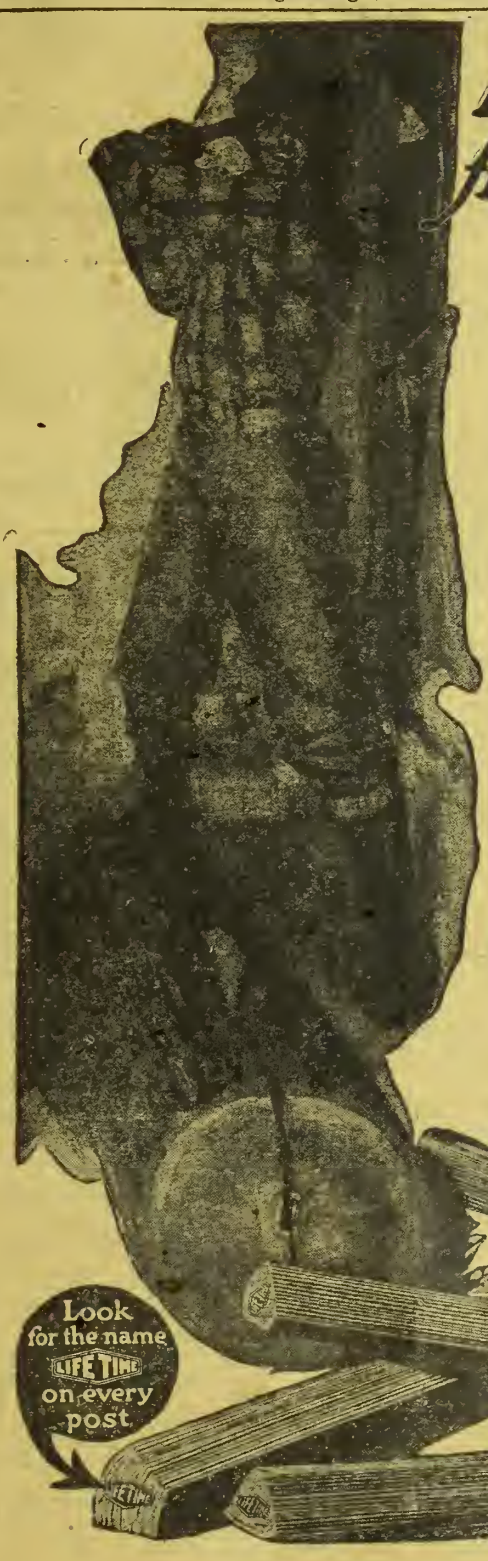
XXII

We believe Armistice Day should be made a national and international holiday and request proper national and international authorities to so act.

We suggest that since Thanksgiving is not an anniversary of the event commemorated and the date generally observed so near Armistice Day that national and state governments legally fix Thanksgiving Day coincident with Armistice Day.

XXIII

We are unqualifiedly in sympathy with the government's determination to suppress radicalism and we lend our full support to all efforts to rid this country of Bolshevism and all other anarchistic tendencies.



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Nine out of ten farmers, when asked for an opinion, reply similarly to this letter from Mr. Geertz, of Alexandria, Neb.:

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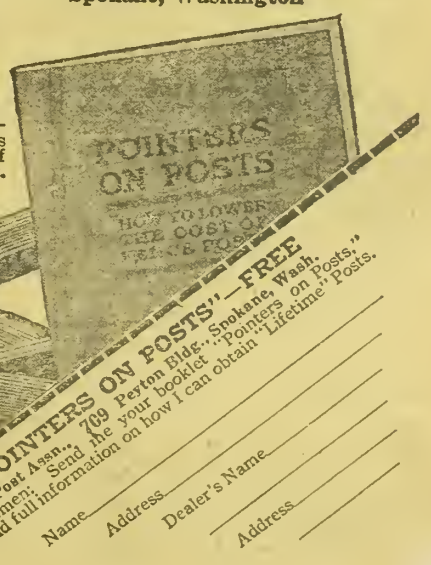

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Address_____

Trapping Muskrats

Most boys learn to trap by catching muskrats. They are found in almost all streams and ponds in farming districts. Their hides are worth a dollar and a half on the market today. They are an interesting animal and easy to catch. While they live in the water, they have to go out on the land to feed and may be caught either place. It is usually best to catch them in the water where they will drown, as they sometimes chew off their legs and escape when trapped on the land.

If you are trapping along a stream find a trail or slide that they use in leaving the water. Set the trap at the edge of the water in front of the trail and stake it so the animal cannot get out of the water after he is caught. Sometimes it is well to put an apple on a little stick so that it will hang just above the trap. Use a No. 1 trap.

The muskrat dens are in the banks of the stream with the entrance just below the surface of the water. These holes can easily be located. A trap set in the mouth of the den usually does the business. Stake it so the rat will drown. Sometimes you catch a mink in a set of this kind, but since mink hides are worth much more than those of muskrats, this is no disadvantage.

Muskrats that live in ponds build little mud huts that extend above the surface of the water. Set the trap in the entrance, or, if this is too far under the surface of the water, put some pieces of apple on top of the hut and put the trap up there. When he is caught the muskrat will dive off into the water and drown.

A board anchored under a bridge or out in a pond is a good place for traps. Cut up an apple and scatter it on the board. The apple attracts the rats. Several traps may be set on the same board. They must be fastened to the board. Sometimes as many as half a dozen can be caught from the same plank. Apples are very attractive to muskrats, especially in the spring when other food is scarce.

Trees and logs along streams are good places for traps. It is sometimes necessary to cut a place in the log for the trap. An apple just above will lure the animal to its doom.

Muskrats, like skunks, are not very wary and no especial care is required to catch them. The traps do not even have to be concealed. It is only necessary to learn something about their feeding habits and places for making dens. Never neglect a low bridge. This is a favorite place with them and a den or two will usually be found here.

There are other methods for trapping them, but these are as successful as any and simple for the beginner to try. This article is written for the beginner only, for every old trapper has his own methods.—Harold Lucas, Fort Collins, Colo.

Olathe Corn Show

Montrose (Colo.) Enterprise

We have it from the county agent, Ben King, that the Third Annual Corn Show held at Lawson's hall, December 5 and 6, at Olathe, was a great success from all standpoints. Bad weather and bad roads prevented the entering of as many exhibits as were hoped for, but those that were sent in were of unusually good quality. The judge was A. E. McClymonds, of the Agricultural College, who was assisted in determining the awards by Ralph Wilson and County Agent Ben King.

Friday afternoon sixty boys from the Olathe grades and high school were present and were given talks by Mr. McClymonds and Mr. King on corn growing, seed selection, storage, Corn Club work for the coming year, etc. On Saturday afternoon, Mr. McClymonds spoke to about seventy men who were present on the reasons for his placing of the awards and then led in a general discussion of principles of corn growing. Much benefit was derived from this discussion, also from a talk by Judson Solomon, president of the State Duroc-Jersey Association, on breeding, feeding and showing of swine.

Mr. King tells us that great interest was manifested in the exhibition and that he and Mr. McClymonds were kept busy answering questions and instructing the farmers. Mr. King brought back with him the premium winners and they will be on exhibit Monday and Tuesday in the Biggs-Kurtz window.

List of awards:

Best 10 ears of yellow corn:
1—C. D. Whitener.
2—Gene Stone.
3—Wilson Brothers
4—W. J. Strelby, all of Olathe.

Best 10 ears of white corn:
1—C. H. Dickson, Delta.
2—C. D. Whitener, Olathe.
3—H. M. Whitener, Olathe.
4—H. W. Adams, Olathe.

Best 10 ears of mixed corn:
1—Wilson Brothers, Olathe.
2—C. H. Picker, Montrose.

Best 10 ears of flint corn:
1—Dan Bryant, Montrose.
2—Howard Smith, Montrose.

Best 10 ears pop corn:
1—C. H. Dickson, Delta.
2—Howard Smith, Montrose.
3—Gene Stone, Olathe.

Best single ear corn, any class:
1—C. H. Dickson, Delta.
2—Wilson Brothers, Olathe.
3—W. A. Dennis, Olathe.
4—Howard Smith, Montrose.

Best bushel of white corn:
1—C. H. Dickson, Delta.
2—J. C. Turner, Olathe.
3—Wilson Brothers, Olathe.

Best bushel yellow corn:
1—Gene Stone, Olathe.
2—John Blair, Olathe.
3—Wilson Brothers, Olathe.

Sweepstakes:
Best 10 ears of corn, C. H. Dickson, Delta.
Best bushel any kind of corn, C. H. Dickson, Delta.

Boys' Special Class:
Best single car:
1—Beaumont Jenson, Olathe.
2—Charles Coffman, Olathe.
3—Erick Picker, Olathe.
Best 10 ears corn:
1—Erick Picker, Olathe.
2—Charles Shields, Olathe.
3—Raymond Elicker, Olathe.

Will Make Potato Flour

Due to the efforts of Lou D. Sweet, of Denver, Monte Vista is to have a potato flour mill. The plant is rapidly nearing completion and the machinery is expected at any time. The mill will have a capacity of 40,000 lbs. potatoes daily, or 8,000 lbs. of flour.

This is a new enterprise in Colorado and will be watched with interest. The production of potato flour has been carried on for several years in other sections and with excellent results.

It is used in combination with wheat flour at the rate of 4 lbs. to the barrel. It is said that the quality of the bread is improved by the addition of potato flour. It is a well known fact that potato water is desirable in making good bread.

This affords a market for the small and off grade potatoes which are as valuable for flour as any. There has been no market for these up to this time, and when not fed to hogs were wasted. The flour mill is in charge of C. W. Brandborg, who states that the bulk price for the small, off grade potatoes is 60 cents per hundred and that they will contract five years ahead at that price.

Recent inspection of six Fremont county demonstration plots on which pocket gopher eradication work was done in July, revealed that more than 90 per cent of the gophers had been killed. Four more demonstration plots of ten acres each, now have been selected and treated with poisoned carrots and sugar beets.

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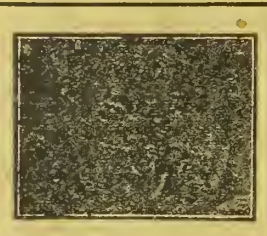

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Clark's Travel Letter

Rocky Ford, Colo., Dec. 10, 1919.

Thomas Jefferson Putnam,

Dear Tom:

I was recently at Fort Morgan getting farmers to conduct feeding demonstrations of various kinds. This work is in connection with our extension schools and under the direction of the county agent, Mr. Ott. The farmers will weigh the animals and the feed and make a record of the weights. After a few weeks we will take a buyer from Denver to tell the farmers just what their stock is worth on the Denver market the day he looks at it. Mr. Ott is going to run occasional excursions and don't you see, Tom, how valuable this work is going to be to the farmer? The farmers will know exactly whether or not they are losing on the feeding operations. The day is past when the farmer can go along with both eyes closed and hope to prosper. At the close of the feeding period we are going to hold a four day extension school and I hope you and Josephine can attend the excursions and the school. Mr. Ott has informed me that the county commissioners have allowed him to purchase a pair of scales for use in weighing hogs and he is going right after it. R. L. Ripley has already 60 head of choice Hereford calves on feed. He is going to feed them until next June and then sell them for baby beef. His ration is beet tops, dried pulp, corn and alfalfa hay.

Today I am at Rocky Ford helping Droge, the county agent, to get the same kind of work started in the Arkansas Valley. You know Mr. Droge needs a little spiritual inspiration occasionally, so he has gone to a Sunday school convention and has left me in charge of genial Joe Miller, who is secretary of the Commercial club, secretary of the county fair, justice of the peace and adviser to all the good people in the Arkansas Valley. Men and women come to him with all their troubles and secrets, and I tell you, Tom, he advises them right. There are no family breakups or divorces at Rocky Ford and the lawyers are very mad about it. Every town in the state ought to have a man like Joe Miller.

The work in the Arkansas Valley will be about the same as that done in Morgan county. A young Mr. Dickson, at La Junta, is going to keep records on his dairy herd.

We are going to have most valuable demonstrations in the Arkansas Valley. Earl Bennett, William Morrison, American Beet Sugar Company, and others are going to cooperate with us, and you know that when County Agent Droge decides to do a thing it is done. He is an actor, you just watch. I am going to leave Rocky Ford today and for the next several weeks I will be in the southwestern part of the state.

Cortez, Colo., Dec. 15, 1919.

I must finish this letter, Tom, or you will think I am delinquent. I have been at Red Mesa, in La Plata county, with County Agent E. D. Smith. Red Mesa is 28 miles southwest of Durango and has been settled about fifteen years. It is the best farming section in the county. The people raise a great deal of alfalfa and are beginning to raise corn. A few dairy cows are kept and a few silos have been built. I was very much surprised to find small flocks of sheep on nearly every farm. I think this section leads the state in small farm flocks of sheep. The people of Red Mesa are considering forming a livestock shipping association and they certainly need it. Why, Tom, some of the local buyers take $25.00 a head for their profit on cattle and they can do it because they think the farmers cannot help themselves.

After leaving Red Mesa I went to western Montezuma county and there I found the people more prosperous than ever. They have been tinkering up irrigation matters since I was last there and are beginning to see the light of day. When they get the irrigation tangles straightened out it will be one of the most desirable places in Colorado. Just now the farmers are having trouble disposing of their hay. Last winter was a hard one and the stockmen were hard hit with scarcity of hay and high prices, so this year they have taken their stock to New Mexico where the grazing is good and the climate more mild. This leaves the farmer without a market for his hay and prices are low, but it is a long time before green grass comes again and no one can tell what hay prices will be before then. aHy in the stack is priced at $10.00 per ton. I talked with a good many farmers and they think they will get dairy cows. Why, we figured the alfalfa hay at present prices of butter fat to be worth $30 to $40 per ton! The farmers who have dairy cows to consume their hay are certainly smiling.

The Montezuma valley is becoming a corn section. I saw lots of splendid corn that was grown there this year, and more of it will be grown next year. One man is going to plant one hundred acres next year. Corn means finished hogs. Montezuma valley shipped 10,000 head of feeder hogs this year. A lot of them went to Nebraska and were finished on corn and shipped back to Denver. The feeders in Nebraska paid 5c a pound more for them than the farmers in Montezuma valley received for them, and as feed is no higher in price than it is in Nebraska, why shouldn't the Montezuma farmer finish these hogs and receive all the profit?

As I see it, Tom, the farmers in the Montezuma and Mancos valleys must come to finish more hogs for market and milk more cows. This procedure, with the growiug of corn, will transform conditions. A more diversified system of farming will give relief to transportation and improve market conditions.

R. W. CLARK.

Proposed Beet Prices

An effort is being made by the sugar beet raisers of the mountain states to bring about an amicable agreement on the question of the price of beets for 1920 early in the season. At a meeting of the Mountain States Beet Growers' Association, held in Denver during December, a price schedule was adopted to which the growers expect to adhere. It is based on a rate of $10 per ton, the same as in effect last season, with the price of sugar at $7 per hundred at seaboard, and an increase of $1.50 a ton for beets for every increase of $1 in the seaboard price of sugar. The object of the growers in fixing this scale is threefold: insure a fair price for beets, prevent an undue increase in the price of sugar to the consumer, and give the factories the beets at a cost which will enable them to make sugar at a fair profit.

Secretary J. H. Golden, of Longmont, Colorado, furnishes the following information about the proposed contract:

The Mountain States Beet Growers Association, at its annual meeting held in Denver, December 8, 9, 1919, unanimously adopted the following clause to cover price for sugar beets for season of 1920:

"To pay for beets delivered the flat price of ten dollars per ton, and an additional consideration at the rate of $1.50 per ton of beets for each $1.00 advance in price of sugar above $7.00 per hundred pounds at U. S. seaboard markets, fractions to be reckoned in proportion, and said seaboard price to be determined by the average of said markets for the twelve months between October 1, 1920, and September 30, 1921. Payment of said additional consideration, if any shall result hereunder, shall be made to the grower on October 15 1921."

Sugar at
$ 7.00, seaboard, $10.00 per ton for beets
$ 8.00, seaboard, $11.50 per ton for beets
$ 9.00, seaboard, $13.00 per ton for beets
$10.00, seaboard, $14.50 per ton for beets
$11.00, seaboard, $16.00 per ton for beets
$12.00, seaboard, $17.50 per ton for beets
$13.00, seaboard, $19.00 per ton for beets
$14.00, seaboard, $20.50 per ton for beets

Or, for an example involving a fractional seaboard price, $8.50 sugar would make a price of $12.25 for beets, and, for a more probable figure let us suppose the year's average to result at $11.85 for a hundred pounds of sugar at seaboard; then the grower would receive $17.27½ per ton for his beets.

The following resolutions were adopted unanimously:

Whereas, The farmers are still at greater expense in production of sugar beets, and,

Whereas, In asking a flat rate of $10.00 per ton for said product they may be misunderstood by some as asking for an increase in the price of sugar;

Now, Therefore Be It Resolved, That while we, the growers of sugar beets are not asking for an increase in the price of sugar to the consumer, we are asking a more equitable division of the earnings of the beet growers, said division of the earnings of the beet growers to be based on the cost of production and the selling price of sugar. To this end we urge the necessity of a thorough organization of beet growers, an educational campaign and a firm stand for the contract agreed upon by the Mountain States Beet Growers Association in annual session.

Resolved, That the State Agricultural college of each state sending delegates to this convention, be requested to furnish this association with the contract prices paid for sugar beets in this and other domestic and foreign beet growing districts.

Resolved, That said colleges be requested to furnish data on sugar beet varieties, such as the name of variety, sugar contents yield and all such data available and beneficial to beet growers.

Resolved, That the business men's organization of each town and city in every beet sugar factory district be invited to state their positions upon the fairness of the terms of the Mountain States Beet Growers Association contract proposed for 1920 crop.

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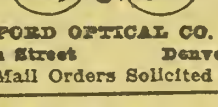
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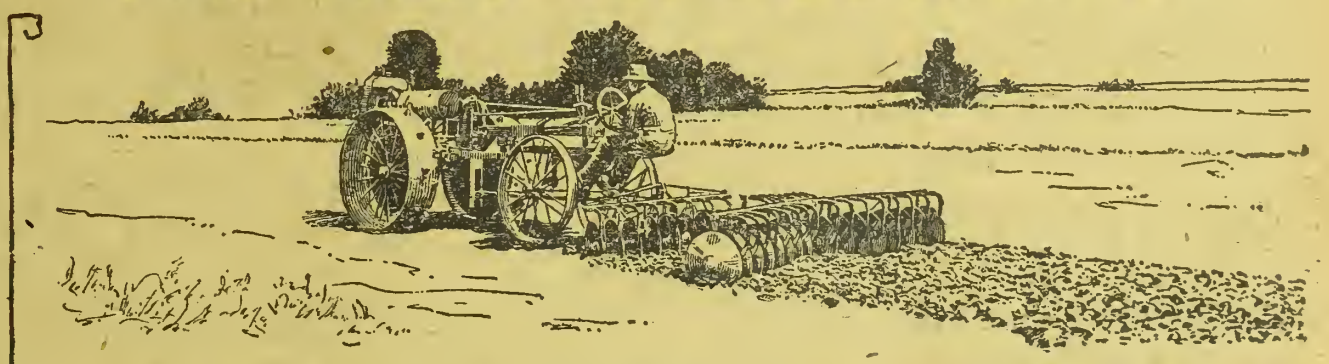

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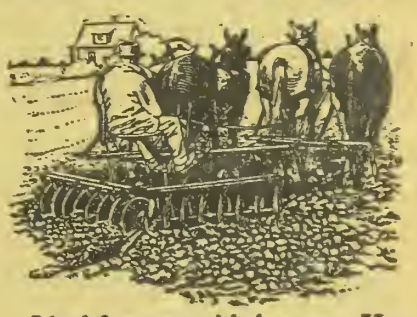

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The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Midwinter

The speckled sky is dim with snow,
The light flakes falter and fall slow;
Athwart the hill-top, rapt and pale,
Silently drops a silver veil;
And all the valley is shut in
By flickering curtains gray and thin.

But cheerily the chickadee
Singeth to me on fence and tree;
The snow sails round him as he sings,
White as the down of angels' wings.

All day it snows: the sheeted post
Gleams in the dimness like a ghost;
All day the blasted oak has stood
A muffled wizard in the wood;
Garland and airy cap adorn
The sumach and the wayside thorn,
And clustering spangles lodge and shine
In the dark tresses of the pine.

Still cheerily the chickadee
Singeth to me on fence and tree:
But in my inmost ear is heard
The music of a holier bird;
And heavenly thoughts as soft and white
As Snowflakes, on my soul alight,
Clothing with love my lonely heart,
Healing with peace each bruised part,
'Till all my being seems to be
Transfigured by their purity.

—John Townsend Trowbridge.

When We Show Off

When a farm woman wants to show off she can make it plain to the rest of the world that she knows how to do it. At least they can in El Paso county, for we've just been down to see the Autumn Exposition at Colorado Springs. That big show was a go from the start, and the women of the county furnished their full share of the motive power.

In spite of the cold weather the women gathered up enough canned fruit, "p'serves" and goodies that everybody's mouth watered and enough clever sewing and beautiful fancy work that the men got ashamed of the amount of grain they had brought and went back after more. Not that they didn't have quite a showing to begin with, but that the women had been so very thorough.

You may not believe it, but we'll vouch for it. The women of one community, Table Rock, up above the Black forest in the northern part of the county, brought in seventy-two jars of canned fruit and vegetables, not counting jellies and jams and other good things. Only the initiated and a few of the other communities that brought in almost as much can know the meaning of that in real work, nor the amount of worrying the home demonstration agent had to do to keep it from freezing. But it didn't!

When it comes to those colored pages in the big women's magazines, making such nice little pictures of the things you can make out of nothing, they haven't anything on the women who brought in some of the cleverest and prettiest things made out of flour sacks that ever were.

Beautiful aprons bound in blue and pink, house dresses and children's dresses made from carefully bleached sacks and trimmed with a bit of red, table covers and under waists showed that as long as men insisted in eating so much bread, there was still a way to get around the high price of ginghams. Some of these things are going to the Stock show, so watch for them there.

We can't tell you all about it, but we can tell you that the women of El Paso county know how to win prizes for their communities, and are to be congratulated on the way they put things through. The joke of some of these fairs is that the women know as much about the placings of the corn as the men do and appreciate it just as much, because they know who helped to make it grow; but whoever heard tell of a man's doing anything useful with a flour sack, except to help empty it?

We'll take all that back, because one man sent in a quilt he had made and it was well made. Two other men sent in most excellent exhibits of canned vegetables. In fact they took a few of the prizes away from the women, but we didn't mean to mention that.—E. D.

Pearl Guinea Fowls

Melvin Key, of Adena, Colorado, wrote some time ago in response to the request for information as to where pearl guinea fowls might be secured, that there were a few in their flock to be disposed of still. This letter has been held with the belief that those wanting these fowls would put off purchasing them until they were ready and this would leave it a little fresher in their minds.

If you want pearl guinea fowls, write to Melvin Key, of Adena, Colorado.—E. D.

Stock Show
Are You Going?

Beginning the week of January 19th, the National Western Stock Show will be held in Denver. Every one is interested in the splendid animals and the pavilion show attractions, and all that and that is what the Stock show is for; but we feel there are other things the women will be interested in also.

These special points will be the remodeled garments exhibit, aimed, of course, at taking care of what we have in these days of high priced materials, and the "water-in-the-home" booth. If you go to the show, and we hope you will, be sure and look these exhibits up.—E. D.

Questions

Questions will come up which simply crack editorial conceit all to pieces, and they sound perfectly easy, too. One of these which everybody usually has an answer for and yet which seem to have been tried by the questioner, concerned the removal of mildew stains. We'd like to have any suggestions of the readers along this line which have been tried out with success. We would like to tell others about it through these columns.—E. D.

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If you could have everything else as good for so little money, the "high cost of living" would be out of date.

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There are four flavors of Schilling Tea—Japan, Ceylon - India, Oolong, - English Breakfast. All one quality. In parchmyn-lined moisture-proof packages. At grocers everywhere.

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"The Phonograph With a Soul" The instrument that sings as a human sings—that plays as a human plays—the instrument that literally re-creates music—the instrument you will buy when you hear it.
Shipped Anywhere, Express Charges Paid

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Beautiful Book of Edison Phonographs, Pianos and Player Pianos Free

What Mary Wants

Dear Mary:

The world is very full of a number of things; but you, I know at present are interested in only one of them, in only one little one of them, and I am so very proud that you have named her "Sarah." Why didn't you tell me that I might have a namesake? Then this little dress I'm sending and have had ready for ever so long would have been out of one of my little girl dresses so carefully saved. But that will keep until next summer. In the meantime, I can't wait to see her; but I'm coming in about two weeks, as will "be explained later."

You used to say, Mary, dear, that you wanted seven boys and no girls. How do you feel about it now, with your two boys and the wee woman? She's about as dear as the others, isn't she? and now that you have watched the little men develop in the boys, it will be a brand new marvel to your agile brain to see femininity cropping out all over her, from right now on.

And now let me tell you to what you have to attain in her training, by the time she is six months old. This tale has been kept for a week for your special benefit, and Marvin will vouch for the truth of it. He had to go up to Denver on business a couple of weeks ago and I went along just to look at all the shop windows and see what Christmas looked like up there.

While I was waiting in the Union Station for Marvin to finish up and meet me there to catch the down train, a slip of a girl came in carrying a great big baby, that was evidently hers. She fussed around with him for a few minutes, spread a blanket out on the bench, took off all his wraps, and then went out and came back, bringing a box of popcorn and an ice cream cone. It at once became evident to the horrified onlookers that the ice-cream cone was intended for her son, who, she proudly informed us was just six months old! We were thankful she reserved the popcorn for herself.

Marvin came in just about that time and he will swear with me that that baby ate the cream out of the cone, and part of the time held it in his own

(Turn to page 23)

The Little Foxes

It's the little foxes that spoil the grapes; so it is with health; mend the broken resistance and you have robustness, neglect and you have weakness.

Scott's Emulsion

concentrated tonic-nutriment, effectually mends the little weaknesses and sustains strength by building up the resistive powers of the body. If you would keep strong—use *Scott's Emulsion* often.

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"Diamond Dyes" Make Shabby Apparel Just Like New—So Easy!

Don't worry about perfect results. Use "Diamond Dyes," guaranteed to give a new, rich, fadeless color to any fabric, whether wool, silk, linen, cotton or mixed goods,—dresses, blouses, stockings, skirts, children's coats, draperies,—everything!

A Direction Book is in package.

To match any material, have dealer show you *"Diamond Dye"* Color Card.

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PATTERN DEPARTMENT

All patterns 15c each. Address WESTERN FARM LIFE, Pattern Department, Fourteenth and Arapahoe, Denver, Colo.

Take Notice—Patterns ordered through this magazine are mailed promptly from the factory at Brooklyn, N. Y., and arrive in 10 to 12 days from the time order reaches Western Farm Life. Be sure to specify size and write name and post-office address plainly and distinctly. Much delay in receiving patterns is occasioned by failure to observe these precautions.

3091—A Pretty Frock—For this style net or embroidered crepe and crepe de chine, satin or silk could be combined. The design is also attractive for other combinations. The skirt is made with "pouch" drapery at the sides. The over-blouse is finished with girdle ends, to which a sash of ribbon or material may be attached. Cut in sizes 8, 10, 12 and 14 years. Size 10 requires 4¾ yards of 27-inch material.

2719—A Popular Style—Serge or gabardine would be nice for this model, with cuffs and collar of pique, drill or satin. Plaid or check suiting may be combined for this dress. The sleeve is cut for wrist or eblow length finish. Cut in sizes 4, 6, 8 and 10 years. Size 8 requires 3¾ yards of 27-inch material.

Waist 3089, Skirt 2644—A Smart Frock—For this stylish model Ladies Waist Pattern 3089 and Ladies Skirt Pattern 2644 was selected. It will be attractive in brown duvetyn with trimming of fur bands and bead embroidery or in black satin, with facings of green or brick color crepe. It is nice also in serge, velvet or crepe de chine. Waist is cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt in sizes 22, 24, 26, 28, 30, 32 and 34 inches waist measure. The

All Patterns, 15c Each

width of the skirt at lower edge is about 1¾ yards. For a medium size it will require 5⅝ yards of 45-inch material.

3085—A Unique Design—This is a good model for duvetyn, taffeta, satin, serge, velveteen, tricotine and crepe. The vest may be of contrasting material. Cut in sizes: 16, 18 and 20 years. Size 18 requires 5⅝ yards of 44-inch material. Skirt measures 1½ yards at its lower edge.

3090—A Practical Set of Short Clothes—For the dress here portrayed, nainsook, lawn, poplin, repp and voile could be used. The drawers and petticoat are nice in lawn, longcloth, muslin, cambric, domet or canton flannel. The dress may be made with the sleeve in wrist or elbow length. The petticoat may be finished without the ruffle. Cut in sizes: 6 months to 1 year, 2, 3 and 4 years. Size 4 will require 2⅝ yards of material 36 inches wide for the dress, ⅞ yard for the drawers and 1⅞ yards for the petticoat.

3084—A Serviceable Model—For this style one could choose soft silk, poplin, repp, batiste or nainsook; for service and utility, check or plaid woolen or gingham, chambray, or linen could be employed. The sleeve may be in wrist length with a band cuff, or cut short and finished with a "turnback" cuff. Cut in sizes 2, 3, 4 and 5 years. Size 4 will require 3 yards of 27-inch material. Collar and cuffs may be of contrasting material.

3697—A Practical Apron—This is a "slip-on" model with side closing. The sleeve may be gathered to the sleeveband or finished loose, as back view illustrates. The style is good for percale, gingham, chambray, seersucker, drill, lawn or muslin. Cut in sizes: Small, 32-34; Medium, 36-38; Large, 40-42; Extra Large, 44-46 inches bust measure. Size Medium will require 4¼ yards of 36-inch material.

3063—An Attractive Dress—This is very good for gingham, chambray, lawn, drill, linen, serge, gabardine, voile, poplin, repp or percale. It is a dressy model that may be finished with a comfortable sleeve in bishop style or one in short length, with a turned back cuff. Width of skirt at lower edge is 1¾ yards. Cut in sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Size 38 requires 5¼ yards of 36-inch material.

What Mary Wants

(Continued from page 22)

small hands, and licked off the top the same as any other "picknickner." It was snowing outside, and at least zero, and the baby's nose got red from the coldness of the treat, but he ate on.

My soul quaked inside for the future or lack of such which that child had, but while I was still deciding whether it was a gastronomic feat or tragedy, the mother told me placidly that "he'd been crazy about ice-cream ever since he was two weeks old, and it never hurt 'im none!"

You see you begin early—and at six months Sarah may be able to hold the cone in both hands and lick efficiently without smearing a hair!

Now I am coming to begin her training right. We are going to the Stock show and I'm going to see everything from fat sheep to the demonstrators of the latest cereal drink. Aunt Muriel is to stay with the youngsters and I shan't worry a bit. On the way back I shall stop and get acquainted with Your Sarah. Please have the freezer full.

Until then, my love to you both, for what will you do to me after?

SARAH.

Provide For the Birds

This cold weather and constant snow is very hard on the birds which have stayed over, and especially the ones which depend on seeds for their living. We are not talking about either sparrows or blue jays. One has enough Cockney impudence to rob his living from your hens if you will let him, and the other doesn't need it.

But if you are willing to spread a table for your guests you can keep away the undesirables, and you will also have the most interesting time imaginable watching some of the shyer ones you seldom have a chance to see otherwise.

Hang a piece of suet from a tree somewhere close to the house and use a pretty long string. The blue jay is too heavy to balance there, and a sparrow prefers a table on the ground. In fact I have read that a board suspended by a spring delicate enough to sway with the weight of a sparrow will take away all his pleasure in eating anything off that board. How it would work with jays is another question. The suet will attract a large number of the little feathered people and may keep a number of the very good and useful ones from starving.—E. D.

San Luis Valley Show

The San Luis Valley Hog Growers Association are laying their plans for their annual hog roast and stock show, February 11, 12 and 13, at Monte Vista, Colo. This event is looked forward to with much interest not only by the stockmen of the valley but all over the state. The stock show held in the past has been one of the best held in the state. The organization back of this affair is the High Order of Grunts; an auxiliary of the Hog Growers association. This is a club of live members who go after things with the vim that puts them over. The money for premiums in the show is raised by popular subscription. The men are willing to assist in this as they believe in their country and have shown, from the splendid returns they get from their land, that they have a right to feel proud.

To assist the show association in putting on a strong show, the Hereford and Shorthorn Associations of the valley are offering some liberal premiums.

The Poultry and Pet Stock Association are planning their annual show in connection with all of the agencies at work with County Agriculturist Hyatt and a real treat is in store for those who attend.

Those in charge are: A. H. Webster, general superintendent; George B. Boutwell, secretary; J. Frank Goff, horses; Arthur D. Wright, cattle; Olin Perdew, sheep; William Robertson, hogs; George P. Godfrey, poultry and pet stock.

The Shorthorn Breeders Association officers are as follows: H. G. Morecraft, president; Fred Kernen, vice-president; James Pennington, secretary; W. F. Hanna, treasurer.

The Hereford Breeders Association is led by the following officers: A. H. Webster, Monte Vista, president; Frank Russell, La Jara, vice-president; A. E. Headley, Monte Vista, treasurer; C. D. Hyatt, Monte Vista, secretary.

County Agriculturist Hyatt has been instrumental in bringing in eight carloads of registered Shorthorn bulls and heifers and placed them with the farmers of Rio Grande county at actual cost. Their results from these importations will do much to improve the livestock in this section as well as to make the show interesting.

Peas which grew on irrigated ground in Camas county, Idaho, in one instance made a vine growth of more than 8 feet. Men who are trying to grow field peas there are confident that it will make a good pea country. The erection of silos for peas and oat silage as well as sunflower silage is being considered.

ESTABLISHED 1879 Stark JEWELERS

Watches

40 years we have been making a specialty of Watches, and we give you the benefit of our experience.

709-711 16th St., Denver

HEAR THIS AT

The Stock Show

When you come to the Stock Show in January, be sure to stop at the Baldwin booth and hear the soloist accompanied on a Manualo, the world's finest player-piano, and on a Columbia Grafonola.

Consider this advertisement your invitation to stop and try out, yourself, either the Manualo or the Grafonola. We'll be glad to give you a complete demonstration.

Free Trial Offer on Records and Player Rolls

We will send you any number of records or player rolls on two days' free trial. Select at least one-third and return the ones you do not care to keep.

All mail orders shipped the same day they are received.

Ask for any of these free catalogs:

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3. "The A B C of the Manualo Player-Piano."
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DENVER, COLORADO

"The Denver"—400 Feet Long

We Have What You Want At the Price You Want to Pay May We Give You the Proof?

Our $2,000,000.00 Stock Embraces **Everything in Clothing for Man, Woman or Child—Everything for Furnishing Cottage or Mansion,** and we offer you by far the largest varieties for selection to be found in the mountain west.

If you cannot call, shop through our Mail Order Department

THE DENVER DRY GOODS CO.

Profitable Farm Poultry

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, WESTERN FARM LIFE, Denver, Colorado.

Experience is the best teacher. If this is true, our experience in shipping eggs in and out of the state will be of some benefit to readers who are figuring on getting eggs for hatching from long distances.

Eggs of good character, sound, fresh and fertile, well packed and not used for anything more strenuous by the express messengers than as dumb-bells or Indian clubs, will give a good hatch if everything else is all right. We have shipped from as far as New England and had as good hatches as from eggs shipped from Kansas. We are convinced that the ride on the train has positively no injurious effects on the "hatchability" of the eggs.

Another question which comes to this office frequently is that of altitude affecting the hatch. Our best answer to that is the following: Several years ago we packed 15 eggs in a common carton, not a shipping case, for Governor Ammons, who was visiting Fort Collins. He carried them to Denver, traveling by rail; that night he went by trolley and by horse and buggy to his home, about 15 miles from Denver; the next morning back to Denver, then to Parshall, 7,600 feet altitude, then by farm wagon over rough mountain road 16 miles farther and still higher. Twelve fine, strong chicks hatched.

Several years ago, at a farmers' institute in a mountain district, a woman told of just having taken 39 chicks from 3 hens; 39 chicks from 45 eggs at an altitude of 8,500 feet.—W. E. V.

A Remedy For Roup

(Ans. to H. H., Pueblo County, Colo.)

In answer to your inquiry for roup remedy, would suggest, first, a general cleaning up; second, a disinfectant in the drinking water; third, a good dusting place for the fowls. This treatment is for the flock and is more in the nature of prevention than cure. By cleaning up we mean: to remove all droppings, regularly; remove all litter from the house that may be damp, foul, or contaminated. The disinfectant may be carbolic acid, potassium permanganate, or anything used about the home. If the poultry house has a dirt floor, loosen up a section of it where the sun strikes for a bathing place; at any rate provide the dust bath as the regular bath keeps the lice down and a lousy hen is not in shape to resist disease germs.

The roupy fowls should be isolated as soon as discovered; dust with insect powder for lice; feed lightly soft feed; put disinfectant in water; a simple treatment consists of ducking the head into a dish of water which is lightly covered with a scum of coaloil; strangling will cause the oil to fill the nostrils and throat. Swelling about the eyes can be reduced by cutting open the place and washing out with a mild disinfectant.

Very bad cases should be destroyed and all sick ones should be kept in a clean, dry place free from draft.—W. E. V.

Shipping Eggs For Hatching

I have been told that you cannot get an egg to hatch that has been shipped in and also that eggs that are carried from one ranch to another won't hatch. One lady was telling me that she had a setting of eggs sent here by parcel post and out of setting only two chickens hatched and they were so weak they died soon after hatch. Do you know if this is true? If it would not hurt hen eggs to ship them in would it bother turkey or goose eggs? I am anxious to get some chickens and turkeys and thought it cheaper to buy the eggs and start with incubator as it is a very hard proposition to get chickens or turkeys here and it is very expensive to have them shipped in.—Mrs. P. O. B., Wyoming.

I have been shipping in eggs for hatching from Eastern states, from as far as New England, for twenty-five years, and distance never affected the hatches, so far as I know. I have also shipped eggs long distances; some buyers reported good hatches, some poor. I have never shipped by parcel post, but doubt if a mail carrier could pitch a basket of eggs farther than an express messenger can. Good eggs, well packed, decently handled, will give very satisfactory hatches.—W. E. V.

Dr. LeGear's Book

An interesting volume on "Care and Treatment of Stock and Poultry" has just been published by the L. D. LeGear Medicine Company of St. Louis, the author being Dr. LeGear, who is noted as a scientific veterinarian of 27 years' experience. Dr. LeGear is a graduate of the Ontario Veterinary College, Toronto, Canada, and has been an active factor in the deveolpment of the poultry industry and a noted producer of prize winning fowls. Copies of the book are procurable at a cost of only 10 cents. The volume contains more than 125 pages of suggestions and advice concerning the care of horses, cattle, swine, sheep and poultry.

For Starting Flock In Winter

Please advise me as to the best breed of hens to start a flock with this fall for winter laying.—A. B. R., Mesa county, Colorado.

Well developed, mature pullets will lay winter eggs regardless of breed or variety. Ninety-nine per cent of the old hens are now on strike and few will get ready for business before February 1st. Late hatched, poorly developed pullets will keep the old hens company. If you want eggs now get pullets with full red combs, then feed unsparingly.—W. E. V.

Discussion of Incubators

(Ans. to C. E. D., Moffat County, Colo.)

There was a time, not so many years ago, when because of rapid improvements in construction and the discovery of new principles in construction of incubators, it was rather a risky business to buy a machine. Is not this true of pianos, sewing machines, autos, etc.? But now we buy a Ford for $600.00, probably get our money's worth, but do not expect to get the same service or length of service that we expect to get for more money. For more money we get better construction, more comfort, a sop to our pride and more satisfaction in a car; probably we ride no farther, possibly no faster, but the satisfaction will outweight the greater depreciation.

To some extent this is true of an incubator. The cheaper machine is built on the same general principles as the higher price machine and under the proper conditions does good work; we do not believe it will do as good work under all conditions, and we must not expect it to be as substantial and durable as the machine made of better materials and made with greater care. The better case will stand variations of temperature better; the working parts, being more carefully made and of better material will naturally function better.

We have used many makes of both classes; our choice is the machine made for service, rather than the one made as cheaply as possible. It would be presumptuous for us to designate any particular incubator as the best as there are so many really first-class ones on the market, incubators so much alike in all essential particulars that there can be no actual difference in their performance. The matter of choice is largely a matter of fancy or reputation in the community or purse.

Perhaps we are not very specific; we can say this much about the machines we have used: the Cyphers, Prairie State, Model, Denver, all first class in construction, have been entirely satisfactory. There are others that are undoubtedly as good and built on the same lines but we have had no personal experience with them.—W. E. V.

Upwards of 350,000 distinct species of insects have been described, the majority of which are, in some way injurious, and at least as many more remain undescribed.

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Sky-high prices for eggs this winter will make big profits for those who know how and what grain mixtures to feed. Improper methods mean big loss. Prof. T. E. Quisenberry made a thousand hens in the American Egg-Laying Contest lay 200 to 304 eggs each in a year. Another big flock cleared for him $6.15 per hen in nine months. His methods are explained in a new bulletin, "How to Get More Eggs and Save Feed." Get this free bulletin by writing Quisenberry today, addressing care American Poultry School, Dept. 582, Kansas City, Mo.

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Out Among the Breeders

F. M. LOCKWOOD, Fieldman

One of the finest Poland China purebred herds in the west is owned by A. D. McGillvray, five miles east of Boulder, Colorado. Here I found 54 head, many of them prizewinners at the big shows. Outstanding is Sampson Over, leading herd boar. Sire McSampson was grand champion of the 1916 International at Chicago and McS. Big Timm, a son of Big Tim, grand champion owned by William Ferguson. Sampson Over won first prize and grand champion at the Boulder fair, 1919, and first prize and reserve champion at the Colorado State fair, 1919. He has a great sow, Victory, that won grand champion at both fairs. Ten ribbons won at Colorado State fair by McGillvray can be seen in a bank window in Boulder.

Lunch at Shannon Brothers. They showed me five purebred Holsteins. One male and one cow came from a famous Wisconsin herd. This is their nucleus. Their farm is three miles west of Lafayette.

I motored north two miles and in that short distance found five breeders, four of them new. "Can you beat it?"

First is the Mountain View farm, Stanley Bixler, proprietor. Here I found 15 purebred Holsteins, headed by Ormsby Korndyke Johanna, a big fine animal. Mr. Bixler's barn is clean and up-to-date.

Next is the Boulder Creek ranch, owned by Clarence Bixler. He likes Percherons and has two stallions, four mares and four colts. His cattle are fine grade Holsteins.

The third place is N. A. Leggett's, who has nine registered Shorthorns, including one male. Mr. Leggett, whose parents came to this ranch 47 years ago, just began last April his career in the pure breeding game. His is young Wisconsin stock.

Next door is the Mt. Vernon farms, owned by the Spicers—L. F. and his daughter, Mrs. DeLilla. They have for a beginning four head of Iowa bred Shorthorns. Mr. Spicer is erecting substantial, unique and original buildings, fences, etc. He is ambitious and the Spicers will be heard from.

I next called on Mr. Nelson, seven miles east of Boulder, who has 13 purebred Holsteins, including four Wisconsin bred cows, one full grown and two young bulls. These animals are very clean and appear well kept.

C. A. Weaver's Herefords are seven miles west of Boulder in the hills. He has two registered bulls and seven other purebreds.

I next visited Maxwells, a mile north of town. They are extensive breeders of purebred Herefords. The herd is kept in the foothills most of the year. Fifty of their herd are purebreds. The herd bull is an outstanding two-year-old, bred by Fulscher & Keppler. They are disposing of over 100 head of grades to Idaho parties this month.

I found four head of registered Jerseys and some Poland China hogs a half mile from Boulder owned by W. A. Groom, father of Walter Groom, county agent of Arapahoe county. His bull is out of imported Eminent Golden Lad. Mr. Groom won two first and one second prize at Boulder fair, 1919.

I next visited the Pleasant View farm, H. H. Howarth, breeder. He is an enthusiastic dairyman and has five purebred Holsteins. These are well kept and they are wonderful milk producers. One has a record of more than 15,000 pounds in a year. Two of these cows are double granddaughters of Fayne Concordia. He and two others own a fine young bull bred by M. E. Penrose. Mr. Howarth also has a few Duroc hogs, purebred. This ranch is three miles northeast of Boulder.

L. O. Hanson, near Howarth's, sold out but has again started with several purebreds, including one mature bull and two registered bull calves. He also has a place in Boulder, Mount View Stock and Fruit farm.

My next stop was at John Hendricks, four miles northeast of town. He likes Shorthorn cattle and Duroc hogs. Here I found the Duke of Boulder, a fine bull that has won two first prizes and one grand champion ribbon. His are Burke's bred Durocs, originally. He has 13 head.

A fire burned the ranch residence of Mr. John Deal the day before I arrived, but Mr. Deal was not too disheartened to talk Jerseys. He has 10 purebreds with herd bull, five miles northeast of Boulder, on the old Golden ranch.

The next breeding ranch visited was six miles northeast of Boulder. Here were fifteen purebred Holsteins headed by King Friend Pontiac. L. C. Helburg is the owner.

Mr. Arthur Gilliam, seven miles east of town, has a fine lot of Jersey cattle and good buildings, sheds and equipment. Five head, including bull, are purebred.

The Middlesworths fancy Percheron horses. G. G. has a fine registered grey two-year-old stallion, bred at the Jarosa ranch. His brother, Roy, has two purebred mares. This ranch, owned by Mr. G. S. Middlesworth, is seven miles east of Boulder.

I next called at the Shorthorn ranch of H. F. Harmon, six miles east of Boulder. Here are 25 purebreds. There are two herd bulls. Mr. Harmon will soon have as his herd bull a Warnock bred animal of great quality, Royal Model. Everett Harmon, his brother, has a herd of 26 purebred Shorthorns nearby. I did not see them.

Arthur Creeve of Boulder has a nice herd of Herefords, which he keeps in the foothills. He has two registered bulls. He is new at the game.

James C. Hamilton, who also resides at Boulder, has a purebred bull and ten heifers, all Holsteins. His ranch is east of town. Grandmother of these heifers produced over 1,000 pounds butter fat in one year. Mr. Hamilton sold his high grades last July. His is Wisconsin bred stock. He intends to exhibit at the stock show.

My next call was on the pioneer Holstein breeder, F. S. Woods, one mile east of Boulder. Eight years ago he purchased a few head from the Windsor farm. After selling out at times he now has five purebred cows, three heifers and three young bulls. C. F. Woods, son of the before mentioned, has the next ranch east. He is beginning with two bulls and two cows, all purebred.

I next visited the Alba farm, three miles east of Boulder. Here are 25 purebred Holsteins, including one bull, eight milking cows and two calves. They are well kept. The bull serves the two herds. He won first prize and grand champion at Boulder fair. This stock is bred by Mr. M. Harper and originated from the Penrose herd.

The old county farm, four miles northeast of Boulder, makes an ideal breeding ranch. Here Mr. W. S. Smith has some fine Herefords. Sixteen are purebred. His herd bull is Lord Domino, a fancy high-priced Fulscher & Kepler bull. He likes horses, also and has one stallion and six registered Percherons, originating from the Zang Elmwood farm.

E. H. Allen's breeding ranch is six miles east of Boulder. He has 20 registered Shorthorn cattle and a nice lot of registered Poland China hogs. The hogs won many premiums at the 1919 Colorado State fair. Mr. Allen recently visited Nebraska herds to see if he could improve his Shorthorns. He is in the game in earnest.

A young breeder, who has started with high ambition and is already well known, is Glen Martin and his Shorthorns. He has a wonder in his herd bull, Cumberland Type 2nd, bred by Saunders & Son of Iowa. Besides he has 20 registered cows and young bulls. Mr. Martin exhibited eight head at the Longmont fair this year and brought home nine ribbons. He also has nine registered Duroc hogs.

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BEAUTIFUL ROSE COMB RHODE ISLAND RED cockerels; large and well matured; $2.50, $3, $4, $5. Lucy Ruppenthal, Lucas, Kans.

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FOR SALE—YEARLING REGISTERED HOLstein bulls. Nels Anderson, Niwot, Colo.

FOR SALE—TWO PUREBRED HOLSTEIN bulls. For pictures and all information write A. D. McKee, Gunnison, Colo.

FOR SALE—WELL MARKED, HIGH GRADE heifer calves, $25 each. Satisfaction guaranteed. Art Rasche, Lake Mills, Wis.

FOR SALE—ABERDEEN-ANGUS CATTLE; 13 registered cows and heifers, 4 registered bulls. A. B. Ashton, Arriba, Colo.

FOR SALE—REGISTERED HOLSTEIN BULL calves from advanced registered dams. Excellent breeding. Priced right. Garmesa Farms, Fruita, Colo.

A CARLOAD OF REGISTERED YEARLING Hereford heifers; also this year's heifers; two yearling bulls and some extra good bull calves; all good boned, good marked and best anxiety breeding. J. O. D. Ranch, Aroya, Colo.

HORSES

FOR SALE—PERCHERON STALLION, DULL black; imported 1912, foaled 1908. Has first premium from state fairs. D. Karlen, Route 3, La Junta, Colo.

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JACK FOR SALE—CHAMP CLARK 6198, BLACK with mealy points, foaled 1912, registered in A. J. & J. R. of A., 15 hands standard, good bone and feet, good body and a breeder. Mules to show. Quitting the business. F. Gilgen, Eaton, Colo.

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FOR SALE—DUROC PIGS, CHEAP, FROM weaning size up, big type (registered). Write F. L. Toliver, Fort Collins, Colo.

FOR SALE—A FEW BIG TYPE POLAND CHINA spring boars of a 900-lb. sow and a 1100-lb. boar. W. J. Peterson, Seibert, Colo.

FOR SALE—REGISTERED BIG TYPE DUROC-Jersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

FOR SALE—TWO PUREBRED DUROC-JERSEY boars, not registered. W. N. W. Blayney, 1729 Arapahoe Street, Denver, Colo.

STOCK HOGS WANTED—WE WANT TO BUY several hundred head of pigs and hogs weighing from 60 pounds up. Let us know what you have for sale. Write Duroc Farms, 412 Cooper Building, Denver, Colo.

BROWN'S POLAND CHINAS—LEADING BIG type strains. Cholera immune. Big bred sow sale February 14, 1920. Descriptive catalog free. Write me. Boars for sale now. J. H. Brown, Box [illegible] Selden, Kans.

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REGISTERED BIG TYPE DUROC-JERSEY boars and gilts by Orión Cherry King XV and out of Defender sows. Reasonable prices and money back if not satisfied. J. O. D. Ranch, Aroya, Colo.

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FOR SALE—560 ACRES WHEAT AND STOCK farm; 140 acres in summer fallowed winter wheat; 220 acres in cultivation; 200 acres in pasture. New bungalow house 24x34; good improvements. All fenced and cross-fenced; also have good cane, millet and sudan grass seed for sale. Almost new Fordson tractor and 14-inch plows. Ray Gotfredson, Buckingham, Colo.

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THE LATEST IDEA IN CANNING FRESH meats, by using an Alexander Home Canner. Address for prices and description, G. W. Alexander & Co., Plattsmouth, Nebraska.

RED CEDAR SPLIT FENCE POSTS—GUARANteed full size and A-1 quality. You pay after unloading. Send for booklet and prices, delivered your station. Kirk Company, Box 1138-S, Tacoma, Wash.

LUMBER

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

TYPEWRITER

GOOD TYPEWRITER FOR SALE CHEAP—FREE trial, easy payments if wanted. Write Bertha Payne, Shawnee, Kansas.

TANNING

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

INVENTIONS

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

GROCERIES AND SUPPLIES

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

HOG MOTORS

HOG MOTORS ENABLE HOGS TO GRIND their own feed. They give satisfaction and save expense. Hundreds are in use. For particulars write to K. B. Porter, 1932 West Second St., Durango, Colo.

TOBACCO

LEAF TOBACCO—THE "CREAM OF KENtucky's Best Crops." A "Bully Smoke or Chew." Five pounds, $3.00; 10 pounds, $5.00, postpaid. Kentucky Tobacco Co., Hawesville, Ky.

AUTO AND TRACTOR SCHOOL

DENVER Y. M. C. A. AUTOMOBILE SCHOOL guarantees satisfaction in teaching these trades: Automobile repairing; tractor operation and repair; oxy-acetylene welding; vulcanizing and tire repair; starting, lighting and ignition; machine shop practice 334 students last year. Tuition fees moderate. Practical work under seven practical instructors. Write today for illustrated booklet. The Y. M. C. A. also conducts splendid preparatory and commercial schools for young men.

TRACTORS

FOR SALE—ONE "RUMELY 30-60" TRACTOR with ten bottom plow and packer and one Emerson "Big 4-30" tractor with right bottom plow and packer. These rigs are practically as good as new at about one-half price if taken soon. J. A. Templeman, Hillsdale, Wyo.

Field Notes

Mr. H. Bert Cave of Littleton, Colo., will have a fine exhibit at the stock show this year. Among his stock will be a fine bunch of Belgian horses. He will also show some of his fine Herefords.

Don't fail to see the Duroc exhibit shown by Mr. Hardman of the Brae Side farm. He is showing some very fine animals, some of which were winners at the State fair this year.

Mr. Welborn of Denver is offering six fine registered Shorthorn bulls for sale. These are all young animals. Read his ad in our Livestock section.

If you are looking for Polled Herefords read the ad. of the Smith Livestock Co., of Chivington, Colo. They have some fine blood in their herd.

Mr. McGillvray of Boulder, Colo., has some excellent Poland Chinas for sale. These hogs carry the prize winning blood of Sampson Over, and Big Tim Again. Both of these boars were grand champions. Read the Sunny Vale farm ad. in this issue of Western Farm Life.

Mr. J. D. Brunton, owner of the Glendale Stock farm of Aspen, Colo., will show some of his famous Polled Herefords at the Stock show. These cattle will be here only the first part of the show, as they are consigned to the big Polled Hereford sale to be held at Des Moines. He will also have a big string of fine Belgian horses.

Mr. Lucore of Arriba, Colo., is selling out, and has some very fine stuff to offer. He has purebred Aberdeen Angus cattle and registered Percheron horses. Read his ad. in the Livestock section.

The Pine Valley Dairy and Farms Co. will have fine top-notch show animals at the show in Denver this year. Included in this bunch will be Our Victory, who will have a milk record of 15,000 lbs by that time.

Mr. Joseph Janner of the Valley Home Jersey farm at Elbert, Colo., has some of the finest Jerseys to be found in the West. His herd sire has an exceptional breeding. Look up his ad. on one of the Livestock pages this issue.

The Sneffels Land and Cattle Co., of Ridgeway, Colo., are entering some of their famous Fairfax blood in the Stock show this year. They have some of the best breeding in the state. Read their announcement on our Lifestock pages.

Mr. Purvis of Johnstown, Colo., has a yearling bull and some bull calves for sale. See his ad. on our Livestock pages of this issue.

The Durocs will be well represented at the Stock show by the El Paso herd from Colorado Springs. Read the announcement of Mr. Brauer, the owner, in our Livestock department of this issue.

Mr. Sam Ball of Wray, Colo., will have thirty head of Shorthorns entered at the Denver show this year, and will offer them for sale during show week. His ad. appears in our Livestock pages.

Most people interested in purebred Holsteins know the high quality of the L. C. Donley and Sam Hansen herds. They announce in this number the sale of 15 of their best females at the Holstein auction at the Stock Show.

Mr. Judson Solomon of Olathe, Colo., will have a good exhibit at the Stock Show. Mr. Solomon is breeding fine Durocs of the Orion family, and has some for sale at the present time.

Mr. J. H. Brown of Selden, Kans., announces a public sale of Poland-China hogs from his herd to be held at Oberlin, Kans., on February 14th. He is offering some fancy stuff, and it will pay you to attend the sale.

Mr. M. E. Penrose of Denver will have 50 head of fine females consigned to the Holstein sale that will be held at the Stock Show Pavilion on Friday of Stock Show Week. This is a chance to get some real class in Holsteins.

Mr. Foster of the Wallie Farm in Englewood, Colo., will have a creditable exhibit of Holsteins at the Stock Show. He has some young stuff for sale at the present time.

DON'T FAIL TO SEE
DALY'S DUROCS
At the Denver Show
We Want to Meet You
DR. F. T. DALY
Cambridge, Nebraska

William Upp
Breeder of
BIG TYPE POLAND CHINA HOGS—HERD HEADED BY BIG JUMBO, Missouri Prince, Cotton Wood King, and others.
Spring Boars and Gilts for sale.
Deer Trail - - Colorado

WYNNEWOOD RANCH
Big Type Poland China Hogs
For Sale—Two young boars, sired by the Sensational Big Bob Wonder. Also some weanling pigs of both sexes, including several of a litter from the Junior Champion Gilt, Denver Stock Show, 1919.
C. E. GORDON, Mgr., Overland, Colo.

H. C. DENNIS, Auctioneer
FORT MORGAN, COLORADO
Registered Shorthorn and Jersey Cattle
Real Estate Sales Conducted. I can sell your real estate if it can be sold.
Wire at my expense for dates.
Phone: Res. Morgan 155J; Office Morgan 15

DUROC JERSEY BOARS AND GILTS
of March farrow, sired by Big Bone Wonder, First Prize Junior Yearling at Iowa, 1918. September boars and gilts (weaning) for sale NOW—sired by a son of Joe's Orion King, a World's Champion. Dams are prize winners at Denver National. Well grown and smooth individuals.
AUGUST F. BORGMANN
R. F. D. 1, Box 124 Longmont, Colo.

LA MARIPOSA
The Carr W. Pritchett Ranch,
Steamboat Springs, Routt Co., Colo.,
has for sale at this time 12 fine bulls from 9 to 20 months old. Sired by LOYAL STAMP. Priced right. Great-grandsons of Whitehall Sultan.

Boar Pigs For Sale
High class individuals of January and March farrow—will make exceptionally good Herd Headers. Prices in accordance with stock.
State Fair Winning Blood is mixed thru our entire herd. Inspection invited, or write
THE DEMING RANCH, Oswego, Kan.

THE HEREFORD CORPORATION OF WYOMING

Ranch Six Miles From Cheyenne, Wyoming

Registered Herefords Exclusively
Anxiety Bred

We have on hand two carloads of coming 2-year-old bulls in fine condition for service. Several cars extra good yearling bulls for sale. Write us for prices and detailed information.

OFFICES
First National Bank Building, Cheyenne, Wyo.
406 New Live Stock Exchange Building,
Union Stock Yards, Denver, Colo.

RAYMOND S. HUSTED, Manager

WM. J. ROSSMAN, Ranch Superintendent JAMES C. ADAMS, Salesman

L. G. DAVIS HEREFORDS

ANXIETY-BRED

Wyoming 4th

Sires in service:

The great BEAU CARLOS 2D 352001, sire of Wyoming and many other winners.

BONNIE WESTON 558495, son of Bonnie Brae 15th.

WYOMING 4TH 603868, champion senior yearling bull of 1919 Denver show; sired by the grand champion Wyoming.

We have a few highclass yearling bulls for sale. Ranches at Saratoga, Wyo., and Denver, Colorado.

L. G. DAVIS SARATOGA, WYOMING

PAINTER HEREFORDS

800 Head of Selected Registered Herefords in Herd

Our cattle have sold in every state from Indiana to California, Texas to the British possessions, also to South America. There is a reason—they always make good. If they don't we will.

We are prepared to fill orders for choice yearling bulls, bull calves and young females at very moderate prices.

Write us your wants, or better still, come and see our cattle.

Be sure and see our show and sale cattle at the Stock Show.

JOHN E. PAINTER & SONS, ROGGEN, COLO.

Milking Shorthorns

THE OTIS HERD

To Dairymen:

Use a milking Shorthorn bull on your grade dairy cows and produce a good beef animal without loss of milk production.

Prominent winners, Denver Stock Show. Bulls for sale at reasonable prices. Headquarters Willoughby, Ohio.

Write for prices to our branch herd.

S. G. ROSE, Mgr.
Pine Valley Farms
COLORADO SPRINGS, COLO.

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.

C. F. Burke, Mgr. Pueblo, Colo.

Send for our new illustrated leaflet on

THE FOREST GLEN SHORTHORNS

THE CORNFORTH LIVESTOCK COMPANY
Elbert, Colorado

JEWELFIELD FARM

Big Type Poland Chinas

A few choice young Boars and Gilts for sale.

You will find no better blood lines anywhere.

Priced Right

L. L. MATHISON Ft. Morgan, Colo.

HOLSTEIN BULL CALVES

We have for sale some mighty good ones with fine advanced registry backing. Prices from $150 to $500. Write us.

PAHGRE VALLEY RANCH
Montrose, Colo.

LaBELLE RANCH

Home of Cherry Chief

Sire of many of Colorado's Prize-winners, has a nice lot of choice spring and fall pigs by this great boar.

Also some sows bred to Cherry Chief for sale.

H. G. SQUIBB AURORA, COLO.

COL. H. C. JENNINGS

Pure-bred Livestock

AUCTIONEER

Also conduct Sales of Real Estate

534 17th St.
Denver, Colo.
Phone M-6870

Straight and Polled Shorthorn Cattle

Valentine's Last X12316 452005 at head of beef herd. Claywood White 427350at head of milk type.

STATE INDUSTRIAL SCHOOL
Golden, Colorado

PUBLIC SALE

J. H. BROWN'S 6TH ANNUAL POLAND-CHINA SALE

SATURDAY, FEB. 14TH, OBERLIN, KAN.

A great offering from America's leading breed of swine.

35 HEAD OF STRICTLY BIG-TYPE PRIZE-WINNING STRAINS

All cholera-immuned by double treatment. Three grand tried sows, including Superbas Wanted, by the Panama-Pacific Grand Champion, Superba. This is perhaps as large a sow as will be sold in the West this winter. These sows bred to Black Cloverdale 69507s, 259661a for March farrow. The opportunity of a lifetime for the man desiring to establish a great herd.

Twenty-seven big, smooth spring gilts—the 300 to 350-pound kind, bred to Buster Again and Western Giant for March and April farrow. Real brood sow material with many show prospects among them.

Also 5 boars ready for immediate service.

On account of better accommodations, sale will be held in Oberlin, the county seat. Parties from a distance entertained free.

Breeders, Farmers, Pig Club Boys—all interested in good hogs—cordially invited.

Write for Catalog, and Plan to Attend the Sale.

J. H. BROWN ROUTE 5 SELDEN, KANS.

Choice Offering of

Poland China and Duroc Jersey Sows

Bred and Open

Young Shorthorn, Hereford and Holstein Bulls at attractive prices.
Hampshire Ram Lambs by Imported Ram.
Two-year-old Cotswold Ram. Winner at Denver.

Write for prices and descriptions

ANIMAL HUSBANDRY DEPARTMENT

State Agricultural College, Fort Collins, Colorado

JERSEYS

Western Home of The Majesties

We have a yearling bull by Majesty's Oxford Combination, out of an Imported cow, in R. M., solid color, a corking good calf, will make an attractive price on for quick sale.

Also a January calf, sired by a 700-pound butter bull, out of a R. M. daughter of Count Majesty, that is hard to beat; very low price to move at once.

A few good Duroc gilts, either bred or open. Write me your wants, please.

A. M. McCLENAHAN GREELEY, COLORADO

SPECIAL SALE OF SPRING PIGS

Big Type Poland China

TO BE SHIPPED AT WEANING TIME. WRITE US, OR COME AND INSPECT OUR HERDS AT

THE HOME OF "BIG SENSATION"

The world's largest Hog—Weight 1204 lbs.

A. J. EHRHART & SONS, NESS CITY, KAN.

FOR SALE

PUREBRED ABERDEEN-ANGUS CATTLE

Owing to crowded pasture and change of business I am closing out my entire herd of

Angus Cattle and Percheron Horses

I still have 35 head of females and bull calves of first class quality.

Also a good bunch of registered Percheron mares, all ages, some coming 2-year-olds, and our aged stallion.

This livestock will be priced right if taken at once.

G. F. LUCORE Arriba, Colo.
On Rock Island Railroad

Holsteins for Sale

We have a large number of Holstein Cows and Calves. Also some young registered Champion DeKol Bulls, from $150 to $500 each. These are descendants of the famous Dr. Work herd of Pueblo, Colo.

WOLHURST FARM
Littleton, Colo.

Polled Herefords

Double Standard

Herd Headed by Polled Dude 2nd 11187, 612340

Beau Donald, P. Plato and March On Blood in the Herd

SMITH LIVESTOCK CO.
Chivington, Colo.

Facts in BLACK & WHITE

How a Purebred Holstein Bull Will Make Money For You

The Iowa Experiment Station recently conducted an experiment under the direction of Prof. L. S. Gillette. A purebred Holstein bull was mated to scrub cows and the resulting heifers were bred to another purebred Holstein bull.

Here's what happened—

Dams' Average Yield—3,255 lbs. of milk, 161 lbs. of fat.

Daughters' Average Yield—6,313 lbs. of milk, 261 lbs. of fat.

Granddaughters' Average Yield—11,295 lbs. of milk, 431 lbs. of fat.

In other words, the daughters of the purebred Holstein bull averaged:

94% MORE MILK
62% MORE FAT

than their dams, and his granddaughters averaged

245% MORE MILK
168% MORE FAT

than the original scrub dams.

The short cut to greater dairy profits is a purebred Holstein bull.

Think it over!

Send for free booklets.

THE HOLSTEIN-FRIESIAN ASS'N
186 Hudson Street
BEATTLEBORO, VERMONT

BIG-TYPE

REGISTERED

DUROC-JERSEY HOGS

QUALITY STOCK

GREEN ACRE FARM

6TH AND WADSWORTH

DENVER, COLO.

H. W. J. EDEBROOKE, Owner

LAST CALL!!
Duroc Sale at Denver!!

The big Duroc event of Colorado will be the Colorado Duroc Breeders' Association Sale AT THE NATIONAL WESTERN STOCK SHOW,

Tuesday, Jan. 20, 1920

Sale in the Swine Judging Ring at 1:30 Sharp

If you want to be a successful Duroc breeder, get the best. You will find them in this sale. Some of them have been placed high in the awards by our best judges at good shows. Future usefulness and breeding ability has been given due consideration in selecting for this sale. The most popular blood lines of the Duroc-Jersey breed are represented—Pathfinders, Sensations, Orion Cherry Kings.

Don't overlook the boars. Some great herd boar material and show prospects. Twenty-three real sows bred to well-known Western boars.

Remember the Date
January 20, 1920

Write for catalogue to the Sale Manager, C. F. Burke, Pueblo, Colorado.

Field Men:
R. C. Ashby, Duroc Bulletin, Chicago
H. A. Lindgren, Western Farm Life, Denver

Managing Committee:

C. F. Burke **Caldwell Martin**
George E. Morton

COL. FRED REPPERT, AUCTIONEER

SAM BALL SHORTHORNS

Wild Eyes Prince 208731, at 3 years old; weight, 2,700 pounds. This bull was shown by me at the Second Annual Denver Stock Show

Herd Sire, Sandy 387323

the Great Son of Avondale, the Champion Shorthorn of America, who was sired by Whitehall Sultan, thus tracing the blood back to the Great Cub Bear, the greatest bull ever imported to America.

Better Goods, the son of the Grand Champion, Choice Goods, is the sire of some of the dams of my herd. You can get no better pedigrees anywhere in America.

30 BULLS FOR SALE

I will have 30 bulls of the above top-notch breeding for sale. These animals will be entered in the Stock Show. They are rugged, well-built individuals suited to the needs of the Western cattleman.

WRITE ME FOR SHORTHORNS

SAM BALL **WRAY, COLO.**

MILKING SHORTHORNS
That Do Milk

OFFICIAL RECORDS: Cows tested under farm conditions. Run out with herd, milked but twice daily, housed only at milking time. Under these conditions three cows have exceeded 10,000 pounds and one exceeded 8,000 pounds with first calf this year. Eleven have qualified for Record of Merit. Nine now on test.

SERVICE BULLS: Duke Glenrose 410244. His six nearest dams, all in the Record of Merit, average 11,517 pounds, an average not exceeded by any bull in service in the United States today.

Lee Buttercup 316631, son of Charlotte B., 15,401 pounds in one year, and an eight-year average of 10,118.4 pounds—a world's record.

Duke Oxford 583991, son of Oxford Annie, R. of M., 8,313 pounds.

WE MAY HAVE WHAT YOU NEED
SEE OUR EXHIBIT AT THE WESTERN STOCK SHOW

THE BONVUE FARMS COMPANY
C. H. HINMAN, President **Stockyards Denver, Colorado**

DON'T PASS MY PENS

at the NATIONAL WESTERN STOCK SHOW, DENVER, without stopping to look over my splendid exhibit of Durocs, including the FIRST PRIZE FUTURITY LITTER of COLORADO, 1919.

Also my great young herd boar, sired by the $10,000 Jack's Orion King 2nd.

Choice boars, open and bred gilts for sale at farmer's prices, some of which were prize-winners at Colorado State Fair.

BRAE SIDE FARM
E. D. Hardman, Owner **R. F. D. 1, Pueblo, Colo.**

HOLSTEIN BULL CALVES
Seven Registered Holstein Bull Calves for Sale

These are from A. R. O. Dams, and dams with excellent unofficial records. Prices that will interest you.

If interested, inquire at our exhibit at the Stock Show, or at

WALLIE FARM
W. G. FOSTER, Owner
4800 South Pennsylvania **Denver, Colorado**
Phone Englewood 122

ATTENTION, HOLSTEIN BREEDERS
L. C. DONLEY AND SAM HANSEN

Have consigned 15 Registered Female Holsteins of Pontiac and Ormsby breeding to be sold at the Public Auction in the Arena during the National Western Stock Show—

Friday, January 23rd

Several Heavy Springers, one 30-lb. Bull; best stock they ever owned.

THIS IS YOUR CHANCE

BEAU ASTER

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER
Holyoke, Colo.

Milking Shorthorns

Straight Bates Shorthorns are as rare as buffalo, but they are the true foundation of Milking Shorthorns.

We announce recent importation from Kentucky of 13 Straight Bates breeding cows to increase our Bates herd. These cows are not for sale.

We also imported 3 Straight Bates Bulls and have 20 Straight Bates and Bates-topped bulls ready for spring sale. Choice will be given as orders are received.

THE CARPENTER CATTLE COMPANY
GREELEY, COLORADO

Red, White and Roan Shorthorns

For Sale

6—Registered Bulls—6

From 12 to 20 Months Old

J. F. WELBORN
Boston Building **Denver, Colo.**

Registered Breeding Bulls and Heifers Herefords Shorthorns

Young stock of both sexes for sale at all times. Our sales yard is located within two blocks of The Denver Union Stock Yards. We are pleased to show our stock at all times.

THE LOWELL PUREBRED CATTLE CO.
Union Stock Yards, Denver

SNEFFELS HEREFORDS

Verdun Fairfax

Our Herd Bull, son of Perfection Fairfax, out of a Beau Real cow.

At the Stock Show we will enter one junior yearling bull by our herd bull, Verdun Fairfax, he by Perfection Fairfax, calf's dam Miss Disturber 19th, she by Disturber's Lad 12th. Further entries consist of two senior yearlings, Amos Fairfax by Perfection Fairfax, dam Gaylass, she by Prime Lad 16th, and Clem Fairfax, he by Brummell Fairfax, next to Perfection Fairfax McCray's chief stock bull. This calf is out of a Corrector Fairfax cow.

THESE YOUNG BULLS WILL BE FOR SALE

In addition we will have a limited number of range bulls of the same general breeding for sale.

We showed 11 head at the Western Slope Fair, 1919, taking all ribbons and Grand Champion.

If You Want Fairfax Blood, Write

The Sneffels Land and Cattle Co.

STERLIN ROHLFS, Mgr. **Ridgway, Colo.**

Our cattle are raised at an altitude of 8,400 feet, making them rugged and especially suited to the needs of the cattlemen of this territory.

Western Ascalon

318203

A Grand Champion

She is Colorado's Greatest Dairy Heifer in the Official 30-Day Division, and is now on yearly test.

She is the daughter of a Grand Champion Bull, and a daughter of Colorado's Greatest Dairy Cow.

Western Ascalon freshened October 16, 1919, and commenced her official record 8 days later. She gave in 30 days 2,813 pounds of milk, making 98 pounds of butter.

This is the highest milk and butter record in the State in the 30-Day Division, senior 3-year-old class, for any breed. Her milk yield distances all yields of milk in the 30-day official Division for all breeds except one.

Dozens of times during the past ten years we have demonstrated in the show ring and in the milk and butter record classes that we were the breeders of the Correct Thing in Holstein-Friesian Cattle—and again we have demonstrated this fact.

YOUNG BULLS FOR SALE

WESTERN HOLSTEIN FARM

HALL BROS., Props.

Breeders of the Correct Thing in Holsteins

BOX 2, SOUTH DENVER STATION DENVER, COLO.

W. A. PURVIS FARM

SNOW BOY DE KOL ORMSBY 121079

The Herd Sire

SOME OF OUR RECORDS

An A. R. O. daughter of our herd sire with a record of 16.64 pounds of butter from 363.3 pounds of milk in 7 days as a 2-year-old. Other daughters being tested now.

Rocabie Johanna Clyde with a record of 788.5 pounds of butter from 17,282 pounds of milk in 365 days.

Blood of the famous Pontiacs, De Kols, Ormsbys and Johannas run through our herd.

ONE YEARLING BULL AND FOUR BULL CALVES

For Sale

W. A. PURVIS **JOHNSTOWN, COLO.**

THE EL PASO HERD

J. W. BRAUER, OWNER **COLORADO SPRINGS, COLO.**

Our Herd Headers Are:

Illustrators Chief, Pathfinders Orion, Colorado's Chief Sensation

We have won more Firsts and Grand Champions than any other Duroc Breeder in Colorado during 1919. Our winnings include Grand Champion Boar at the Denver Show. These records are positive proof of type and quality.

Illustrators Chief is the foundation of the herd, followed by the great Grand Champion, I Am A Pathfinder, the boar that sold for $3,000. I now have Pathfinders Orion, a March pig that won the Junior Champion at the State Fair against 50 head. He will be assissted by Colorado's Chief Sensation, one of the best bred individuals in the West. He is closely related to Great Orions Sensation, the World's Grand Champion.

I AM OFFERING FOR SALE

75 head of summer and fall pigs and bred sows and gilts

Woodlawn Breeding Farm

H. BERT CAVE, Prop., Littleton, Colo.

Breeder of Purebred Livestock

BELGIAN HORSES **DUROC-JERSEY HOGS**
HEREFORD CATTLE **BRAHMA CHICKENS**

I will exhibit at the Stock Show five Registered Belgian Mares that weigh over 10,200 pounds, and a top-notch Imported Belgian Stallian. This stallion and a few of the mares will be offered for sale.

Fifty Purebred Heifers and 50 Bull Calves will be shown at the Show and offered for sale.

I have a 5,000-acre ranch at Parker, Colo., devoted to Hereford cattle. Have 150 purebred cows for sale at present—some of them registered.

YOUNG STOCK ALWAYS FOR SALE

HOG HAVEN HERD

DUROC-JERSEYS

Our Herd Boars are Orions Pal 174629; and also a son of Golden Model 8th.

Our herd is strongly bred in Orion Cherry King blood. Our Spring pigs trace three times to Orion blood. We are breeding for Large Boned, Quick Maturing Animals.

BOTH SEXES FOR SALE

Breeding Stock Shipped on Approval

MEET ME AT THE DENVER STOCK SHOW

JUDSON SOLOMON **OLATHE, COLO.**

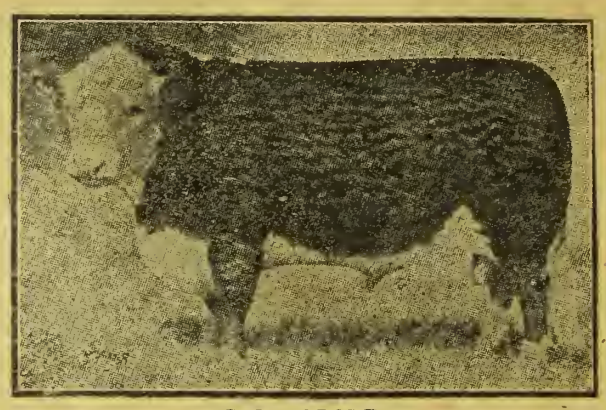
THE GLENDALE STOCK FARM

Headquarters for the Best in

Belgian Draft Horses and Polled Hereford Cattle

IRVINEDALE ROWDY
Undefeated Champion of America, 1917

The Glendale Stock Farm is located on the Western Slope of the Rocky Mountains, at an altitude of 8,000 feet, giving our stock exceptional constitution, scale and vitality that insure their thrift in a lower altitude. Tuberculosis is unknown in our herd.



ECHO GROVE
The Greatest Polled Hereford

We are consigning to the Colorado State Horse Breeders' Association Sale, to be held in Denver during Stock Show Week, five head of REGISTERED BELGIAN HORSES. One 3-year-old stallion; one 3-year-old mare, bred to IRVINEDAL ROWDY; one 2-year-old mare bred to IRVINEDALE ROWDY; one 1-year-old filly. All by the GRAND CHAMPION, SANS PEUR. One weaner filly by IRVINEDALE ROWDY. These horses will be on exhibition at the National Western Stock Show, where we will be glad to show them to you before the sale.

We are consigning to the Polled Hereford Association Sale, to be held in Des Moines, Iowa, February 2nd to 6th, ten lots of outstanding Polled Herefords—3 bulls, 3 cows and calves, and 4 heifers. These cattle will be in Denver being tested the first part of Stock Show Week. Look them up in the Lowell Pure-bred Cattle Company's barns. This will be a good many breeders' first opportunity to see together this many representatives of the NEWEST AND MOST POPULAR BREED OF BEEF CATTLE ON EARTH. Don't put off looking them up, as they will only be in Denver the first part of the week.

J. D. BRUNTON, PROP., ASPEN, COLORADO

Victory 238500

SUNNY VALE FARM

Poland-China
Herd Headers
SAMPSON OVER
BIG TIMM AGAIN

Sampson Over is the son of Mc's Sampson, the Grand Champion at the International 1916.

Big Timm Again is a grandson of Big Timm, a Grand Champion owned by Wm. Ferguson of Scribner, Neb. This boar has made a great record.

Sampson Over has been shown only twice—winning Grand Champion at Boulder County Fair and Reserve Champion at State Fair.

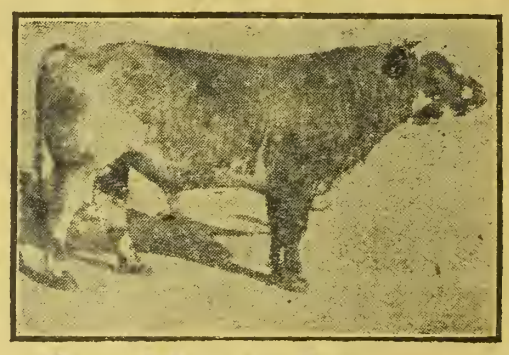
Other show animals of this herd are Bessie Orphan and Victory, both from the McKelvie herds of Fairfield, Neb.

CHOICE BOARS AND BRED GILTS FOR SALE

A. D. McGILLVRAY

BOULDER COLORADO

ROAN PRINCE



Heads Our Herd

He is the son of Imported British Prince, and the grandson of Imported British Rose, who had a milk record of almost 11,000 pounds.

We will have 9 show animals at the National Western at Denver, including Our Victory, who will have a milk record at that time of approximately 15,000 pounds—4.5% fat.

Ten Head of Junior Bulls For Sale

ALSO A FEW COWS AND HEIFERS

The Pine Valley Dairy and Farms Co.

Colorado Springs, Colo.

NEGRO
No. 131780 (113149)

Percheron Stallions and Mares FOR SALE

CHAMPAGNE
No. 51753 (65402)

Sure Breeders
Sound
Bone and Fine Quality
Colorado Acclimated

ZANG'S ELMWOOD STOCK FARM

Department H, Broomfield, Colo.

The Adolph J. Zang Investment Co., Owners

VALLEY HOME JERSEY FARM

ELBERT, COLO.

Herd Sire
VALLEY HOME POGIS

Valley Home Pogis 173645

Son of Lass 64th's Son, whose dam, Lass 64th of Hood Farm, won the junior 4-year record by producing 962 pounds of butter from 13,444 pounds of milk. He is a grandson of Hood Farm Pogis 9th, sire of more daughters in the R. of M. than any other bull. His half-brother, Hood Sophie Tormentor, sold for $5,000.

His dam, Hood Farm Olinda Pogis, has a R. of M. record of 536 pounds of butter from 8,627.9 pounds of milk at 2 years old, and 850.59 pounds of butter in one year from 15,202 pounds of milk at 6 years old. A. J. C. C. Gold Medal Winner in 1913.

He is a great-grandson of Sophie 19th of Hood Farm, World's Champion Long Distance Dairy Cow.

NO BETTER JERSEYS IN THE WEST

PURE BRED DRAFT HORSE SALE

Stock Show Week

IN THE STOCK SHOW PAVILION THURSDAY, JANUARY 22—10 A. M.

Fifty head, including the pick of the Best Percheron and Belgian Herds of the State will be offered. These Horses are consigned by the representative horse breeders of the West.

The Pure Bred Draft Horse is in great demand right now, and is bringing top-notch prices. It is interesting to note that for the twelve months ending October 21st, 1919, the Percheron Society of America exported 752 head to Canada alone. If you are interested in the Draft Horse, don't fail to attend this sale.

SOME OF THE OFFERINGS
MARES

Excellent yearlings and 2-year-olds of Chace's King Pink.

Betty, the Grand Champion of last year's Denver show, daughter of Champagne, and now in foal to Negro.

Four mares in foal to Champagne.

Charnille, former Grand Champion at the International, and also Grand Champion at Colorado State Fair, 1918, and second in aged mare class at Denver, 1919.

Some daughters of Casino and Calypso.

Several mares bred to Irvinedale Rowdy.

Two fillies by the Grand Champion, Sans Peur.

One filly by Irvinedale Rowdy.

STALLIONS

A few stallions will be offered, including Elwood Robespierre, the yearling that has been a winner at every place he has been shown this year, and a fine 3-year-old from the Glendale Farm at Aspen, Colo.

The above-mentioned animals will give you an idea of the choice, high-class stuff that will be offered at this sale.

THIS IS YOUR RARE OPPORTUNITY

to buy brood mares and stallions, and to secure draft power and a foundation for breeding stock.

THE CONSIGNORS

ADOLPH J. ZANG, Broomfield, Colo.
E. A. CHACE, Fort Morgan, Colo.
J. D. BRUNTON, Aspen, Colo.
CLARENCE BIXLER, Boulder, Colo.
WENZEL BLACH, Yuma, Colo.
H. BERT CAVE Littleton, Colo.

SEND FOR CATALOG—ADDRESS

COLORADO PUREBRED DRAFT HORSE ASSOCIATION

SALE MANAGER **944 MARINE ST.** **BOULDER, COLO.**

BIG HOLSTEIN SALE

STOCK SHOW PAVILION, FRIDAY, JAN. 23d,
9:30 A. M. SHARP

There are 50 head to be sold in THREE hours—we will have to hurry!

"THE FIRST FIVE ARE ALWAYS THE CHEAPEST IN THE SALE"

Mostly females will be offered—all young and sound, and of the very best breeding and type. Some with fine records, and sold subject to test.

ONE 32-POUND BULL OF SHOW TYPE

and several daughters of producing sires. Practically all are Colorado bred, which means vigor and constitution.

THIS IS THE MOST DESIRABLE LOT EVER CONSIGNED TO THIS SALE

If you are looking for Holsteins of the very best type, and individuals that will meet the requirements of the cattlemen and breeders of the inter-mountain West, you should make it a point to be at this sale, and DON'T FORGET THE DATE. COME EARLY!

9:30 A. M., FRIDAY, JANUARY 23RD, 1920

THE HOLSTEIN CLUB

M. E. PENROSE, in Charge of Sale

50 REGISTERED
SHORTHORNS
WILL SELL AT DENVER
WEDNESDAY FORENOON, JAN. 21, 1920
IN THE ARENA AT
THE NATIONAL WESTERN STOCK SHOW

30 BULLS AND 20 FEMALES picked from the leading Western Herds. They will all be acclimated. They are the kind that will make more beef of better quality. There are bulls and foundation females that will be suited to the exacting requirements of the most critical breeders. There are others that will best serve the needs of farmers and ranchmen.

It was a load of **COLORADO SHORTHORN YEARLING STEERS** that made the world's record for feeders at Denver last January, **selling for $20.75 per cwt.** At the **INTERNATIONAL JUST CLOSED** the **SHORTHORN CARLOTS** sold for higher average prices than **ALL OTHER BREEDS.** At Omaha in December **SHORTHORNS MADE THE RECORD FOR THAT MARKET FOR ITS ENTIRE HISTORY,** selling for 20c per pound, and the same week a **CARLOAD OF SHORTHORN STEERS TOPPED THE KANSAS CITY MARKET at $19.50.**

IT PAYS TO GROW SHORTHORN BEEF

You get size and quality both; and don't ever forget that they pay for both at the markets.

Catalogs will be distributed early the week of the Show. The cattle sold will conform to the sanitary regulations of the various states, and under the breeding guarantee adopted by this Association.

AMERICAN SHORTHORN BREEDERS' ASS'N

13 DEXTER PARK AVE. **CHICAGO, ILL.**

WESTERN FarmLife

Vol. XXII. *Denver, Colorado, January 15, 1920.* *Semi-Monthly*

GIVE THE FARM BOY A COW TO RAISE.

ALADDIN READI-CUT HOMES

Reduce High Building Costs

SAVE THE WASTE AND REDUCE THE COST—The Aladdin System scientifically prepares the materials and conserves the labor. You can save 18 per cent on the cost of the lumber and 30 per cent on the cost of the labor. Certified records of thousands of Aladdin Homebuilders in every state prove these statements. You can prove these statements for yourself, for there is an Aladdin Home near you wherever you live. Fourteen years' success of the Aladdin System of construction have firmly established its many advantages. THE LUMBER THAT'S WASTED COSTS JUST AS MUCH AS THE LUMBER THAT'S USED. The only possible way to reduce present high prices of lumber and labor is to save the usual waste. The Aladdin System prepares all the lumber in our mills ready to be nailed in place. Waste of lumber is reduced to less than 2 per cent. Cost of labor is reduced 30 per cent. One man will do in six days, with Aladdin Materials, what it requires ten days to accomplish without Aladdin's System. The book, "Aladdin Homes" sent free to prospective builders, explains this completely and thoroughly.

AVOID LUMBER SHORTAGE---BUILD NOW

Lumber shortages—a virtual famine of lumber—exists in many parts of the country. Reports indicate it is impossible even now to get material for certain needs. Stocks were never as low as they are now. The demand was never as great as it is now. THIS MEANS STILL HIGHER LUMBER PRICES. It means that prices will go upward rapidly —that it will possibly take $150 in six months or a year to buy $100 worth of lumber. Will you be forced to pay these prices? Will your need for a home in six months cost you a 50 per cent or a 100 per cent penalty?

Four Greatest Forests in Country Are Aladdin Lumber Yards

The Aladdin lumber yards are the four greatest forests of the United States. Each one has sufficient standing timber to take care of the needs of the country for many years. The possible lumber famine predicted in all parts of the country will not affect the Aladdin Co. Every Aladdin Home manufactured in 1920 will be shipped quickly and completely. No shortage of a few grades of material from the Aladdin house order. No hold up on the job on account of lack of material.

Build Now--Don't Delay

Early buyers of Aladdin Homes are assured delivery. Aladdin buyers are also assured a big saving—from $300 to $1,000. BUT quick action is necessary. The enormous demand for homes will soon fill the Aladdin Mills to capacity. Your order will possibly be too late. An important message to every builder is contained in the Aladdin catalog. It is the message to you from the world's greatest homebuilding organization. Send for this book today.

20 ft. Lumber from 16-ft. Board

The Aladdin System of Homebuilding has been practicing for 14 years the principle the world has only learned during the war—the elimination of waste of lumber and labor. The Aladdin Book explains this system thoroughly, shows how 20 feet of lumber is cut from a 16-ft. board. The great Aladdin Organization composed of experts in every branch of homebuilding, stands ready to help you build your home at a saving. Put this group of experts to work on your problem. Send for the interesting book "Aladdin Homes," No. 1879.

Aladdin Houses Complete

The Aladdin Book of Homes has a message for you. Amongst its pages, profusely illustrated in colors, leading home designs are represented to you. Aladdin houses are cut-to-fit as follows: Lumber, mill-work, flooring, outside and inside finish, doors, windows, shingles, lath and plaster, hardware, locks, nails, paints, varnishes. The material is shipped to you in a sealed box-car, complete, ready to erect. Safe arrival of the complete material in perfect condition is guaranteed. Send today for a copy of the book, "Aladdin Homes," No. 1879.

THE ALADDIN CO., Portland, Ore.

Branches Bay City, Michigan. Wilmington, N. Carolina. Hattiesburg, Mississippi. Toronto, Ontario, Canada.

THE ALADDIN COMPANY.

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Largest Circulation of Any Farm Magazine in the West

WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Published Semi-Monthly by The Farm Life Publishing Co., Denver, Colo. 1518 Court Place.

:::

Entered at the Denver Postoffice as Second Class Matter

VOLUME XXII. DENVER, COLORADO, JANUARY 15 1920. Number 2

A Modern 64-Page Two-Color Hoe Perfecting Press

DESCRIPTION OF MACHINE THAT NOW PRINTS WESTERN FARM LIFE.

W. S. EDMISTON, Publisher.

TAKE a look at the new press which is now printing Western Farm Life. I can only show you a picture of it now, but when you are in Denver come and see us in our new home at 1518 Court Place, opposite the Denver county courthouse. I am as proud as the farmer when his new barn is finished. He wants everybody to take a look at it, to see what a fine lot of fancy stalls he has put in for his horses and cattle and what a big hay mow he's got. Well I've got something big to show you—bigger than a threshing machine, and it cost a deal more too.

It is a modern Hoe 64-page two-color perfecting press. Growth of Western Farm Life—your patronage for which we are grateful—made this press a necessity. Heretofore Western Farm Life has been printed under contract on what are known as flatbed presses, but the job got so big that this style of equipment could not handle it economically. I went east just three months ago and picked out the type of press that was necessary in order to give you a bigger and a better magazine. Just ninety days from the time the decision was made, the new press was installed and ready for business. It is difficult to appreciate just what this means unless you have been through it, but let that pass—the job is done and hereafter Western Farm Life will be able to give you better service, and that's what counts.

You will be interested in a few technical details. I have said that it is a 64-page two-color perfecting magazine press, but 64 pages is not its full capacity. It will print as high as 96 pages in a single run, when only black ink is used. The press prints from a roll, and folds, stitches, trims and delivers the magazines at the rate of 4,500 an hour. Each page of the magazine, after being set up on the linotype machine, is put through an electrotyping process and electrotyped plates go on the press in curved form, similar to the plates used on the large modern newspaper presses. Newspaper presses, however, print from stereotype plates which do not give as good results in printing illustrations as is secured through the electrotyping process.

Possibly the first work of the new press will not be perfect. It takes time to get the machinery well adjusted. You know how it is when you buy a tractor or a grain separator. The man from the factory comes with the machine and he is supposed to get it into good running order before he leaves, but sometimes the adjustment is not perfect even with the best of attention. These big machines are delicate in their mechanism and it takes actual running to get them in the best working order.

Our motive power is electric current, delivered through a 40 h. p. motor. One pull at the switch and the wheels go humming.

The press is as large as any magazine press west of Chicago. There is none other approaching it in size or capacity anywhere in the mountain or coast states. It weighs 100,000 pounds; took two freight cars to carry the parts. Then a concrete foundation had to be built to support it. Mr. B. M. Phelps, the expert who came with the machine, worked like an architect from a blueprint and under his direction skilled workmen put the thousand parts together. It was interesting to watch it go up.

Under the old system, on an average sized magazine, it required seven operations to go through the process we call "going to press." Now we do that in one operation. The big rolls of paper go in blank at one end and the finished magazine comes out on the other end ready for the mailers.

Yes, these rolls are big; they weigh about 1,200 pounds each and when you figure that paper it sold by the pound, you can imagine that it takes some money just for that feature of the magazine. The rolls are 64 inches long and 28 inches in diameter. They come from storage space in a basement, which is an important part of our new plant, because in these days of paper shortage a publication has to be as careful of its supply as we all were with our coal a few weeks ago. My orders for paper which will be used to print the magazine in the fall of 1920 and spring of 1921 have already been placed with the paper mills in the North. We have to insure ourselves of a supply long in advance of use and at a price which is exactly 100 per cent higher than it was four years ago. A carload of paper costs $3,500 these days and 50,000 copies of the magazine twice a month eat up a good many carloads in the course of a year. Figure the ink, the press room expense, the postage, and the highest price labor there is—skilled mechanics who are experts in their line, and you will get some idea of the cost merely of the mechanical part of getting out a farm journal. This cost is not covered by the subscription price.

The big press is not all the new equipment either. I should mention the Mergenthaler linotype machine which does the type setting. One skilled operator sits at that machine, lightly touching keys that might be compared to those on a typewriter, but are much more delicately adjusted. This man is able with a machine of the kind I have purchased, to set up not only the body of an article, but also the headlines; everything except the very largest type used in advertisements and in the largest sized headlines. The metal which casts the type at the touch of the keys is kept molten by electricity, this being one of the latest attachments for the linotype.

I have been able to obtain a long-time lease on the building and therefore have had it remodeled to suit the needs of an up-to-date publishing house. Constant improvement has been my aim since acquiring ownership of the magazine, and the best evidence that you as readers are appreciative of these efforts is found in my ability to establish such an extensive plant in so short a time as ninety days after the decision was made to seek larger quarters and publish with our own equipment. The job might have been put off with the excuse that "everything is so high now," but we will never get anywhere in restoring the steady flow of business unless we "carry on" as we used to say during the war.

While we are on the subject of improvements I want to call your attention to the editorial changes which are being made. You are all becoming familiar with Mr. Lindgren's work as Associate Editor and Livestock Specialist. He has been getting acquainted with our readers by attending meetings of the various breeders' associations and other farm gatherings, and giving them the benefit of his experience in organization work, gained in the service of the United States Department of Agriculture. I feel that livestock is, by long odds, the most important of the subjects that a western farm journal should handle, because we cannot be truly successful as farmers unless we market at least a part of our crops by feeding them and selling the milk, beef, pork or mutton, retaining the fertility on our lands. This system of agriculture is the one that makes for permanence, therefore, Western Farm Life is living up to its reputation and object as "a Magazine for Western Farmers and Stockmen." My idea is that every farmer is a stockman and every stockman a farmer, because we have all come to the point of realizing that the one crop idea is uneconomical. I am therefore stressing the editorial livestock work which is being carried on under Mr. Lindgren's direction.

This does not mean that any other department of the magazine is to be neglected. We have many interests that deserve close attention, notably the subject of farm mechanics. On this point I have some plans which are not quite ready to announce, but I want you readers to know that we are ready at any time to help you with the many problems that arise concerning the care and operation of your machinery. I know what that means; if you have any doubt about it, look again at the picture on this page and make up your mind that we have our portion of the problems that come with the management of mechanical equipment. This is an age of mechanics and Western Farm Life realizes the importance of this subject to the farmer.

Our household de-

(Turn to Page 23.)

THE NEW PRESS ON WHICH WESTERN FARM LIFE IS NOW PRINTED.

How Sheepmen May Break the Speculator's Hold

IMPROVEMENT OF FLOCKS AND MARKETING THROUGH WOOL POOL.

BY THE SHEPHERD.

COLORADO sheep breeders met at Fort Collins in group session during Farmers' Congress week. There was only a fair attendance of sheep men, but with delegates and others interested in sheep there was a good audience for the various speakers. Prof. J. A. Hill, wool specialist for the University of Wyoming, was first on the program. Prof. Hill has been making a study of wool and wool growing for the past ten years, and is the foremost authority in his line in America.

Prof. Hill said in part "The subject I have taken is 'Culling the Ewe Flock.' We have started that in Wyoming, and it is producing practical results. This culling did not originate with the sheep business, it is something borrowed from the dairy cattle industry. The dairy cattle men have for years been preaching about getting rid of the 'star boarder' of the herd, and the poultry men have been talking the same about the hen who did not pay her way.

"After looking over the sheep proposition thoroughly I became convinced that even the best sheep men are keeping parasite sheep. So we are carrying on this work by giving talks and demonstrations and advising the breeder to get rid of these low producing ewes. As I tell our men the ordinary business man does not keep these ewes for ornaments. Two things should be considered if a ewe is to make you any money; the first is the lamb she should produce, and the second is the wool. If she falls down in either of these you are not getting full value from her.

"We find in Wyoming that 20 per cent of the ewes in a flock are dry ewes. Don't run these dry ewes year after year. The same thing is true of the sheep that does not come up in wool production. We are trying to get people to look at the ewe individuallly, and see whether she is really paying her board. When you buy sheep look every one over. Do not look only at the ewe's mouth. I tell our Wyoming men that if a ewe is not paying him a profit the better mouth she has the worse off he is. She eats more. If the teeth are worn down they are not good for range sheep, but they will probably make good farm sheep.

"You men who handle small bunches should look at the wool. Ordinary range wool is worth from 60c to 70c per pound. In order to judge how much wool a sheep has, the best time to get it is just before shearing. Judge the length, evenness and weight. Weigh each fleece, and if it is away down, market the ewe as soon as possible, and do not let her live to produce light-fleeced lambs. Study the buying of wool, and soon you will have a standard. The average weight of a fleece in Wyoming is 8 pounds, but there is no reason why it should not be 10 pounds. Wool is worth looking after these times. Two pounds of wool at 50c per pound may mean all the difference between loss and a good profit.

"In judging the fleece the first thing to look at is the density. Do not think that short wool has the most density. The fleece with the longest fibres will naturally feel more open on account of the tips being further from the sheep's body. If you can see a wide strip of skin when the fleece is parted the wool is not dense. The less skin you can see when parting the fibres, the thicker the fleece. The next thing is the length. Sometimes you can add 5 or 10 cents or more to the value of a pound of wool by having it long. Wool 2½ inches long or better is worth something like 70c. If it is two-thirds of that length you get 10 per cent less per pound. I am not so much interested in trying to grow two fibres of wool where one grew before, as I am in growing three inches of wool where two grew before. The third point to notice is evenness. This is pretty easy to see up to a certain degree. One thing to watch for is that a sheep does not have a lot of hair along the neck and around the mouth and tail. Weed out your flock inthis way, and you will have a flock that will pay. Breed your best and most suitable ewes to a good ram. Grade your flocks for breeding. Do not pay a big price for a pure-bred ram and put him with a flock of scab ewes. It is a waste of money."

What Colorado Is Doing.

Prof. C. I. Bray of the Colorado Agricultural College, spoke next on the marketing of wool.

"The marketing of wool is one of the biggest problems for the wool grower to solve. Western sheep men have not been satisfied that they were getting full price for their wool. Mr. R. C. Allred, former county agent over at Glenwood Springs, made some investigations in his county in 1917. He found that prices often varied as much as 25 per cent on the same kinds of wool, when sold through local buyers. After having their wool graded and baled after the Australian system in 1916, they called for sealed bids on their wool. The prices bid on the wool varied 25 per cent. Either the buyers did not know what the wool was worth or they did not want to pay what it was worth. Fifteen cents a pound on wool makes a good deal of difference, and runs into money on a flock of 1,000 sheep.

"As you know, the government took over the wool clip in 1918, basing the price on the Boston prices of July, 1917. Only the better class of wool warehouses and commission houses were allowed to buy wool at a fixed commission. The wool was to be valued by expert wool graders. Local dealers might be licensed to buy small clips, but their profits were limited to a few cents a pound. In 1917 the wool was markted in the old way largely through local buyers.

"Recently we sent out return postcards to 600 sheep men who run sheep on the forest reserves in Colorado, asking the prices received for their wool in 1917 and 1918. It was remarkable in some cases the increase in price received in 1918, under government supervision, as compared with the 1917 prices. One man got 28c for his wool in 1917, and 61c in 1918, the value being supposedly the same for each year. Differences of 15c and 20c a pound were not uncommon. Two or three men got slightly lower prices in 1918. Others who had been marketing their wool through efficient agencies in years past got 2c or 3c increase. One man who had received as good a price in 1917 had marketed through the National Wool Warehouse, Chicago. The average increase in price reported by 60 sheep men was a fraction less than 10c per pound.

"We tried a local pool here in Larimer county in 1918. We shipped to Philadelphia and got 67c for our wool. We wrote afterwards to different members of the pool, asking what they thought of it. One man wrote in answer: 'I got 67c this year and was very well satisfied, even though I had to wait for the money. The best local bid I got was 45c. Who gets all this difference?' One trouble is that local dealers do not know what they are buying. We had a little experience with the buyers this year in selling the college wool. Local junk men came round soon after shearing, bidding from 40c to 43c per pound. We knew from the reports of the Bureau of Markets at Washington that the wool we had was worth 55c. After we had the wool sacked a Wyoming buyer came through, and insisted on buying it. He cut a hole three inches long in one sack, and pulled out a lock of wool, remarked that it was a little dirty, and bid 47c. When we said we would prefer to ship it east where it could be graded and sold on its merits, he wanted to bet a Stetson hat that we could not ship it out and net more than 47c. He finally bid up to 49c, but we did not sell. We called up two Denver commission firms that same day, and asked for bids. Both firms had handled our wool before. One firm bid 53c, the other bid 55c, plus freight, and got the wool. That was 10c a pound over the highest local price.

"The government grading system was a war measure, and is not likely to be repeated, at least in the same way. The Australian system of baling and grading has been tried out in the west, but is of greatest interest to the large wool grower. For men with small clips of wool the co-operative pooling and grading system seems to be giving good satisfaction. Iowa and Illinois have had pooling systems in operation for the past year. The next speaker, Mr. L. L. Heller, assistant secretary of the National Wool Growers' association, can give us information about their work."

Progress in Marketing.

Mr. L. L. Heller: "I think there is no question but that the government system of handling wool in 1918 will have a greater effect on sheep husbandry than anything that has happened in 25 years. There were somewhere near 10,000,000 pounds marketed in this way. The result has been that the small wool grower learned how to market his wool, and what prices he could expect to get for it. County pools have been organized. In New York state part of the county pools sold their wool locally. They got their wool together and advertised the day on which the wool would be sold. Similar pools were formed in Indiana, Michigan, Nebraska and part of Missouri and Kansas. The Ohio sheep breeders formed a state association, the strongest in the world, with 30,000 members. They have their wool brought together and graded by expert graders. Illinois adopted a different plan. They arranged with the county agricultural associations and farm bureaus of the different counties to handle the wool. The county agents are furnished with sample cases showing the different grades of wool to use as standards. Iowa formed a sheep breeders' association, and it works very closely with the farm bureaus. They made arrangements with the National Wool Warehouse company of Chicago, whereby it would receive the wool and charge 2½c per pound for grading, storage, insurance, etc., providing the wool was sold within four months. In a short time the various companies were contesting with each other to obtain these shipments. As soon as the Iowa and Illinois associations got started the companies that had previously bought the wool outright advertised that they would do the very same thing for the same amount of money. They did not like to lose the chance of buying the small farm clips, which could previously be bought at a very low price, and then sold at a big increase. There was a big fight on for a while, trying to get hold of this farm wool. One company, in fact, advertised that they owned the Wool Warehouse company, and in that way got a little wool.

"In counties where no pools were formed, and where local dealers were getting no opposition, the prices were around 35c, and bids were remarkably even. Where pools were formed the wool growers got about 60c, and some got even more.

"One thing that is hardest to over-come in forming these pools is the fact that wool cannot be sold in this way for immediate cash in hand. The wool grower must be willing to wait possibly several months for his money, as the wool cannot all be marketed as soon as it arrives at the terminus. The wool crop is sheared in about three months and sold in twelve months. With few exceptions, mills do not buy much wool in advance. The dealers have done this for them. Where pools are formed it is impossible to market all this wool at one time. It must be held until the mills want it. The difference in price of 35c, which is what the farmer used to get, and 60c, which they got under pooled sales, is well worth the sheepmens' consideration. They can afford to hold their wool as well as the dealers can. The chances are no worse for the woolgrower than for the dealer. The entire cost for insurance, freight, grading, loss in weight, etc., was something like 6c per pound.

How Wool Gains Weight.

"There was another thing that came up this year. Wools shipped east gain in weight. Last year the Warehouse company reported 104,000 extra pounds which represented moisture taken up by the wool in transit, or about $52,000 which the western sheep men would not have received had they sold their wool out here. Wools grown in a damp climate do not gain in weight. Both the Illinois and Iowa associations sent representatives to watch the handling and grading of their wools."

Prof. Hill then gave a short talk on the various grades of wool. He had a number of samples with him to use as illustrations. He gave tables showing the grades of wool from the various types and breeds of sheep, and the scoured wool prices on each grade both for combing and clothing wool. He advised the farmers not to try to follow the market too closely in deciding the type of sheep to raise. The best thing to do is to find out the type of sheep that can be raised most efficiently in that particular locality, and then stick to that type and improve it. The man who tries to change off to raising fine wool when fine wool is high is likely to find that fine wool is low in price by the time he has his flock changed to that type.

Bureau of Markets Will Help.

Mr. Stuart L. Sweet of the Bureau of Markets was called upon for a few remarks.

(Turn to Page 24.)

Hampshires on the farm of Allen Nash, Montrose, Colo. One of these ewes dropped nine lambs in three years.

The raising of sheep on the farm is an industry that has not been considered by the people as a whole. However, it is found by those who have tried it out that the profit realized from the farm flock is well worth while. There is always more or less waste on the farm that is readily utilized by sheep, and thus converted into profit.

Allen Nash of Montrose, Colorado, has a small flock of registered Hampshire sheep. He has an irrigated pasture. His experience has been very interesting in sheep raising. He started with a few ewes from the Walnut Hall flocks in Kentucky. He has been unusually successful in saving lambs. One of his ewes has dropped nine lamps in the last three years, all of which have been raised. One year she dropped four, the next year three and another year two. In the case of the four it was necessary to feed a part of them from the bottle.

Mr. Nash recently sold a ram of his own raising to the Colorado State Reformatory at Buena Vista. This was an outstanding individual and was sired by an imported ram.

Mr. Nash finds the irrigated pasture a wonderful help in the raising of the sheep. The ewes give an abundance of milk which insures a big growthy lamb at the end of the season.

When raising the sheep in small numbers on the farm and giving them the attention they need, high lambing percentage is saved. Here is where the farm sheep industry wins over range handling. With wool in demand and at a good price the money to be made is worth while. For the farm flock an early maturing breed that produces both wool and mutton should be selected. With the organization of the livestock shipping associations the marketing of the lambs and wool is not so much of a problem.—H. A. L.

Corn Seeks Altitude Record in Saguache County

ASTONISHING RESULTS ARE DEVELOPED IN A FARM BUREAU TEST.

WILLIAM O. SAUDER.

The Editor's Comment.

Last August I accompanied a party of San Luis Valley farmers on a demonstration tour of Saguache county, to examine test fields of corn and Russian sunflowers. These crops were being tried at altitudes of 7,600 to 8,700 feet, most of them however, on the level floor of the valley at around 7,600 to 7,800 feet. The Russian sunflowers interested me particularly, as I have been quite skeptical regarding the ability of corn to adapt itself to such high elevations. In consequence of this prejudice my article in the issue of September 15, 1919, dealt largely with the successful trial of sunflowers which were, at the end of August, practically ready to cut for silage. There was doubt at the time whether the corn would mature, as all that had been planted before June was frozen back to the ground during the first three days of that month. The farmers told me at the time of the inspection in August that I would have to admit, later on, that they could grow corn successfully, because several of them had proved it to their own satisfaction. The accompanying report on the corn tests was prepared by the County Agent, William O. Sauder. It is an astonishing document in many ways. While one season cannot complete the evidence the report nevertheless shows that we must revise our preconceived notions about the adaptability of corn to cool climates, and we must change our idea about the effect of temperature on plant life at high elevations in this arid climate.—A. T. S.

FOR many years some farmers in this county have successfully grown corn. These farmers used a squaw corn which originally came from New Mexico, and a yellow and white flint. The latter was badly mixed owing to attempts by the grower to produce an early-maturing corn by crossing with sweet corn and squaw corn. At the various farmers' meetings, the question of whether corn could be raised successfully was debated pro and con. Hence when the Farm Bureau was preparing its program for 1919, it was decided to settle this question by demonstration. This project had for its object two things: (1) to determine whether corn could be grown successfully for ensilage, and (2) to reduce the weed menace by introducing a cultivable crop in the rotation.

Owing to the high altitude of this county (7,640 to 9,000 feet), it was realized from the beginning that northern grown seed had to be secured to get the best results. Seed corn was, therefore, imported from North and South Dakota, Minnesota, Wisconsin, Kansas, Oregon and Colorado. This was distributed by the Farm Bureau to those who wished to try it out. Seed from the last three named states was secured by the farmers themselves; this, with the exception of that from Oregon, did not mature.

A total of 63 different demonstrations were put out in all parts of the county. The plots ranged in size from one-twentieth of an acre to 20 acres. with a range in altitude of from 7,640 to 8,700 feet. All plots together totaled 68 acres, but many people outside of the Farm Bureau became interested and put out corn which was not under the supervision of the bureau. Thus there were about 100 acres of corn in Saguache ecounty last year, as against 20 acres the year before. The varieties of corn tried were the following

Variety and Origin of Seed.

North Dakota White Flint—North Dakota.
North Dakota Yellow Flint—North Dakota.
White Dent—Canon City, Colo.
Minnesota 13—Northern South Dakota.
Minnesota 13—Southern South Dakota.
Colorado Yellow Dent—Colorado.
Swadley—Colorado.
Calico—Colorado.
White Australian—Colorado.
Squaw—New Mexico.
Pride of the North—Western Colorado.
King of Earlies—Western Colorado.
Yellow Flint—Saguache, Colo.
Smut Nose Flint—Southern South Dakota.
Rainbow Flint—North Dakota.
Brown County Yellow Dent—Northern South Dakota.
Whimples Yellow Dent—Southern South Dakota.
Gurney's August 15th—Southern South Dakota.
Northwestern Dent—Southern South Dakota.
White Australian—Saguache, Colo.
North Dakota White Dent—Southern South Dakota.
Early Murdock—Southern South Dakota.
Yellow and White Flint—In county 23 years.
Yellow and White Flint—La Veta, Colorado.
Ninety-Day Corn—Kansas.
Yellow Dent (probably Minnesota 13)—Oregon.
Rainbow Flint—Saguache.
Yellow Flint—Wisconsin.

Twenty-nine different kinds of corn were tried out, assuming that the origin of the seed determines the kind. So far as varieties are concerned, there were 20 different ones. This seed was purchased through the Farm Bureau and sold to farmers at cost, which was 10c per pound.

The plots put out received all sorts of care. Some, who really were interested in making a success, gave the corn the very best of care; others thought it was a failure anyhow and gave it indifferent care. Where good care was given to any variety of early-maturing qualities it matured very nicely.

All varieties reached the silage stage and thus fulfilled the first object of the project. The later-maturing varieties gave the largest yield of forage, while the opposite was true of the early-maturing ones. It seemed that the earlier the corn, the smaller the yield of forage. Data was not secured on all the plots put out, but the most promising varieties were studied with the idea of further development. Varieties which matured follow in order of maturity.

Variety—	Date of Maturity.	Estimated Yield Grain per Acre.
North Dakota White Flint	August 25	15 bushels
North Dakota Yellow Flint	September 1	15 bushels
Squaw Corn	September 1	15 bushels
Yellow and White Flint (Damey)	September 5	40 bushels
Yellow Flint (Saguache)	September 1	15 bushels
Northwestern Dent	September 10	20 bushels
Rainbow Flint (Saguache)	September 10	20 bushels
Yellow and Whte Flint (La Veta)	September 10	40 bushels
Rainbow Flint	September 10	20 bushels
Smut Nose Flint	September 15	30 bushels
Brown County Yellow Dent	September 15	60 bushels
Oregon Yellow Dent	September 15	40 bushels
Swadley	September 21	35 bushels
Minnesota 13 (N. So. Dak.)	September 21	50 bushels
Minnesota 13 (S. So. Dak.)	September 21	50 bushels
White Dent (Canon City)	September 21	40 bushels
Gurney's August 15	September 21	40 bushels

The following table shows the date of planting, date of maturity and forage yield for ensilage, which was estimated for each one:

Variety.	Date Planted.	Date Matured.	Ensilage Yield.
North Dakota White Flint	May 20	August 25	1 ton per A.
Nortn Dakota Yellow Flint	June 9	September 1	1 ton per A.
Squaw	June 9	September 1	1 ton per A.
Yellow Flint (Saguache)	June 1	September 1	1 ton per A.
Yellow and Wh. Flint (Damey)	June 1	September 5	4 tons per A.
Yellow and Wh. Flint (LaVeta)	June 1	September 10	5 tons per A.
Rainbow Flint (Saguache)	May 19*	September 10	8 tons per A.
Northwest Dent	May 20*	September 10	6 tons per A.
Rainbow Flint (Dakota)	May 19*	September 10	8 tons per A.
Smut Nose Flint	May 20*	September 15	5 tons per A.
Brown County Yell. Dent	May 24	September 15	5 tons per A.
Oregon Yellow Dent	May 19*	September 15	6 tons per A.
Swadley	June 9	September 21	8 tons per A.
Minnesota 13 (S. So. Dak.)	May 13	September 21	8 tons per A.
Minneota 13 (N. So. Dak.)	June 10	September 21	10 tons per A.
White Dent (Canon City)	May 14*	September 21	7 tons per A.
Gurney's August 15th	June 1	September 21	6 tons per A.

*Plots which were up from 1 to 6 inches on June 2 when the severe freeze at that time frosted them to the ground. The growing season for these really does not start until June 4.

The following table shows the length of the growing season of the varieties on the plots which were first to mature.

Variety.	Date Planted.	Frosted Down.	Time for Maturing
North Dakota White Flint	May 20	Not frosted	96 days
North Dakota Yellow Flint	June 9	Not frosted	83 days
Squaw	June 9	Not frosted	83 days
Yellow Flint (Saguache)	June 1	Not frosted	92 days
Yellow and Wh. Flint (Damey)	June 1	Not frosted	97 days
Yellow and Wh. Flint (LaVeta)	June 1	Not frosted	102 days
Rainbow Flint (Saguache)	May 19	June 2	98 days
Northwest Dent	May 20	Not frosted	113 days
Rainbow Flint (Dakota)	May 19	June 2	98 days
Smut Nose Flint	May 20	June 2	103 days
Brown County Yellow Dent	May 24	Not frosted	113 days
Oregon Yellow Dent	May 19	June 2	103 days
Swadley	June 9	Not frosted	104 days
Minnesota 13 (S. So. D.)	May 13	June 2	109 days
Minnesota 13 (N. So. D.)	June 10	Not frosted	103 days
White Dent (Canon City)	May 14	June 2	109 days
Gurney's August 15th	June 1	Not frosted	112 days

Corn in Shock on farm of George Truckenmiller, Saguache County, Colo.

The longer growing season of the White Flint over the Yellow is due to lack of moisture in the soil where the former was planted and not to the fact that it requires more time to mature. In the above table the time for the maturing of a variety is figured from June 4 where the plots were frosted on June 2. The first three days of June were cold and the mercury going down to freezing every night. Hence it is assumed that the frosted corn did not start growing again until the 4th.

It is generally conceded that the summer of 1919 was especially favorable to growing corn. The farmers over the county agree that the summer was warmer than usual and the two weather observatories in the county bear out this experience. The departure from the normal, however, was very slight, as the records indicate. Data taken at the Saguache and the Garnett weather observatories show that this summer was warmer than that of 1918 but varied very little from the 27-year average.

The records indicate that for June, 1919, the minimum average was lower than it was for 1918, while the maximum was but .8 of a degree above the average for 1918. It is believed that the average for June, 1919, was about the average for the past 27 years. In other words, the average for June, 1919, was normal, but the first four days of that month were decidedly abnormal. The records at the Saguache station show that the following minimum temperatures prevailed: June 1, 25 degrees; June 2, 23 deg.; June 3, 27 deg., while on June 4 it was but 38 deg. and June 5 it was 33 deg. again. The month of June did not produce growing weather according to the records, until about the 14th, when for the first time the minimum was above 39 deg. Thus the season can be regarded as favorable for corn from one standpoint and extremely unfavorable from another. It is believed that any variety which matured in 1919 will do so most any season in this county.

Looking at the records at the other end of the summer, we find that killing frosts did not occur until September 22. Frosts may be expected along about the 10th of September, but this does not always happen. In 1918 the first frost occurred on September 17 and this was but a light freeze, the thermometer at Saguache going only to 32 for one night and then not going below this until the night of the 20th, when it went to 31 degrees. Thus the season of 1919 differed very little from that of 1918 in this respect. The average growing season can be figured at 110 days and most of the varieties introduced this year can be matured in this time.

The plots grown this year showed that corn will do better in the warm, sandy soils than in the cool, clayey ones. Thus the plots on the east side of the county, at Hooper and Mirage, matured corn earlier than plots on the west side of the county. Experience indicated that corn grown in check rows did not produce ripe corn earlier, nor in greater quantity, than that drilled in. In this county, where we must use the smaller short-season varieties, we must grow corn about four to six inches apart in the rows. When this is done we can raise fairly good crops and produces as much forage and grain per acre as any other crop which we can grow. The ears will not be as large as corn in other places, but there will be more of them. Corn should be planted not earlier than May 24 and not later than June 1 for best results. Based on this year's experience, the following varieties seem to be the ones upon which further development is justified:

White and Yellow Flint of all kinds tried.
Northwestern Dent.
Brown County Yellow Dent.
Minnesota 13 (Northern South Dakota grown).
Rainbow Flint.
Smut Nose Flint.
Gurney's August 15th.
White Dent (Canon City).
Swadley.
Oregon Yellow Dent (probably Minnesota 13).
Squaw.

In order to find the vitality of the corn matured, germination tests were made, which resulted as follows:

Variety.	No. Ears Tested.	Percent Germin't'n
N. D. White Flint	7	99 pct.
N. D. Yellow Flint	5	92 pct.
Gurney's Augut 15th	2	85 pct.
Wh. and Y. Flint (Damey).	5	100 pct.
Smut Nose Flint	3	87 pct.
Swadley	4	23 pct.
White Dent (Canon City).	4	63 pct.
Northwestern Dent	5	58 pct.
Minnesota 13 (S. So. Dak.).	5	68 pct.
Minnesota 13 (N. So Da.).	5	70 pct.
Brown County Yellow Dent	5	88 pct.

It is interesting to note that the Yellow and White flint grown by Mr. Chas. Damey at Center for the past 23 years

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What the Farmers Talked About at Fort Collins

HITTING THE HIGH SPOTS IN FARMER'S CONGRESS PROGRAM.

F. W. Merrill, Waterloo, Iowa. Representative of the National Dairy Council.

THERE is only one way to bring down the price of butter and milk —decrease the cost of production and double the demand." This is the statement of Fred W. Merrill, of Waterloo, Iowa, a representative of the National Dairy Council who spoke to the Colorado Farmers Congress at Fort Collins in December. Mr. Merrill urged active propaganda in the schools for the purpose of impressing the nutritive value of dairy products upon the minds of the young. He laid stress upon the fact that milk and butter contain vitamines, the element needed to promote growth and pointed out that we were a nation of meat eaters, because of a general misunderstanding of the relative value of meat and dairy foods in the diet. He advocated publicity for the dairy industry among consumers to offset the unwise agitation in the large centers of population where milk boycotts are talked of as a means of cutting the cost of living. The only result of such boycott, is to force dairy farmers to quit the business, thus reducing production and, in the end, causing even higher prices to the consumer.

With hay at $38 a ton, concentrated foods at $70 and $80 a ton, and labor higher than ever before, it is a foregone conclusion, said Mr. Merrill, that the dairy farmer's profits are meager. The consuming public should be put in possession of facts concerning the cost of production, concerning the real food value of dairy products, and the dairy farmer should then insist upon a price that would leave him a legitimate profit.

Mr. Merrill spoke of a survey made in the public schools in an Iowa town, where it was found that only 8 per cent of the pupils drank milk, and these took one cup a day, while 20 per cent used tea and coffee as a regular beverage, drinking two cups daily. He said that this condition, no doubt, was common among the growing generation and that it was of great importance to the future health of the nation to teach lessons of nutrition in the public schools. He said it should become a daily question by the teachers, "How many have had their pint of milk this morning?" and that this question would do far more toward improving the health of the children than "Have you washed your face and hands today?"

All sections of the dairy industry should be developed along one comprehensive plan to include butter, milk, condensed milk, cheese, ice cream, and powdered milk. He urged the development of our domestic market, stating that there was little to hope from prospective foreign consumption.

Another speaker along the same lines was Mr. Gingrich of the Midwest Creamery, Denver, who, among other things, stated that the dealers in dairy products must be made to see the connecting link between the public and the cow. He declared that when dairy products reached a certain high figure on the market, consumers quit buying them. This has forced even some of the creameries to the handling of butter substitutes. He said they did not like to handle these substitutes, but that the manufacturers, through clever advertising in the women's magazines, had worked up a great demand for em among housewives.

ALVIN T. STEINEL.

"We must meet the makers of substitutes on their own ground, and popularize dairy products by persistent advertising," said Mr. Gingrich. "We should use the magazines and billboards and our display advertising should be such as to make the reader feel he is missing something if he does not use milk and butter. When the consumer begins to use substitutes for butter, it hurts the entire dairy industry, but the only man who is hurt when we quit using substitutes is a cocoanut raiser near the Equator, about whose welfare we are not concerned."

About Dairying Near Denver.

Leo Shupe, secretary of the Denver Dairymen's Association, gave some interesting figures concerning cost of production. In 1918, Denver district dairy farmers were getting 90 cents per pound for butterfat. Based on a questionnaire sent to 250 farmers, the average cost of production in that year was 91 cents on September 1. The price of butterfat was increased to $1 November 1, 1918. In 1919 another survey was made from which 150 answers gave the deduction that 90 cents was the cost of production. At that time, the farmers were receiving only 80 cents per pound for butterfat. Mr. Shupe pointed out that with a cost of production practically the same as the previous year, butterfat was being sold at 10 cents per pound less.

These figures indicated why so many producers in the Denver district are dissatisfied and are offering their herds for sale. He cited one successful herd where the average value of the cows was $375 per head. This herd is headed by a registered bull valued at $1,200. The dairyman is feeding the same $20 hay and $3 to $4 grain as the less successful farmers, but is making money because of the bigger volume produced by his good cows. Mr. Shupe declared that this man paid his ranch foreman $90 and gave him house, cow and chickens, and that he paid his milkers $75 a month and board. He used this case as an example to show that even at a high cost of production there was some profit in dairying, if the farmer owned high producing cows and understood economical management. This particular case, however, was an exception. The greater majority of dairymen producing milk for domestic consumption in Denver are doing business on a very narrow margin, if not at an actual loss.

The matter of ridding Colorado of tubercular cattle was brought up by Dr. Lamb, state veterinarian, and Dr. Howe, who has charge of this work for the Department of Agriculture in Colorado. Dr. Lamb stated that his inspection of certificates accompanying herds brought in from Wisconsin had shown him the grave necessity for a clean-up in Colorado. "Wisconsin herds," he said, "are ridden with tuberculosis. He cited one case were 20 head of dairy stock brought in from that state were tested and 15 found to be afflicted. In spite of that fact they had come in with a clean bill of health. Colorado has no law concerning testing and payment of indemnities for cattle condemned. He urged the Dairymen's Association to use its influence for the passage of necessary legislation along this line.

Dr. Howe briefly explained the government plan of accredited herds. Discussion followed, as a result of which a resolution was adoptetd asking the board of directors to look into the accredited herd plan, and, if advisable, take up the matter of necessary appropriations with the next legislature.

Interesting Figures From Dorman.

Mr. J. E. Dorman of the Western Dairy Division, U. S. Department of Agriculture, Salt Lake City, presented some interesting facts and figures regarding growth of the dairy industry in the mountain and coast states. "There are in these states," he said, "30 cow testing associations, which are doing a wonderful work in eliminating nonproducers." He stated that the records showed the average of cows that have been in the testing association for three years or more to be 11 pounds per month more butterfat than those which have been on test a year or less. As an estimate of the value of cow testing he cited figures of the average production per cow in the United States to be 160 pounds of butterfat, while the average of the cows on test is 243 pounds.

"In the seven years since the Dairy Division has been actively represented in this western territory," stated Mr. Dorman, "we have witnessed a change from an importing to an exporting basis in dairy production. There has been no backward step in any state in this territory with the exception of Arizona, where a decrease from 60,000 dairy cows to 18,000 has been recorded, this being due to the fact that farmers have been receiving hitherto unheard of prices for long staple cotton grown in the Salt River Valley of Arizona. There is a great demand for these Arizona cattle in other western states."

Mr. Dorman expects to see the time when the Arizona farmers will again turn to the dairy cow for a steady income.

He also spoke on the subject of cooperative bull associations, of which there are now eleven in existence in this territory. These associations are being operated with 40 purebred bulls, all of them selected from high producing dams. The co-operative bull association enables the dairy farmer to get the service of the very best bulls at nominal cost to each co-operator.

Regarding silos, he stated that estimates for Colorado indicated approximately 1,500 silos built during 1919. Utah has doubled its number of silos, now having 800, with only 400 in use during 1918, and Idaho built 1,100 during the past year.

Mr. Dorman strongly supplemented the statements previously made regarding the necessity for eradication of tuberculosis in the dairy herds of the west. Good progress is being made in some of the states, notably in California, which has been practically cleaned up, and in Utah, where 90 per cent of the herds have been tested. In Utah only 1.3 per cent of the cows tested were reactors. In Idaho about 25 per cent have been tested and 2 per cent have been found to react to the tuberculin test.

In Nevada the condition has been deplorable, due to the fact that when California inaugurated its clean-up, tubercular cows from that state were sold to the farmers of Nevada. In one community in that state 20 per cent of the cows were found to be affected with tuberculosis. He urged the Colorado dairymen to get behind the proposal for a clean-up in this state.

Beef Men Talk Things Over.

The beef men had their inning on the third day of the congress, John Painter of Roggen presiding. Mr. Painter gave a brief review of the development of beef production in Colorado from his own experience, which dates back to 1883, pointing out that, in all this time, no five-year period was the same as any other five-year period. The first three crops of steers he marketed went for Christmas beef right off the grass. They were Shorthorns averaging 1,333 pounds and thickly covered with fat. The racks in the Denver meat shops were not high enough to hold the carcasses, and these cattle sold at $2.90 per cwt. Today that sort of beef would bring 17c to 20c. In those days, said Mr. Painter, we had grass in Colorado. In the nineties the cattle came off grass at 1,000 to 1,100 pounds and went to the feeders, and so it has gone on until today the grass is practically gone, except in a few isolated places.

In the nineties the price of cattle went so low that the type depreciated and this together with depletion of the grass put everybody out of business. "We ruined our heritage of grass; took off the cream and had the skimmilk left," said Mr. Painter.

He has been preaching the necessity for rejuvenation of the range and the building of artificial pastures for years. Others who followed on the same lines were Eugene Grubb of Carbondale, who told of his irrigated pastures and their great value for beef production on the mesas bordering Mount Sopris, and Lord Ogilvie, who also is an advocate of nature's best ration for beef or milk.

Mr. James Brennan, general manager for Swift & Company of Denver, gave some interesting information regarding consumption and distribution of meat food products by the packers. The per capita consumption of meat food products in the United States is 180 pounds per year, divided as follows: 60 pounds of beef, 80 pounds of pork, 20 pounds of poultry, 10 pounds of veal and 10 pounds of mutton. This consumption varies considerably between sections of the country, the western people consuming 70 pounds of beef per person, while only 30 pounds per person is consumed in the south. Mr. Brennan pointed out that production does not equal consumption, and that the 60,000 head of cattle slaughtered every day in the year at all markets did not afford nearly a sufficient supply of beef for domestic consumption. He explained the necessity for and benefits of storage of meat food products and declared that the packers had very little ahead in their coolers at any time.

Regarding eggs, he stated that the consumption was 90,000,000 per day—nearly one egg a day for every person in the United States. "The largst supply held in storage by the packers at any period during the last year," he stated, "was just sufficient to last twelve days at that rate of consumption."

In butter, the consumption per capita is 20 pounds per annum, and the highest amount held in storage at any time during the year was 80,000,000 pounds. "Five years ago," he added, "the people of this countrty ate one-half pound per year of oleomargarine, while today the consumption of this substitute is four and one-half pounds per person, because of the increased demand. Mr. Brennan declared that the chief reason for dollar eggs and 80-cent butter was underproduction.

The Sugar Beet Industry.

Interesting facts and figures about the sugar beet industry were given by Mr. Hans Mendelson of the Great Western Sugar Company's technical staff. His address came following a discussion regarding the popularization of dairy products and in opening he called attention to the fact that no advertising campaign had ever been necessary to get people to eat sugar, of which there is a serious shortage. Among the reasons for this, he said, was the standardization of the product, granulated sugar being the same no matter where sold. He gave the farmers both sides of the beet growing story, mentioning the high labor requirements, the excessive labor cost and other discouraging factors, in spite of which beets show a constantly increasing acreage, at a much greater rate than the total increase in acreage of land being brought under cultivation. For the crop year of 1919 the contracted acreage in northern Colorado was 190,000 acres, but only 140,000 acres were harvested, due to water shortage. Surveys made by the company, he said, had shown that the smaller the farm the larger the proportionate acreage in beets—clearly an evidence of the value of beets as a cash crop. The farmers who feed year after year show an average yield of three tons to the acre higher than is shown on farms where feeding of cattle or sheep is not a regular business.

Following his address Mr. Mendelson answered questions from farmers, a lively discussion resulting, during which the matter of cost of raising beets was touched on. Prof. Alvin Kezer of the Agricultural College was asked what his figures showed for 1919 and he said the aggregate was $104 per acre, while the gross return was $100; in other words, the farmers, on the average, paid $4 an acre for the privilege of raising beets last year. Other points brought out in the cross questioning were that three-tenths of a ton of pulp was secured by the factory per ton of beets paid for, and that 258 pounds of granulated sugar was manufactured per ton of beets paid for. This discussion proved one of the most lively and interesting features of the week, as neither the farmers nor the factory representative minced words. It was straight from the shoulder talk, but good-natured withal.

Officers were elected by the State Dairymen's Association as follows: W. T. Letford, Johnstown, president; Leo Shupe Denver, vice president; R. McCann secretary. Others together with the officers constituting the directory are Robert Lazear, Fruita; W. S. Part-

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Witch's Island

BY W. T. NICHOLS

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Would you like to make a journey to the islands of the Caribbean sea? Then join us on a voyage of adventure to the romantic regions of palms and pirates, of hurricanes and wrecks, of mysterious searches for treasure, of intrigue, of love, of sharp fighting, of secret service agents, all to come out safely in a happy ending. This and more is promised us in the latest story of Mr. W. T. Nichols which begins on this page and will be published serially in Western Farm Life.

You said you enjoyed H. R. H. The Rider. We bid goodbye to that picturesque individual in the issue of January 1, though we have not forgotten his creator, Edgar Rice Burroughs, who is ranching in California—and writing other good tales. We may hope to get a look at one or two of them later. Now for a change of scene from the rugged hills of the Balkans to the calm southern waters that wash the shores of Central and South America. Mr. Nichols knows those seas and their treacherousness, and he has given his unique plot a beautifully peaceful setting. But just when you might expect to stretch out full length on deck and drop into slumber fanned by a lazy, equatorial breeze you find yourself startled by dramatic action. More of this would be telling the story, and that must be left to the action of the characters created by Mr. Nichols. We're off now for the West Indies. Won't you join us?

CHAPTER I.

Grayson, Ex '94.

THE time was late afternoon of a day of blazing sunshine; the place, a stone-walled, white-washed cafe of a drowsy West Indian town; the company, a gathering leaving much to be desired.

One corner table was held by a squad of bluejackets from a German warship. Across the room were three young men, tourists apparently, drinking heavily and talking loudly. In still another corner a man in a creased and dingy suit of duck was smoking a long cigar, exchanging a word now and then with a comrade in what might have been—in an earlier and more prosperous epoch—the uniform of a yacht's deckhand. Then there was I, sitting alone, with a lime concoction before me, and half dozing, what with the shimmering heat outside and the drone of insects within, but roused, now and again, by the wrangling of the tourists.

Altogether, it was not a joyous way to kill time, yet a better was hard to hit upon. Other houses of call there might be, but one doubtless was much like the next, and exploration and test involved bodily exertion. So I tarried where I was, sipped occasionally at the long glass, marvelled languidly at the odd inefficiency of ice to cool, and cursed my stupidity in not taking steamer north. I might have gone three days before; there would not be another boat for a week. Meanwhile, I was left an idler wearying of nothing to do, a stranger in a strange land, a friendless soul, in short. The tourists were not attractive; they were a banal lot, obnoxious in their cups and probably bores when sober. I stared at them for a moment, shook my head, and turned to find the man in the soiled duck suit eyeing me with rather potent interest.

There was a second when our glances met. Then he said something to the ragged fellow, whereupon the latter rose and shuffled out of the place, looking neither to right nor to left.

Covertly I studied the one who remained. He was a trifle over medium height, thin almost to gauntness, and so dark that he might have been suspected of negro blood except that there was no kink in his hair, which grew fine and straight on a well-shaped head. So much I noted, and then, with languid curiosity quickly appeased, turned again to the revellers, one of whom had got upon his feet and was trying to offer a toast against the handicap of hiccough and fickle memory. Unluckily, as I looked at him, he faced in my direction. In another instant he had caught up a bottle and was staggering toward me.

"Whash you mean, fellow?" he roared. "Who you gogglin' at? Who you tryin' to—to—inshult, you—you——"

"Im not trying to insult anybody," I told him stiffly. "So if you will kindly go back to your own place and let me alone, I'll speak for myself if there's need."

"Eh?" he said stupidly. "Eh? Whazzer matter with you? That's no way to answer gen'leman. You got no manners. You grin at me like a bloomin' ape. You got apologize—understan'?"

"Oh, go away!" said I not too tactfully, and turned my back to him, still less prudently. Suddenly he raised his bottle and aimed a vicious blow at my head.

That it missed its mark was through no fault of his or virtue of mine, but because of the exceeding quickness of the man in soiled duck, who sprang from his seat and caught the inebriate's wrist, deflecting the descending arm. The bottle struck the table, and splintered with a fine crash. Thereupon my rescuer shifted his hold from wrist to neck, twisted my enemy about, and sent him reeling back upon his friends, both of whom had started up, as if with intent to join the fray. As it was, they merely saved their man a fall, and their advance checked by his retreat came to a standstill, of which my ally took prompt advantage.

"Steady there, steady!" he sang out. "Cut out the rough work. Confound you, don't you know they stretch hemp down this way for tricks like that that go to a finish?"

How far this counsel might have availed, if unsupported by force, I do not know; but the barman and a helper charged the three on the flank. There was a bit of a scuffle, much loud talk, a squabble over the reckoning, and the three were thrust forth from the shop. While these things were doing, the dark stranger stood alertly vigilant; but when they were done, he gave ear to my thanks for his timely succor.

"Oh, it was nothing," he said lightly. "Saved you a nasty crack perhaps, but that's all in the day's work. You'd have done as much for me.

"Supposing the roles reversed, and that I'd have been quick enough," said I. "Still I don't know—mature man has a weakness for keeping out of other people's quarrels."

"If that's a test of maturity, I fear some of us never quite grow up," he said with a smile, which showed good, even teeth and lighted his face amazingly. "Might be better for us if we did, eh?" he added.

"It will certainly be better for both of us to improve the acquaintance so auspiciously begun," said I, and motioned him to a chair.

"With all the pleasure in life," he told me heartily. He watched me while I took a place opposite him, and fell to tapping the table with a hand which seemed to betray nervousness scarcely in keeping with his previous manner. I essayed further thanks, but he cut me short.

"I might as well be honest with you. The cards couldn't have fallen more to my liking. For I wanted a chance to talk with you—Scott!"

At that I sat straighter and stared at him. "That's my name, but you have the advantage of me."

"Call it one advantage and don't begrudge its possession. You've enough others to outweigh it. And if you're Robert Harden Scott, sometimes known as 'Grippy' my advantage, as you call it, will be short-lived."

"I have been called Grippy Scott," I admitted, "but that was years ago. And you——?"

"Don't recall me, eh?"

I looked at him long and searchingly. "I don't place you."

"Except as a fellow in dirty clothes?"

"As a cleam man in dirty clothes," I corrected, and with justice, for he was freshly shaven, and the hand which beat the tattoo on the table had recently known soap and water.

He nodded, as if pleased. "One has to make the best of one's opportunities. Resort to a laundress presupposes a second suit—in other words, capitalism. Call that No. 1 of the advantages you possess and I don't."

Maybe I stiffened a bit at that; somehow, the hint of possible money reward for friendly service jars on the sophisticated ear. Still, it had been a service, timely and real.

"Of course, if I can be of assistance——" I began, but he cut me short.

"You can be of the highest assistance. No, not that way!" I was delving into a pocket. "I'm not in need of a night's lodging—not in this climate, thank the Lord! I am in need of money, not as a handout, though. I need a partner, an ally, with capital—not much of it, either."

"Indeed!" I hedged. "For a—er—er—for a business venture?"

"There's a business end possibly, but there's surely another end to the proposition."

"And that?"

"Adventure, a mystery," said he sharply, and looked me full in the eye.

"Oh!" said I.

He fell to drumming on the table harder than ever. "It's an odd tale to be telling in broad daylight. It needs a flickering torch or dying campfire, with blackness all about, to give it the proper tang. But it's a mystery that's gripped me. See here, now!" He stopped his tattoo abruptly, and leaned toward me. "I'm going to tell you—here and now—if you don't bolt. Likely enough, it's my one fair chance at your ear. But first, what's your lay here? Tourist?"

"Ordered south—health seeker."

"Good!" he said. "That means no other pressing engagements. It infers a stock of pocket money—not a great deal necessarily—but some hundreds, we'll say. I've designs on em."

"You're frank, at least."

"It's my only chance. And may I ask, in return, that you'll listen with open mind—without prejudice? That is, you'll do me the favor to consider I'm telling what I believe to be the truth?"

"Gladly," said I.

"Then we'll go back a little. You'll recall that I knew your name. No mystery about that, no occult powers, no mind reading. I knew you once, and you knew me. Since then I've knocked about in odd corners of the earth, on odd jobs done mostly for love of doing 'em—which was lucky, considering the profit of other sort they brought me. You, I reckon, have stuck to the beaten paths, and paid the rent regularly—well?"

"Well?" I echoed.

He threw back his head, and laughed silently. "I knew you'd be that way, Scott; everybody at the old shop knew it. They never thought it of me. Perhaps they didn't think much of me or about me, anyway. You were like all the rest. When I dropped out, I drew the hole after me, as you might say. Not that I hold grudges on that score. Bless you, no! I'm not much of an advertiser; I don't impress people with my striking individuality or dazzle 'em with my shining virtues. And so, Scott, meeting you here, after all these years, I'm forced to introduce myself. Grayson's my name—Grayson with an a and not an e."

"Ah!" said I, more courteously than reminiscently.

"Yes; Grayson, ex '94," said he. "Place me now, do you?"

It was a full minute before I spoke, a minute given to scrutiny of the man across the table. Then said I, half doubtfully, half affirmatively: "There was a Grayson in '94—that's right enough—he quit us in sophomore year. But he—he wasn't——"

"The color of a dark russet shoe, for one thing," he suggested.

"That's one of the things," said I, with unconscious stress on the one.

Again he laughed that silent laugh of his. "I do tan rather completely and thoroughly—eccentricity of pigmentation, probably, helped on by a strictly open-air existence. Still, if I can't show you the strawberry mark, here's at least white skin." He rolled up a sleeve of his jacket, baring the arm above the elbow. "I'm straight Caucasian, though they're not such sticklers in the matter down in these latitudes, as we were at home. And if you care to look at the nails——Dont' eh? Well, it's one of the tests, you know. And I'm a white man, and my name is Grayson, and I knew you at college, and one night I helped you rip a barber's pole from its stand, and we matched for possession of the trophy. And you won the toss, and came near being mighty sorry when the cop pounced down upon us. The pole tripped you, and down you went——"

I stopped him short. "Grayson!" My hand was stretched across the table. "The pole tripped me, and you tripped the cop."

"And we both got away, but not with the goods." He was smiling in a whimsical fashion. "It wasn't my first experience of the sort, or my last. However, it serves now to identify me, gives us a common bond—and that's the point, I take it."

I had sunk back in my chair with greater sense of bewilderment than of pleasure in the reunion. Grayson, the student, had been a neat fellow, quiet, unassuming, soft spoken, not especially marked among his fellows nor showing signs of possible development into a wanderer and ne'er-do-well. To come upon him, as he was, a bit of the human flotsam of an out-of-the-way Antillean port, was startling; it jarred one's notions of the conventions of the game of life, of the mathematical probabilities of the fall of the cards.

"I—I guess a good deal of water has flowed under our bridges since the old days," said I fatuously.

He nodded. "True, but the bridges are the same. They stand as before; you do, anyway. You were a square chap then, and I'm going on the idea you're a square chap still. You see, in spinning my yarn I put myself in your hands. I'm the one-talent man who has to unfold his napkin and expose the contents to the plucking hand—if it's that kind of a hand. Your's wasn't in the old days. I'm gambling it isn't now. Which is all by way of saying I trust you, when you've heard me, to join me in a little enterprise—or keep out of it and hold your tongue."

There was sudden harshness in his closing words, and an ugly glint had come into his eye.

"If you doubt my good faith, better not tell me," said I.

The glint vanished. "Forgive me, Scott! I've brooded too much on this thing. I'm like a hedgehog for suspicion, spikes sticking out toward everybody, except you, though I don't seem to have the happy knack of making clear the exception."

"I'll try to visualize it," I told him. "Also I'll give you the sort of promise you seek—deal or dumb."

Grayson cast a swift glance about the room. Nobody was near enough to overhear us.

"It's the case of the Zenobia," he said. "Know anything abut it, ever hear of it?"

"Never a syllable," I assured him.

CHAPTER II.

The Wreck of the "Zenobia."

"The Zenobia," said Grayson, with an air of picking his words, "was a yacht, auxiliary cruiser, three master, with yards across forward, and more

(Turn to Page 25.)

Discussion of Dairy Cattle Type

AFTERMATH OF 1918 STATE FAIR DECISION.

JUDGES of dairy cattle are often criticised for their decisions. This is more frequently the case regarding dairy cattle than in beef cattle, where the possibilities of differences in judgment are not so plentiful as in judging the dairy breeds. While the essential points of dairy type are fundamentally the same in all breeds, judges vary in their ideas regarding conformation within a breed as well as between breeds. Prof. R. W. Clark of the Extension department Colorado Agricultural College, who judged the dairy cattle at the State fair in 1918, and who has frequently officiated at county fairs in Colorado during the last three years, has been in correspondence with several noted authorities on the subject of dairy type. The replies he received to his letters contain much interesting information that will be helpful in a study of this subject by breeders and dairy farmers.

A Fine Type of Holstein Cow. Dorsky Sadie Vale Cornucopia, a New York State Champion.

Prof. Clark's decision in one particular case at the State fair in 1918 was questioned by some breeders, this being the award of the grand championship female to Fred V. Jensen on Woodcraft Empress Josephine (120539). When this cow came back in 1919 and W. S. Moscript of Minnesota again designated her as the grand champion Prof. Clark felt himself vindicated. He had, however, taken up the subject of dairy type with various authorities, thus turning the criticism to account. The two men whose opinion on type is especially interesting are Prof. C. S. Plumb of Ohio, author of "Types and Breeds of Farm Animals," a textbook in use by many agricultural colleges, and Prof. W. J. Fraser of the Dairy department, University of Illinois. Before quoting their answers we wish to give Prof. Clark's ideas on Holstein type, as follows:

Prof. Clark's Ideas.

"In selecting Holstein cows I lay emphasis on a large, well developed mammary system; a large, well developed middle piece; a large girth and dairy temperament. This last is indicated by a more or less sharp shoulder, a rather long, lean neck, rather sharp, prominent hip and pin bones and a rather flat, narrow thigh. I want flesh enough to bring out all the strength there is. I also emphasize depth of flank.

"In selecting males I don't expect as much dairy type, of course, but I like strong indications of it with lots of masculinity.

"I studied the prize winners at the recent National dairy show and, as near as I can see, they conformed to the above given description of type. I never saw a Holstein that possessed the extreme dairy type of a Jersey. The Holsteins always are more full and smoother, but they should not be too full and smooth.

"Years ago the Holsteins were very smooth, but the type has changed and along with it has come increased production. While increased production may be due to better feeding it is also due to a change in type."

Plumb on Dairy Type.

Prof. Plumb's ideas are summarized as follows: "I have not heard of any special objections from breeders to the dairy type description given in our text books. I do not, of course, believe that with some breeds all breeders have equally the same type in mind, even though they are breeding dairy cattle. In the case of the Jersey this type meets with universal favor. In the case of the Holstein Friesian, breeders admit that they have several types, and teachers must recognize this fact. I think that we must qualify our statements as to type, as to their bearing on the breed in question, and I see no actual necessity to confuse the former; at least I have never heard of any difficulties in this respect. In the case of the Holstein type the modern critic seeks an animal of the dairy type with just a little more fullness in all the points than will be found in the strictly dairy type. There is a little more width of withers and thickness of thigh than is found in the distinctly dairy type, and as a rule the extreme dairy type of Holstein does not secure as high a place in the show ring as one of the type I have referred to. I think that breeders of Holstein cattle are more at sea on type, or rather, pay less attention to type than do the breeders of any other breed. I think a ring of aged Holstein bulls contains more extremes in type than any other breed of cattle. It is possible to get Holsteins to be too large and coarse, but such a condition is rather unusual. A bull that weighs around 2,000 pounds, or a cow that weighs 1,600 pounds, if showing plenty of quality, would ordinarily meet with much favor."

What Fraser Says.

Prof. Fraser says: "It seems to me that the essentials of dairy type are the same for all dairy breeds and from the production standpoint, breed characteristics are, after all, of minor consequence. Of course, from the purebred standpoint, they must be given attention, and if one is to sell purebred cattle he must even pay attention to such non-essentials in economic milk production as the color of the hair. I think we should teach first and put the most emphasis on dairy type, and the breed question can come in later as a minor consideration. When I used to teach judging I used a grade cow of exceptionally fine dairy type but not the color of any dairy breed, so as not to confuse the two things. I think less emphasis should be laid on the size of Holsteins than on any other breed, because they are not nearly so much at fault in this particular. I think there is little danger in getting Holsteins too large, if the quality is maintained. Many of the largest Holsteins are very coarse, which is decidedly objectionable. In my opinion, size should be emphasized very strongly in all of the other breeds. The Holstein type does vary quite decidedly and this is one of the things we should get away from, but it, of course, varies nothing like as much as the type does in Brown Swiss."

The Motorcycle.

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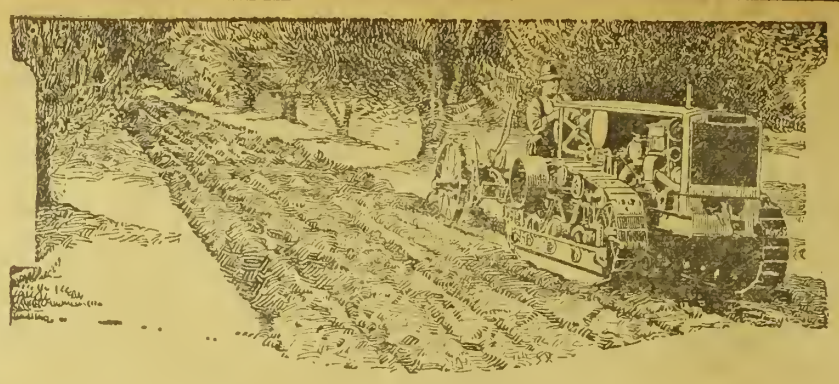

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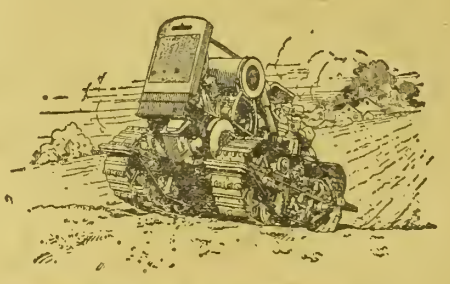

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Livestock Shippers School Held

METHODS OF CO-OPERATIVE SHIPPING EXPLAINED.

H. A. LINDGREN.

THE Colorado Agricultural College, in co-operation with the Bureau of Markets, staged a school for co-operative shippers at Denver, December 20. There are 26 co-operative livestock shipping associations in the state at the present time. An invitation was extended to each association manager to attend the school and discuss the problems that are common to all.

The delegation met at the stockyards in the office of C. E. Gibbons, U. S. Bureau of Markets, where a brief description was given by him of the methods employed in handling shipments at the yards. He explained that the buyers were looking not at the animals before them, but rather at the pounds of valuable meats and by-products they would yield when slaughtered. To give the shippers a fair idea of how the buyers worked and to acquaint them with the types the market demanded, they were piloted by Mr. Gibbons to the yards proper, where Mr. John Wallwork, buyer for Armour & Company, gave a brief description of the market demands, and how the cattle shipments were graded for sale; how poor, thin animals are sold either as canners and slaughtered, or sold as feeders. Good killing stuff in strongest demand is the 900 to 1,100 pound animal. Baby beef is in strong demand also. Mr. Wallwork pointed out the importance of natural handling of stock in the yards, stating that it was unnecessary either to give a big fill or to gaunt the animals in an attempt to fool the buyer, as that was not possible. The method of weighing the cattle and how the accounts are handled so as to keep everything straight was then explained.

The hog market was visited, where Mr. F. B. Wood, head hog buyer for Swift & Company gave an explanation of the market demand for hogs. He said the hog that the market demanded was the 175 to 225 pound class. They should be well finished and carry a good proportion of ham and loin. He explained the method of cutting the co-operative shipments when they arrived on the yards.

Through the courtesy of J. A. Miller & Son, the party was taken to the part of the yards where hogs were being vaccinated with Anti-Hog Cholera serum. This work was being done by Dr. P. C. Guyselman. Dr. E. N. Stout of the U. S. Bureau of Animal Industry explained the double treatment method and stated that all hogs leaving the yards must be treated in this manner. The double treatment creates permanent immunity from cholera.

The next place visited was the sheep barns, where W. A. Snyder, of the W. A. Snyder Commission Company, explained the market grades of sheep. He pointed out the type of sheep for which the market is looking. He said the sheep that produces a fairly good fleece, and a good mutton carcass, sold to the best advantage. Blackface sheep usually carry a better type for mutton than other breeds, but on account of their lack of herding qualities, are not popular on the range. However, he pointed out that they matured earlier and had a higher dressing percentage than any other breed of sheep. He pointed out the value of the Rambouillets as a base for breeding ewes, and expressed a prefcrence for a ewe cerrying three-fourths Rambouillet and one-fourth Cotswold breeding. The Rambouillet blood assures easy herding on the range, and the cross gives a desirable mutton sheep. He mentioned that where one has fenced pastures, this ewe could be profitably mated with black-face rams. The lambs resulting would satisfy the demands on the market. The idea gathered from Mr. Snyder's talk was that an early maturing mutton type lamb should be the aim of the range men. This closed the session at the yards, the party adjourning to the Civic Association rooms, where luncheon was served.

The afternoon session consisted of talks on co-operative shipping methods, led by Stuart L. Sweet, chief of the Colorado Office of Markets. E. J. Trosper, organizing secretary of the National Federation of Co-operative Shipping associations, told of the plans of that organization and how it would benefit the shippers by taking up and adjusting matters of importance to them—such things as car shortage, uniform accounting systems, rates, and all other matters of a helpful nature in making co-operative marketing a success. He stated that several of the states were forming state federations which are joining the national association.

Mr. Ralph Mahon, manager of the Denver Union Stock Yards, spoke briefly on the future prospects for Denver as a livestock market. Mr. A. A. Blakely of the A. A. Blakely Live Stock Commission Company, then spoke on the proper methods of handling co-operative shipments at loading points. He pointed out the need for proper marking and the importance of obtaining a bill of sale for the animals shipped, in order to eliminate any delay at the yards in sale of stock.

Mr. M. D. Coffin of the Farmers' Union Commission Company called attention to the proper method of marking animals for shipment, using a shears and clipping the hair in different parts of the animal's back, except for sheep, which are marked with paint. Hogs and cattle should never be marked with paint, as it rubs off, removing all means of identification.

Mr. W. F. Heppe, of the Colorado Office of Markets, gave a very complete and understandable description of the accounting system recommended by the government. This is a very simple method, the details of which may be had from the Denver office, U. S. Bureau of Markets.

A meeting of the shippers has been called for a later date, at which time the work will be taken up more in detail and the question of forming a state federation will be discussed.

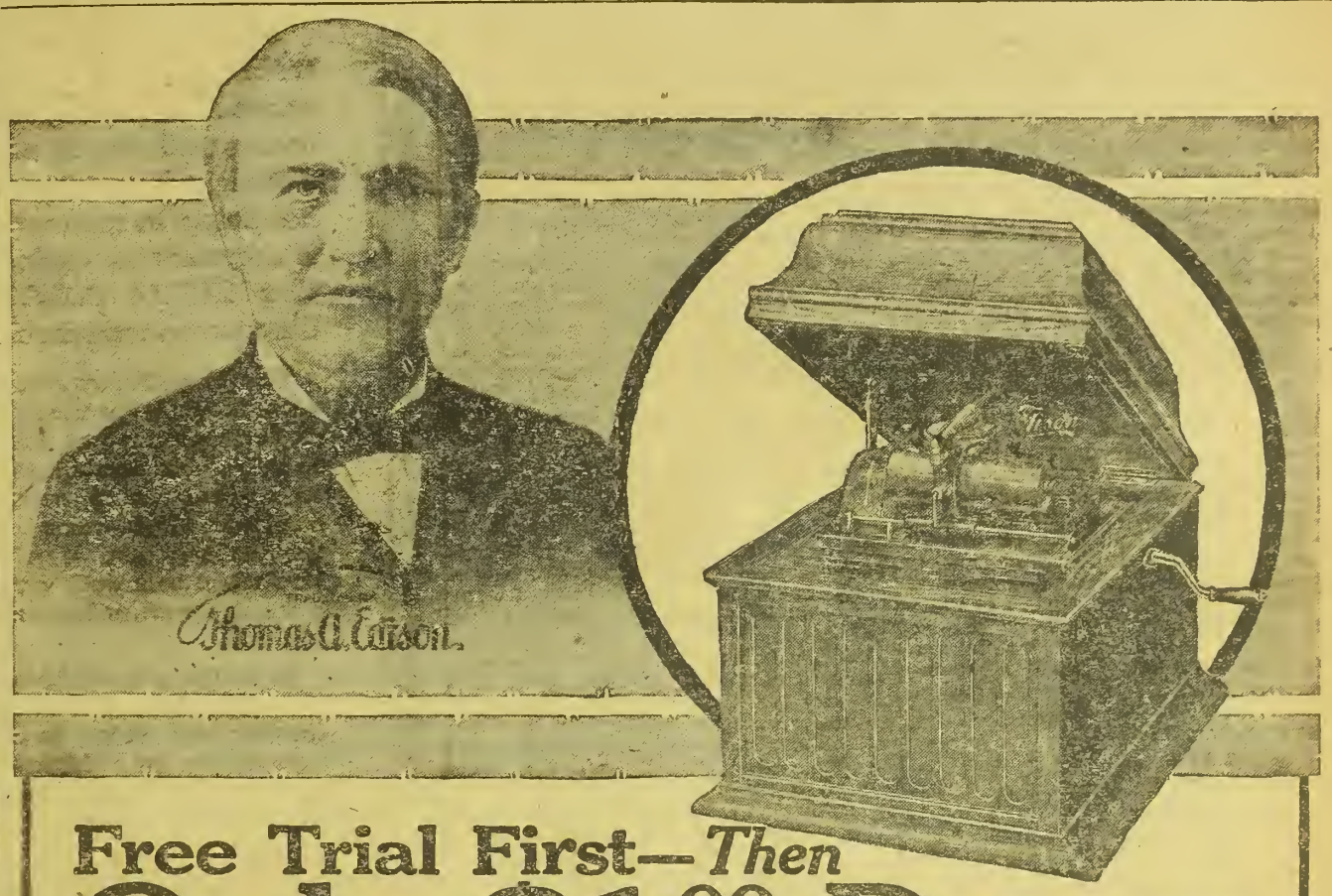
The meeting was helpful to all who attended and the work of co-operative livestock shipping will be greatly benefited.—H. A. L.

They Were Bred in Colorado.

The third prize yearling in the short-fed specials at the recent International were shown by Mr. Dan D. Casement, Manhattan, Kan., and purchased by Armour & Company at $24 per cwt. These were high grade Hereford yearlings, all bred by Mr. Casement on his Colorado ranch and sired by three bulls, all grandsons of 40th Beau Donald, Bright Donald and Hal Donald 2nd. The females of the load were high grade Hereford cows founded on a cut from the L. C. herd established some years since by George Adams in the San Luis Valley, Colo.

These cattle were fed until April 25, 1919, on alfalfa hay and a small ration of shell corn, receiving for a short time approximately 6 pounds per head, but most of the time something less. Due to the fact that Juniata Ranch was a little short on roughage last winer, the calves did not get all the alfalfa they could eat. On August 2, when they weighed 750 pounds, they were placed on full feed with a daily ration of 10.8 lbs. ground corn, 2.74 lbs. ground oats and barley (2-3 oats, 1-3 barley), 1.18 lbs. linseed meal, 0.8 lbs. cottonseed meal, 1.74 lbs. bran, .034 lbs. molasses, 5.8 lbs. alfalfa, 1.1 lbs. prairie hay and .054 lbs. salt. The cattle were furnished no shelter, but remained in open feed lots in timber.

Their average gain previous to shipment was 2.6 lbs. per head per day, their official weight at Chicago was 1,020 lbs. and their dressing percentage, carcass to live weight, 60.9. Their average age was about 19 months and their cost of gain while on feed was $23.24 per cwt. Mr. Casement believes that in preparing another load of fat cattle, he would reduce somewhat the size of his lots, but as far as the ration is concerned, feels that he has a very satisfactory combination.



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Combatting the Alfalfa Weevil

SPREAD OF INSECT PEST IN WESTERN FIELDS.

CLAUDE L. WAKELAND.

ARTICLE I.

ONE constantly hears expressions of consternation verging, in some cases, on despair, at the increasing prevalence of insects which are making the production of farm crops more uncertain and the cost of production greater. As new countries have developed and conditions have become more favorable for the rapid increase and spread of insects, few crops have remained without their special insect enemies which cause more or less injury and loss. The expression has often been made by a farmer, after viewing his "wormy" crop of fruit or other insect-injured products, that he could at least raise alfalfa without "fighting the bugs." Familiar to many perhaps is the story of the farmer who, when asked the variety of apples he raised, replied that they were all "earlybirds," his explanation being that it takes the early bird to catch the worm. We might say that western agriculture has evolved an early-bird variety of alfalfa, for it has indeed "caught the worm."

With alfalfa viewed by many as the one crop which is free from insect attack the result has been that with the advent of the alfalfa weevil into new communities the knowledge of its presence has been received with more than ordinary alarm and often with a feeling of panic. Wild tales are circulated which cannot be traced to a true foundation—tales to the effect that farmers will have to abandon altogether the raising of alfalfa, that land values will deteriorate and many other stories, some so fantastic and unreasonable that one would think they would be given no credence, but which nevertheless are repeated and by repetition aid in creating a feeling of unrest.

The alfalfa weevil should not be thought of as other than an insect of very real importance to alfalfa raising, thus affecting practicallly every branch of western agriculture. It is with us to stay, but in the light of present knowledge we believe it will be entirely possible to control its ravages and that alfalfa will continue the basis of western agriculture and that its raising will be a source of profit to the farmer. We cannot do better than accept the insect calmly when it comes to us and fight it as we would any other pest that attacks our crops.

Home of the Alfalfa Weevil.

Native to parts of Europe, Africa an Asia, the alfalfa weevil has not been considered of special importance there, due possibly to peculiar climatic conditions and to the presence of numerous enemies. Taken from its home and established on foreign soil it has within a few years become the chief insect enemy of alfalfa in the western part of the United States, and appears so readily adaptable that it is probable that in time it will be found in all parts of our country where food plants are available.

Establishment and Spread.

The earliest record of the presence of the pest in this country was when it was discovered in the vicinity of Salt Lake City in 1904. It is probable that it had been introduced there many years previously, but was not found until injury caused by it was readily noticeable. Since 1904 it has spread generally until it now infests the greater part of Utah and the original infested area has widened until it embraces a large portion of southeastern Idaho and southwestern Wyoming. In addition, isolated infestations have been discovered in Colorado and in Oregon. As soon as new infestations are discovered they are reported to the various state and government authorities, but it is not at all improbable that there are localities where the weevil has obtained a foothold that are not now known. How the pest was brought to the United States, or has since made long jumps to isolated communities, will never be definitely known, but such introduction can be reasonably accounted for by its having been shipped in emigrant goods, hay, straw, nursery stock, etc.

In Utah the average rate of spread of the weevil in all directions from the original infestation has been ten miles per year (Farmers' Bulletin 741, U. S. D. A.). In many cases the spread has been greater. In Delta county, where the weevil was first discovered in Colorado, it spread, in some instances, six or seven miles during the past year. This spread has occurred naturally by flight or crawling of the adult weevils.

Plan of Experimental Work.

Owing to the manner of spread of the weevil and its firm establishment in the United States before it was discovered, entomologists in general were of the belief that eradication was impossible and subsequent work has verified this belief. In view of this fact, work against the pest has been, for the most part, in the nature of experimental control, with the idea in mind of evolving practical methods whereby the numbers of weevils in a field may be reduced to such an extent as to insure the production of alfalfa hay at a profit. Experimentation has been confined to small areas, the attempt being to determine definitely control measures which are effective and which can be adopted by farmers generally with the assurance that they may thus obtain protection.

Description and Life Cycle of Weevil.

Contrary to ideas expressed by some growers, the alfalfa weevil is not as large as a mowing machine, nor is it a germ. It is a beetle of the family commonly called the snout-beetles, and is known by the scientific name Phytonomus posticus. Like all beetles, the weevil undergoes a complete metamorphosis, passing successive stages of its development in four different forms represented by the adult, egg, larva and pupa.

The adult is slightly less than a quarter of an inch in length, about half as broad as long, of a general oval shape and, extending downward and forward from the fore part of the head, it has a stout, slightly curved proboscis or beak. When the adult first makes its appearance it is light brown, but as the scales become rubbed off its body and wing covers it later changes to dark brown and very old specimens may appear nearly black.

The egg is about one-thirty-second of an inch in length, yellow, oval, and to the unaided eye appears smooth and shiny. As it becomes older and incubation progresses, it grows darker and at the time of hatching is olive in color, the black head of the developing larva within showing through the shell.

The larva when fully grown is about one-quarter of an inch in length. It is worm-like in form, footless, and when feeding clings to a leaf or stem by curling its body over the edge. It is pea-green in color, with a black head and an easily discernible white stripe extending lengthwise along the back. It is this stage of the beetle that is commonly spoken of as the "worm."

When the larva has reached maturity it spins a light, lace-like cocoon about itself and within this, by a process of gradual development, it changes to the adult beetle.

Seasonal Activity.

In Colorado, adults emerge in small numbers early in June, but it is not until late in the month and during July that large numbers of newly emerged beetles are present in the fields. These lay a few eggs in the fall, a small percentage of which hatches, forming a very light partial second brood of weevils. Winter is passed in the adult form, the beetles seeking protection in cracks in the soil, around alfalfa crowns, under clods, trash, etc. With the first warm days of spring beetles become active and soon begin laying eggs within dry grass stems of the preceeding year's growth. Later eggs are deposited within green alfalfa stems. Eggs may be laid singly or in clusters of many. When the eggs hatch the tiny larvae make their way out of the stems through punctures made by adults and work upward to the tender tips in varying numbers throughout the growing period of the alfalfa. After ceasing feeding, larvae drop to the ground, where they enter the pupal stage usually partly enclosed within a curled, dead leaf. In Delta county larvae are most numerous in June and pupae most abundant in July.

Nature and Extent of Injury in Colorado.

When numerous in a field, larvae destroy the terminal buds and prevent further growth of the alfalfa. It is then that they attack the fully developed leaves and even the epidermis on the stems. Severe loss results from the work of the weevil when it is in the larval stage. Injury becomes easily apparent at about the time the blossom buds of the first crop are plainly visible. Injury then increases rapidly in extent and to save any considerable portion of the first crop in a badly infested field it becomes necessary to cut it early.

After the first crop is cut and is curing in the field larvae which have been feeding upon it are forced to seek other food. Countless numbers of "worms" which have had abundant green food are thus compelled to restrict their ravages to the epidermis on the stubble and to the few remaining green leaves. It is but a short time until there is no food available except the developing shoots of the second crop. As rapidly as new growth

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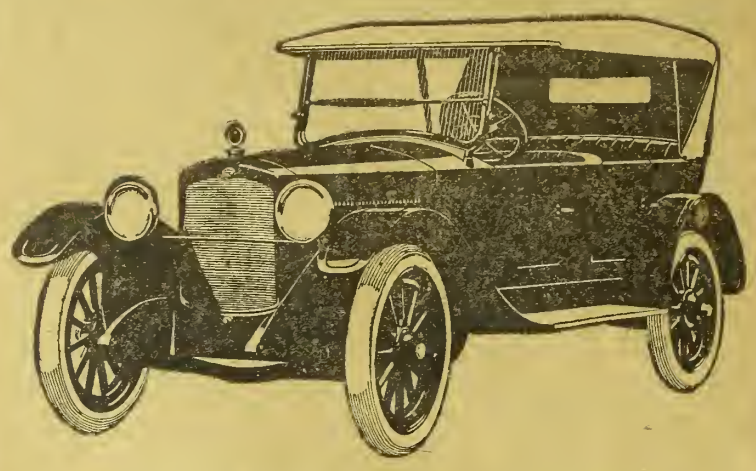

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is made by these shoots it is eaten back. The second crop in a badly infested field is held back from three to six weeks or until such a time as most of the larvae have ceased feeding activity and transformed into pupae. During this time the field is brown and dead in appearance.

Actual injury to the third crop is slight, but owing to the second crop being held back so long the third crop is correspondingly late and the yield thus greatly lessened. Total loss in a year in a badly infested field may equal or exceed fifty per cent of the crop.

Methods of control will be taken up in a succeeding article on this subject.

What Parsons Is Doing.

Mr. E. R. Parsons, whose articles on dry land farming have long been one of the most useful features of this magazine, will continue his good work during 1920. Mr. Parsons is now living at Escondido, California, having sold his Colorado farm, where for about thirty years he worked out in practical application the theories of moisture conservation and soil culture which have given him a world-wide reputation as an exponent of safe agricultural methods for semi-arid conditions. While he has given up the activities incident to large ranching operations, Mr. Parsons is still farming, and still putting in his time studying the fundamentals underlying plant growth under limited rainfall.

At Escondido, where the scant rainfall all comes during the winter months, the dry land farmer must be a past master of the art of moisture conservation. Mr. Parsons' many friends—and he numbers them by the thousands among our readers—will be interested in learning that he is now seeking to develop a drouth resistant corn suitable for the climate of Southern California near the Mexican border. For this purpose he has been supplied with a foundation of Minnesota No. 13 grown by F. W. Haupert of Bennett—some of the corn that won first premium at the Strasburg fair—and a quantity of Swadley. The latter was grown by Oscar Mennenga, a corn club boy at Strasburg. These are to be used in breeding a cross that will meet the peculiarities of the climate at Escondido. The following correspondence relative to this corn test will prove interesting

Mr. Haupert's Letter.

Bennett, Colo., Dec. 15, 1919.

Mr. E. R. Parsons:

Dear Sir—I gave Mr. Steinel four ears of Minnesota No. 13 corn to send you, and as I consider myself a Parsonite farmer, I thought you would like to know how the corn was raised.

The ground was very hard clay, buffalo grass sod, with practically no moisture in it the first of last March; only a few inches on top. We have had four dry years in succession, 8.33 inches in 1916; 10.66 inches in 1917; 14.40 inches in 1918; and we will have less than 10 inches this year. The gauge sets less than 200 yards from this field of which I speak.

The first week in April, I gave this field a good disking, both ways, which made it look like a plowed field. We had no moisture until April 26, when we had a nice slow rain of 2.18 inches rain and snow, and it went into the soil from two and one-half feet to three feet. On the fifth of May, I started to plow it and plowed from eight to ten inches deep, with the disks set to cut only seven inches wide, so I got it well cut up. Followed up with a spike-tooth harrow, with the teeth five and one-half inches through the bars, double harrowed it, which left it in fine shape to take or hold moisture. On June 1, we had .30 inches of moisture, and two days later I gave it a light disking and planted the corn with a check wire planter on the seventh of June. The corn was up in just seven days, and I had planted it four inches deep.

I went over it several times with a weeder, but it was so dry on top that weeds would not sprout. Our first rain came July 1, and we had 4.95 inches in July, but they were all hard, dashing rains that were hard to hold on land a little rolling. That was the last and only rain we had.

I cultivated it twice, the same as old ground, and raised about four tons of good ensilage per acre. I left one acre stand for seed, which made forty bushels, and the ears which were sent to you were picked in the field ninety-six days after planting. I am a believer in thin planting; I only planted two grains forty-two inches apart, and after the cutworms and other pests got their share I had 1½ stalks left on an average.

This year I have old ground that has all been plowed ten inches deep, and I am going to list it one way early in the spring (what I did not get listed last fall), and when the weeds start, I will fill it in with a two-row lister cultivator, and keep cultivating it until corn planting time, when I will list it the opposite way. What do you think of doing it this way?

I would like to ask you through Western Farm Life why fall plowing is not as good as early spring plowing in this community for corn. I have tried it several times and have also seen the same results in neighbors' fields. Corn will start nicer in the spring and look better until the drouth hits it in August, and then it will not stand up with spring plowing. I had thought it was caused by dry fall plowing, but that was not the case last year. To plow deep in the fall and list the corn in shallow in the spring seems to be a good practice, but we were unable to plow this last fall. I hope the corn will prove to be good seed, and that you may be able to grow corn in California.—F. W. Haupert.

Mr. Parsons' Reply.

F. W. Haupert asks why it is that corn on spring plowed land often makes a better crop than that on fall plowed land:

I believe the reason is that the fall plowed land becomes a little too solid by July and August to make the most of the late rains. Land plowed in the fall and lightly harrowed in the spring does not raise good corn, but land plowed deep in the fall and then cross listed, or plowed again as deeply as possible in the spring, has always raised a bumper crop for the writer.

It is the nature of corn to prefer its root bed much less compact than that of small grain, and there would be no reason at all to plow in the fall, if it were not to conserve all the winter moisture possible.

It is the same way with potatoes; it pays to do a double plowing for them also, but small grain not only needs a more dense root bed, but it also matures early in the season, before the ground becomes too heavily packed. Therefore, fall plowing with a little surface work in the spring suits it exactly. This is the difference between spring grain and any of the late crops. —E. R. Parsons.

Pinched Feet Bad for Trees.

Dynamite isn't a commodity that a woman ordinarily enthuses over, but Mary Jane Gregory of Westminster, Colo., has found something to commend itself to her in the big bang stuff. She had a number of 4-year-old locust trees on her place and was anxious to have them grow uniformly, but last spring one of them showed no signs of life. A neighbor was appealed to for advice. His opinion was that the tree was root-bound by the compact prairie soil in which it was growing.

This man happened to be familiar with the use of dynamite and suggested as a remedy for the trouble that a bore hole be put down in the ground about three feet from the trunk of the tree and loaded with a small charge of the explosive.

Mrs. Gregory, in speaking of the result of the experiment, says:

"This shot loosened the soil about the tree and a week or two later it began to leaf out and a few weeks later was ahead of the other trees."

When a man's feet are pinched by shoes too tight for him, he can easily get a larger pair of shoes, but when a tree's feet are pinched by too tight a soil, its plight is serious. Poor circulation is as bad for a tree as for a man. The roots are not only the feet of the tree, but its stomach as well. Impervious, tight soil around the roots, therefore, means more than merely sore feet; it means starvation as well.

If dynamite will relieve trees of troubles such as Mrs. Gregory describes, her neighbor is entitled to the gratitude of tree lovers for suggesting a practical remedy.

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Hudson originated through the Super-Six a principle which added 72% to power and 80% to motor efficiency. It reduced vibration almost to nil and thereby increased motor life. The forces which in other types destroy are in the Super-Six directed to useful employment.

They account for Hudson becoming the greatest speed, hill-climbing and transcontinental car ever built. Its position is not questioned. Everyone knows it.

Hudson Alone Controls the Super-Six

There is little doubt that all would adopt its invention were it not for the patents which Hudson holds.

Think what it means to add 80% to efficiency without increase of weight or sacrifice of simplicity. That advantage was recognized by engineers as soon as the principle was revealed. Everyone admits the unrivaled position of Hudson. Who questions its superior ability in any performance that calls for power, flexibility and endurance?

Further development of the first Super-Six was inevitable. But nothing has called for a change in the principle which gives it exclusive advantage. Improvements have come through refinement and in raising other car units to the standard of its motor.

Each Year Has Seen a Greater Hudson

No one at first realized the Super-Six capable of withstanding such punishment as it has taken in the hardest tests ever imposed on a motor car.

The fastest 100 miles ever officially recorded of a stock car did not show Hudson's limit. So harder tests were imposed. The twenty-four hour run was one; and although a Super-Six stock chassis in that time traveled a distance greater than from New York to Denver, its endurance limit remained unknown. The trip across the continent from San Francisco to New York, in a seven-passenger touring car, was made in 13 hours less time than its nearest rival. And then, since that did not show its endurance limit, the car was turned about and completed a test never attempted by any automobile before or since. The round trip was made in 10 days, 21 hours.

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Each successive Super-Six model has added to Hudson's leadership. Each Hudson has become even more dependable, and now it seems to be as nearly perfect as it is possible to make an automobile.

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The Super-Six motor made Hudson the largest selling fine car in the world. Buyers have always had to wait for delivery of favorite models. They are waiting today. You will surely want a Super-Six sometime within the next year. Now is not too early to order.

Hudson Motor Car Company, Detroit

(H-1)

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Why the Delay.

Because of the installation of a 64-page Hoe perfecting press, a Mergenthaler linotype machine and other equipment; in short, the fitting out from top to bottom of a new publishing house which is now the home of Western Farm Life, the magazine has been late in reaching our subscribers. We wish to thank both subscribers and advertisers for their patience. The delays have been unavoidable, but future issues of the magazine will be out on time. On page 3 of this issue will be found a complete description of the new press and something about plans for the future, from the pen of the publisher. The announcement should be read by everyone, as it makes plain the size of the undertaking which we tackled three short months ago, and which has now been carried to a successful conclusion, at great cost to ourselves and at some inconvenience to readers and advertisers.

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Speaking for the Farmer.

One of the resolutions adopted by the Colorado Farmers' Congress recently favors enactment of a federal law designed to prevent stock losses on the range. The resolution embodies a copy of the proposed law, now pending in Congress. It is not only a decidedly impractical measure but viciously bureaucratic in its tendencies. Whatever might have been the view of the Colorado Farmers' Congress, it is safe to assert that the great mass of farmers and stockmen of the west are not in sympathy with its provisions. Furthermore, favorable action at Fort Collins means nothing, because at the time of the adoption of the resolutions most of the delegates had returned to their homes and there was no chance for discussion of the measure one way or the other. It is simply a bit of propaganda which someone with friends on the resolutions committee succeeded in "putting over."

Right here it might be well to call attention to the fact that the Colorado Farmers' Congress is not a representative body in the sense that its delegates come to the sessions empowered to act for the farmers of the state. The Congress should, in fairness to the farmers of the state, refrain from committing itself on any measure that has not been submitted to the general farm public for discussion or action. The harm comes down at Washington when congressmen and senators are given copies of resolutions adopted by "the farmers of Colorado" favoring this, or opposing that measure. In this particular instance the expression in favor of a bad legislative proposal is not only unauthorized by the farmers of the state, but many of those who attended the Farmers' Congress knew nothing about it whatever.

Group meetings of various agricultural associations held in connection with the Congress have a perfect right to express themselves on any measure affecting their interests, but it is folly for the general body, which is now only an open forum, to speak as though representing agriculture. If there is any body or association now in position to speak for Colorado farmers as a whole it is the State Farm Bureau, which is composed of representatives from the counties.

The problem of range losses is being solved by the men who own the cattle. No sane ranchman wilfully risks starvation and exposure of his cattle in these days of high cost of production. The vast majority of the stock on the range is mortgaged property, and if the grower does not look after his stuff, the banker who furnishes the capital to finance his operations can surely be relied upon to see that his risk is not increased by wilful cruelty or negligence. All but a very small percentage of the range losses are due to natural causes—drouth, sudden blizzards and poison weed. The rangeman takes these risks into account when he goes into business and he seeks to minimize them in every possible way. The three-year drouth in West Texas and the bad years in Montana and other northern ranges took their toll, and no amount of official or officious supervision on the part of federal inspectors would have helped the men whose cattle died or deteriorated from lack of feed. There are occasional exceptions to the rule where there is wilful negligence, but these are not sufficient to induce Congress to saddle another horde of government riders on us, with power to buy feed and take a lien on our cattle for its payment.

There is no danger that the Colorado stock farmer will take the resolution seriously, but this explanation is necessary to help Washington understand what weight should be attachd to action of the Colorado Farmers' Congress. This statement may nullify the expected good effect of a number of other resolutions adopted at the same time. We cannot help that. Western Farm Life has found much that is good at the Congress sessions, but that does not signify that we must approve of the method followed in seeking to make the Congress the mouthpiece of the farmers as a whole.

Following is a copy of the proposed law on which the farmers of Colorado have expressed themselves favorably without their knowledge or consent:

A bill for an act to provide for the conservation of food animals.

Be it enacted by the Senate and House of Representatives of the United States in Congress assembled:

Section 1. Control of conservation of food animals is hereby vested in the Department of Agriculture for the prevention of the loss of meat food by starvation, neglect, exposure and other unnecessary hardships of food animals.

Sec. 2. The department may appoint such agents and inspectors as may be necessary for the purpose of investigation and enforcement. It shall ascertain the extent of loss due to such causes among food animals, loss of weight and condition of stunted and arrested growth, with the number and location of animals so affected, and shall fix the responsibility therefor and establish the remedies.

Sec. 3. The department shall have the power to make and enforce such regulations requiring the feeding and care of such animals and provisions therefor and for the prevention of neglect, exposure and other unnecessary hardships as may appear necessary in each case, including the transportation of food to such animals or the transportation of such animals to food, and shall have a lien upon such animals for the cost so incurred.

Sec. 4. Whenever any person, persons, firm, company or corporation shall willfully or negligently fail or refuse to comply with the order of the department in the courts, and if found guilty may be fined in the sum of not less than $100 nor more than $5,000.

Sec. 5. The sum of $100,000 or as much thereof as may be necessary, is hereby appropriated for the use of the department in carrying out the provisions of this act.

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That Packer Compromise.

A circular letter sent to the press by Mr. Edward Morris of Morris & Company, one of the Chicago packers, commenting on the agreement reached with Attorney General Palmer for a segregation of the packing business from all side lines not related to the meat trade, contains food for thought. Mr. Morris says: "Also our handling of staple groceries was sound economically and in the interest of the public generally because our operations in these lines utilized our present facilities during the slack season, furnished the retailer excellent service and reduced our overhead operating expense, and if this business is taken away either the livestock producer must get less for live meat animals, or the consumer must pay more for meat."

That is to say, in other words the packer loses nothing except the volume of business in side lines. If by reason of the compromise the meat business is to become less profitable the difference must come from either producer or consumer. This is a frank statement of the fact that the packer's organization and control of markets is so complete that he can say, in advance, that no loss can come to him, should the compromise result in advancing costs anywhere along the line.

The usual answer to the question as to who fixes the price of meat animals is "supply and demand." To that the producer and consumer have been saying: "We are supply and demand and precious little have we to do with setting prices."

The producer does not even have an asking price when he comes to market with his animals; he takes what the quotations say his meat is worth. The consumer picks his cut from the retailer's counter and pays for it at the retailer's figure. He has no voice in the transaction. The packer says demand fixes the price and he has a way of anticipating that demand by reason of his perfect machinery of distribution. The producer has no such means of anticipating what the demand is to be. He raises feeds and finishes his animals comparatively in the dark. His labor cost and his feed cost are not factors in the settlement he makes at the yards after he markets his stuff. To him supply and demand are mere illusions. Sometimes they work in his favor, and sometimes not. What he would like is some of the certainty which enables the packer to say what Mr. Morris has said, in effect, "we can't lose either way the cat jumps."

But will government control of the industry provide assurance of a fair profit for the producer? There is a way of settling the question equitably. Cost of production plus a fair profit is all the producer asks; the packer is entitled to a fair profit, and the consumer should have meat at a reasonable price commensurate with its value in relation to other food products.

The public recognizes that the days of cut-throat competition are gone, but unrestricted and unrestrained monopoly is even less desirable than the old order.

We may hope for a solution in the revised Kendrick-Kenyon bill which now provides for regulation by a body modeled after the Interstate Commerce Commission, instead of the objectionable feature of putting unlimited power into the hands of the secretary of agriculture.

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Going to Witch's Island?

In these chilly days of midwinter it will be pleasant relaxation for all of you, no matter where located, whether out on the prairies, or up in the snowy mountains, to take a voyage to southern waters, with a merry company of adventursome spirits. Turn to page seven of the present issue and board the schooner Zenobia for a trip to Witch's Island. This excursion is being personally conducted by Mr. W. T. Nichols. We have made the trip with the characters of his creation and, believe us, you'll enjoy it. There are thrills in every chapter; there's mystery on every page, but like all good stories there is a happy ending. Our guess is if you start with us you'll stay aboard till the Zenobia makes the home port.

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Increase Loan Capacity.

The Federal Farm Loan banks have been operating under the restriction to loan not to exceed $10,000 to any one borrower. They have done a large business and have proven their worth. The limit, however, is too small for loans in the great Mississippi valley where farms are worth from $200 to $500 an acre and the size of farms averages around half a section.

The Farm Loan banks are in competion with the joint stock banks that can loan to any limit. The farmers are compelled in this territory to borrow of the joint stock banks at six per cent on sums above $10,000 which divide their profits among private owners, whereas they could have by borrowing of their own Farm Loan banks if the law permitted the banks to loan up to $25,000 instead of $10,000. The law should be amended by congress at the earliest possible moment and will be if the needs of the farmers are fully understood by congress—Successful Farming.

Let Western Farm Life Service Bureau help solve your farming problems. All questions promptly answered.

The Branding Iron

During the last five years we have saved $91.25 because of the increase in the price of shaves.—Sunflowers Column, in Kansas Industrialist.

What do you mean, saved? Are you a lady, or do you wear whiskers?

* * * *

Crosman informs us via News Notes that "Coprera is a small rocky Italian island separated from Sardinia by a narrow strait." Gosh what a relief! How many times have we wondered what, where, which, who and why Coprera was. * * * *

Short courses in agricultural and engineering subjects opened the first day in the year at Kansas State Agricultural college with an enrollment of 120 in agriculture and 180 in engineering, mostly Kansas farmers who are taking advantage of this opportunity for eight weeks of intensive training in practical subjects. We need more of this work at the agricultural colleges in all western states.

* * * *

That wool gains in weight through absorbing moisture en route from the arid country of the west to the eastern markets is another thing that the growers have learned by shipping direct through wool pools. A gain of 104,000 pounds in one season's shipment meant $52,000 to the grower which formerly went to the handler, in addition to his regular profit. Co-operation pays.

* * * *

The county agricultural agent in Navajo County Ariz., reports visiting a stockman who was filling a pit silo with a homemade contrivance. The knives of the cutter are homemade and set at an angle to the drive shaft after the fashion of a lawn mower. The driving gear was made out of the gear of an old mower, and belted to a gas engine. A large mower wheel served as a fly wheel.

* * * *

"The pupils are weighed and measured monthly in the attempt to bring them as nearly as possible to a condition of normal health." The above is a quotation from the report of a county home demonstration agent in Wyoming. We have mentioned this subject before. It is a dangerous adventure for the Department of Agriculture to invade the field of medical inspection, especially in the public schools. Farmers are quick to resent paternalism in any form. Our agricultural colleges are not giving doctors' degrees to the young women graduates in home economics. The farmer is paying taxes for the upkeep of the Department of Agriculture and he doesn't want any branch of its work run as a sideline to the medical propaganda that is constantly emanating from the Bureau of Health at Washington. That may have merit but it has no place in agricultural work.

* * * *

"The world do move," as the colored preacher said. Another evidence of this may be found in the invitation from Percy Houts, Secretary of the Colorado State Stock Growers' association, to the sheepmen in their group meeting at the Farmers' Congress, to join the cowmen in efforts for general betterment of the livestock industry. It isn't so very long ago that cowmen and sheepmen crossed the road to avoid each other; and there have been times when one or the other would seek the far side of a big tree when he saw the other fellow coming down the gulch. We are all finding out things about the other fellow that are to his credit and today no group engaged in any branch of agriculture is getting anywhere by fighting another group. It's "pull together" now, on the range as well as on the farms. That's the only sound doctrine.

"jan. 20"

If the label on your magazine reads "jan. 20" your subscription expires this month. You, no doubt, intend to renew. By doing so at once you not only extend us a big favor, but will make sure that you will not miss a single issue of Western Farm Life.

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We appreciate your past subscription and hope you appreciate our magazine enough to renew now.

WESTEN FARM LIFE,
Denver, Colo.

Comment by Farmer Putnam

JOSEPHINE FUSSES BECAUSE OUR MISSOURI FRIEND WANTS TO BUY A TYPEWRITER.

ME and Josephine's been a-havin' another rumpus. It's because of her tarnel jealousy again. She's a fine woman, Josephine is, but she ain't up to date in some ways. This here world's been goin' ahead fast in the last twenty-five years and I been tryin' to keep up with it. Well, as long as we lived on our farm near Stockbridge, Mo., and I never got away exceptin' to the Royal at K. C. and to St. Joe on business with a load of hogs or steers why we never had no trouble. Then I got to writin' letters fur the St. Joe papers and by and by we come out here to Colorado a-visitin'—that was in nineteen-eight—and one of them Denver papers got me to write up the farmer's short course at Fort Collins and from then on I begin to kind-a let up on farmin' and took up literary work and then Josephine got kind-a sore. Not that she stays that way all the time, but every time I want to put in some modern improvements she kicks.

Our latest trouble is over me tryin' to git a typewriter. Since I been writin' fur Western Farm Life my mail keeps gittin' bigger'n bigger'n and I don't have time to write to all the folks that writes to me, so I decided to git a typewriter. Of course I never do nuthin' important without consultin' her, so I sez

"Josie, you know farmers has got to be up to date as well as city people nowadays. The day when we could be called hayseeds is past. Don't you think so?"

Josephine is as wary as a mountain trout when you throw out any bait to her and she sez:

"Well, Tom, I reckon we're about as up to date as any of 'em."

"Yes," I sez, "but we cain't stand still; we got to keep on makin' improvements. The farmer that don't keep goin' ahead in these here strenuous days is fallin' behind; we cain't set still."

"I reckon," she sez, uncommittally, so I had to make more conversation and I sez:

"Josie, I cain't keep up with my correspondence any more and I ought to have a typewriter."

"Typewriter!" she sez, "no you don't Tom. You ain't a-goin' to bring no gal into this house as long's I'm alive!"

"Gal," I sez, "who said anything about a gal? I mean a writin' machine; a typewriter."

"Well who'd run it?"

"I reckon I'd do it myself."

"Shucks, you'd bust it fust thing."

"Maybe I would. Maybe I'd have to git some young feller to run it fur me; it wouldn't cost much."

"Now Tom," she blazed up, "you might just as well stop talkin' foolish right now. I've knowed what you was up to fur three weeks. I seen them circulars from the typewriter agent and what it sez about ribbons, and askin' whether you wanted blue ones or black ones, and then you try to tell me that you ain't been thinkin' about gittin' a typewriter gal and not a machine! Do you think I cain't read? Machines don't wear ribbons. If that agent comes out here from Denver with one of them fluffy-fuzzys in his car and thinks he'll git a job fur her on this ranch I'll ship 'em both back to town so quick it'll make you dizzy."

"Josie, don't do me no unjustice; you're wrong, I don't intend to hire a gal, I was gittin' prices on machines."

Well, I finally got her cooled off a little, but do you think she'd let me order a typewriter? No, she sez: "I don't even want to look at one of them machines, after I seen the gals that runs 'em in the Western Farm Life office. Why them young ladies look like Hindoo savages; they hain't got no ears; leastwise their hair is draped down over 'em so's you cain't see no ears, and they wears waists as flimsy as angel wings. If I let you buy a machine it wouldn't be long till you'd want to be movin' to town and puttin' up the machine in the Western Farm Life office, so's you could dictate to one of them thar birds in fine feathers. No Tom, if they is any machines bought this winter it'll be a dishwasher, or a lectric iron. It won't hurt you to knock off writin' when your hand gits cramped; thar'll be that much less foolishness to read."

So I guess I'll have to wait awhile before I kin git a typewriter. Some of the folks that reads this here page thinks I've got all them modern improvements. I got a letter the other day from Vona, Colo., signed S. B. marked "For T. J. Putnam's desk." I wisht S. B. could see my desk; it's a common kitchen table. Josephine don't allow me to write on the parlor table; she's afraid I might git a ink spot on the table cover which has got a tattooed edging of lace that she tatted herself. S. B. sez if I ever come to Kit Carson county to stop off at Vona and "blow the town up." He sez it needs blowin' up. I don't think so. The last time I went through thar a live prairie breeze was doin' a fine job of blowin'. I was headed west and I couldn't tell when I got out of Stratton, or passed through Vona and into Seibert; the dust was so thick, everything was just one streak. Either the wind or S. B. will have to quit blowin' when I come by that way ag'in if they want me to stop at Vona.

Now next I got a letter here from J. Lancaster, prop. of the Sunflower Ranch, Kit Carson, Colo. That's over in Cheyenne county. J. L. writes: "I am an old man, only one leg and no teeth and can't see very good, and I will inform you that I have my daughter read your little editorial to me just about as soon as the paper comes."

He goes on that way boostin' me and the paper till he gits down to the third page in his letter and then he sez he don't think much of our editor, because he sent the editor a invite to have Farmer Putnam come down to the sunflower ranch and eat watermelon last fall and the editor wrote he would send the Farmer, but nobody ever showed up.

You're right, J. L., the editor never told me nuthin' about your watermelons. You see he was figurin' on goin' to the fair at Cheyenne Wells and stoppin' off at Kit Carson and eatin' them melons hisself, but I reckon somethin' turned up so's he couldn't go. Well J. L., I've got your invite now and, the Lord willin'and Josephine permittin', I expect to be over in your neighborhood about melon time next summer.

That reminds me how we used to do back in Missouri; I reckon I ain't a-tellin' you nuthin' new J. L., because you lived in that state onct. About melon time us young fellers used to spike a few of the melons with "honey dew" and lay 'em in the crick to cool off till evenin' and then about sundown we'd have a little melon party. Gosh them was happy days, wasn't they J. L.?

I wisht I could meet John Q. Smith of Rosebud, Mont. He's a man after my own heart. I ain't a-goin' to tell all that was in his letter, because Mrs. Smith might think he was givin' away family secrets. That's all right John, I know just how it is. Josephine goes after me every chanct she gits. You see it's this way: when a woman gits along in years and the children has growed up and is married off and nobody is left around the house exceptin' the cats and the old man, why the motherin' instinct is just as strong as ever and naturally they go after the old man. Fust it's because he don't keep his coat buttoned when he goes outside, and then it's because he drops his cap on the clean counterpane, and next it's because he spills jam on the tablecloth, or he don't wipe off his overshoes when he comes in from the corral. Gosh John, hain't I been through it? They hain't got the youngsters to manage and the burden falls on us. All we kin do is to grin and bear it.

Mr. Smith writes me: "We are havin' very mild weather here at present. We had a very bad October and part of this month (November), but the snow is all gone and the frost is about all gone out of the ground. It is going to be very hard on us here this winter. I did not get anything out of our crops to speak of. All I raised was about six tons of alfalfa hay off 25 acres, and three bushels of sweet clover seed and two bushels of alfalfa seed. My wheat and oats never got two inches above the ground and my potatoes just burned off in the ground and my corn crop was a total failure. This is my third year and nothing to show for my labor and now they want me to make out an income tax sheet! With everything going out and nothing coming in how can I do it?"

And still some people sez the farmers is profiteers! They ain't no business so uncertain; sometimes we git crops and sometimes we don't; we just keep right on workin' our fool heads off and never git discouraged, just like the old Arkansaw farmer I heard about. He was settin' on a stump when a stranger rode by and sez:

"Mawnin' stranger, how air you-all?"

"Tolerable, Mister, jes' tolerable."

"Things goin' purty well with you?"

"Fair to middlin', but could be better."

"So? What's happened?"

"Oh my corn got burned up by the dry weather, the weevil got my cotton, my mule died of distemper, my wife is sick of the ager, two of the children is down with croup, my chicken house was washed away by the flood last night, and the mortgage is past due. If I have any more hard luck I'm afraid I'll git discouraged."

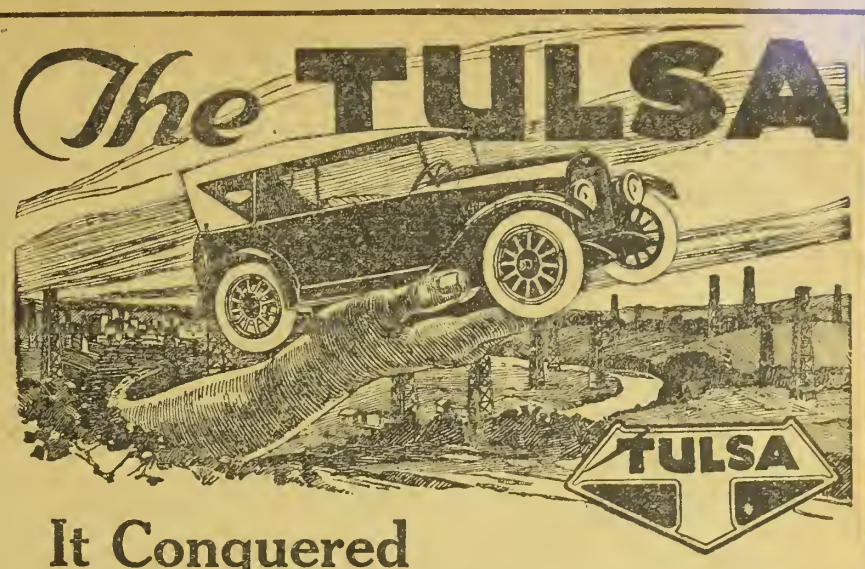
We keep right on producin', and kickin' and fussin' knowin' that if we don't make money we'll git our reward in heaven.

Thos Jefferson Putnam

Complete Reformation.

"Will you have some bay rum?" asked the barber.

"No," answered Uncle Bill Bottletop, "I'm goin' to be thorough. I'm not goin' to let rum in any form go to my head."—Washington Star.



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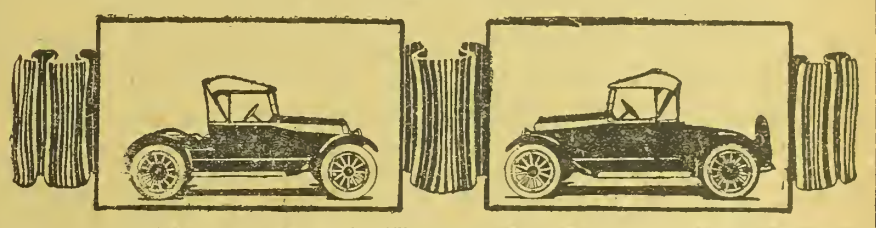

Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE. Denver, Colorado.

Cannot Get Grain Threshed.

Ans. to L. R., New Mexico: There is no way in which you can compel the owner of a threshing outfit to thresh your grain. During the war, the Food Administration had charge of this work in various counties, and while threshermen were not actually compelled to do the work, pressure was brought to bear on them to so organize their labors, that no grain would be overlooked. However, under present conditions we do not know what suggestion to offer. If, as you say, there are several others in your neighborhood who have grain to thresh, it might be well for you to act together and seek to pursuade the owner of the outfit to come to your section. You could gain nothing by instituting a damage suit, as we know of no law in New Mexico that would protect you in this matter.

About a Federal Loan.

Could I get from the Federal Land bank a loan of about $2,500 to $3,000 on land and improvements and $800 worth of livestock on a dry land farm of 160 acres, with 80 in cultivation and fine improvements? The place is worth about $4,000.—E. M., Colorado.

The law allows the Land banks to make loans up to 50 per cent of the value of the land, plus 20 per cent of the insured value of improvements. It has been customary, however, to limit the loans on land to 40 per cent of the appraised value. On a farm worth $4,000, therefore, all you could hope for would be about $1,500, providing the land is appraised at $3,500 and improvements at $500. You should apply to the Federal Land Bank, Wichita, Kan., for more complete information. The bank in Wichita serves the district which includes Colorado.

Regarding Division Fence.

Answering G. P., Washington county, Colo.: The law provides that each of adjoining land owners must build one-half of the division fence. Following is a quotation from the law: "Section 2590.—Partition Fences.—Where the lands of two parties adjoin and both persons shall occupy the land either for pasture or farm purposes, that it shall be the duty of each party to build one-half of the line fence, such line fence to be a legal fence, as described in section 1 of this act; and that where one party shall have already erected a legal fence as herein defined on any line between himself and any other party, and the other party wishes to occupy the land adjoining, it shall be the duty to either build one-half of said legal fence or pay the party owning said fence one-half of its cash value."

The law says nothing about the kind of fence your adjoining neighbor must put up on the sides of his land that does not join yours. If he has put up his half of the partition fence according to legal specifications you must do the same, or pay him for doing it for you. You may put up any kind of a fence that comes within the legal specifications and he can do the same, but you cannot compel him to put up exactly the same type of fence on his part of the line as you put up. There is nothing, so far as we know, to prevent you making your half hog-tight and nothing to prevent him making his half a lawful three-wire fence, as long as both types meet the lawful requirements.

Must Support the Children.

Answer to A. B., El Paso County, Colorado:

1. If you mean by homestead a homestead entry on the margin of the record properly made, such a homestead may not be conveyed without the signature of the wife. Such a place must be occupied as a home. The wife cannot get to exceed $2,000 as her homestead exemption unless the husband agrees to give her more.

2. The man must support his children under age. Neither the divorce, nor his leaving the wife has anything to do with the support of the children.

3. If a man dies in Colorado without a will, half his property goes to his wife and half to the children; if no children, then all to the wife. A man may not by will leave more than half his property to any person except his wife. She is entitled to at least one-half.—Hamlet J. Barry, Attorney, 724 Equitable Building, Denver.

Concerning Exemptions of Wife.

1. If there is a judgment against A. and he owns no property, real or personal, can A. move into another state?

2. Can such judgment be laid against A.'s wife's half interest in a house, an acre lot, or can any other book accounts which A. may have be held against Mrs. A.'s half interest? If so, what would be Mrs. A.'s exemption?

3. Could A. take any exemption into another state?

4. In case A. should die, could such judgment be laid against his life insurance—Subscriber, Colorado.

1. Yes, he may move regardless of the judgment.

2. The judgment cannot go against his wife's half interest. If Mrs. A. owes Mr. A. money she may be garnished in aid of execution. Mrs. A. cannot be made to pay Mr. A.'s bills, excepting for necessaries; that is, household expenses, doctor's bills and the like. Generally Mrs. A. has a $200 exemption and in case of a homestead, exemption $2.000.

3. Each state has its own exemption law. A. would not carry an exemption with him, but he would come under the exemption law of the new state.

4. If the proceeds of the life insurance policy go to the beneficiary other than the decedent, no; if the insurance is payable to the estate of the decedent, yes.—Hamlet J. Barry, Attorney, 724 Equitable Building, Denver.

A Homestead Exemption.

Answer to J. B., Adams County, Colorado:

So near as I can gather from your question you are probably confusing a government homestead and a homestead exemption under the Colorado law. Apparently you received your patent from the government. If you were living on the place you would have a right to "homestead" the place, that is

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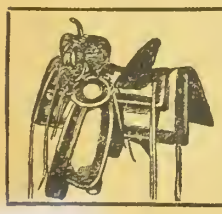

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enter it as a homestead upon the margin of the recorded instrument which gave you title. If you had so entered the "homestead" you would be entitled to a $2,000 exemption from execution levy and attachment.—Hamlet J. Barry, Attorney, 724 Equitable Building, Denver.

Beet Pulp More Profitable.

Which is the more profitable, to feed cattle on beet tops and pulp, or to feed corn ensilage? Would you advise taking cattle from the pulp feeding pen and feed ensilage, or to take them from the ensilage and feed pulp?—L. L., Weld County, Colorado.

Beet tops and pulp are usually more economical than corn silage as a beef feed, where one is not too far away from a sugar factory. The expense of transportation should be the deciding factor. Corn silage contains the grain which is very valuable; however, the pulp fed steers have shown the greatest economy of gains where it was tried out against corn ensilage. I doubt the advisability of changing the pulp fed steers to corn silage unless you are a long distance from the factory. Corn ensilage is an extremely valuable feed but it cannot compare with pulp when that is available.—H. A. L.

Treatment for Smut.

Ans. to B. F., Yuma County, Colo.: Stinking Smut, or Bunt.—Bunt is the most destructive smut of wheat. It is more common than loose smut of wheat. Bunt is exclusively a kernel smut. The contents of the grain of wheat are entirely replaced by a powdery mass of black spores. The spore mass or "smut-ball" is rather hard. Bunt usually is not noticed until the heads are mature. As a rule, all grains of a head, and all heads of an infected plant are smutted. Smutted grains, as compared with healthy ones, are darker in color, lighter in weight, plumper and more easily crushed. When the smutted grain is crushed, numerous black spores are liberated and the grain gives off a characteristic decayed fish odor. The spores get on healthy grain usually at threshing time; the smut-balls are crushed in the thresher. A few broken smutted seeds can contaminate a large amount of healthy grain. Spores are carried from farm to farm by threshing machinery and by wind. Bunt affects both spring and winter varieties of wheat. The spores of bunt will not cause smut in oats, barley, corn and sorghum. The smuts of these cereals are distinct.

Control.—The object of seed treatment is to kill all bunt spores clinging to the outside of healthy grains. Bunt spores are carried into the ground with the grain of wheat, the young seedling is infected and at maturity the heads of the plant are smutted. Before treating seeds with formalin, place them in a tub or barrel of cold water, and stir. The lighter smutted grains will come to the top and may be skimmed off. Smutted seeds may also be fanned out with a good fanning mill. The easiest and most efficient seed treatment is the formalin sprinkle. This is done as follows:

(1) Formalin is a solution of formaldehyde gas in water. It usually has a concentration of about 40 per cent. Ask for this strength. Formalin may be obtained of any druggist. Put 1 pint (1 pound) of formalin in 45 to 50 gallons of water. Stir thoroughly. Use this material when fresh; it deteriorates with standing.

(2) Put seed wheat to be treated on clean hard barn floor, or in a wagon box, or on canvas. The floor, wagon box, or canvas, should be cleaned with a strong formalin solution, or with boiling water. Spread grain out a few inches deep.

(3) Sprinkle solution over grain with ordinary garden sprinkling can. Use about 1 gallon of solution to each bushel of grain.

(4) Shovel grain over and over. One person can handle the sprinkler while another thoroughly mixes the grain.

(5) Shovel treated grain into a pile and cover with canvas or gunny sacking that has previously been dipped in formalin solution or boiled in water. Leave covered for two or three hours.

(6) Spread grain out not more than 2 inches deep and allow to dry.

(7) Treated grain, if not planted directly, should be kept in smut-free sacks or bins. Disinfect sacks or bins with strong formalin solution or boiling water. Drills may be disinfected by washing out with strong formalin solution.—W. W. Robbins.

Why Joe Left Home

"Dear Joe: Come home. Forgive and forget. I have destroyed the book of war-recipes.—Violet."—Tit-Bits.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Bull Will Not Breed.

Ans. to E. G., Adams County, Colo.: The loss of sexual desire is due to old age, debility from disease, overfeeding, emaciation, excessive fat, lack of exercise, or it may be congenital (inherited weakness). It is very important that breeding animals be kept in proper physical condition by avoiding the feeding of too heavy or too light a ration, and allowing them sufficient exercise. There may be some malformation or disease of the genital organs and for which there probably will be no cure. The total lack of desire would indicate disease of the brain and spinal cord, or to general weakness of the body as the result of chronic disease. He may be suffering pain, the cause for which is obscure. Try feeding grain, an opportunity for exercise, and 1 dram powdered nux vomica, twice a day mixed with the feed. Look the bull over carefully for disease.—G. H. G.

Paralysis of Hind Quarters.

Please tell me what is the matter with my hog. This shoat lays on its hind quarters most of the time and seems to be stiff on its hind legs. What shall I do for him?—M. L., Conejos County, Colo.

The hog apparently has paralysis of the hind quarters. This is quite a common condition of hogs and the cause is at present unknown. It has been variously ascribed to food poisoning, inbreeding, unbalanced ration, neuritis, parasites, etc. Treatments have not been satisfactory and only in case of very valuable hogs would it be worth considering. When the first symptoms appear the general health appears not to be disturbed and the animal may be slaughtered for food. This rather offends the esthetic sense, but otherwise there can be no objection to the meat for food, assuming of course, that the animal is otherwise healthy.—G. H. G.

Dilation of the Esophagus.

I have a horse about 6 years old. The lower part of his neck is swollen, either the windpipe or at side. He eats well but does not thrive and is getting poorer right along. He takes spells belching and slobbering. These spells come more often now. He runs on grass and we feed him corn, oats and cotton cake besides. A veterinary has prescribed for him Fowler's Solution and liniment, and blister on his neck, but this did not help.—J. F., Otero County, Colo.

The horse probably has dilation of the esophagus, or in other words, a permanent localized enlargement of the gullet, caused by dilation of the wall in its entire circumference, or on one side. It is caused by injury to the wall of the esophagus by rough or pointed foreign bodies, by a previous obstruction (choke), tumors, abscess,etc. In exceptional cases this saculation of the gullet occurs without any obvious cause. Food accumulates and swallowing is difficult. It usually occurs at the point indicated and gradually becomes worse from the pressure of accumulated food. The swelling is usually on the left side of the neck in the jugular furrow, is doughy in consistency, and becomes larger after each meal. A surgical operation is rarely successful. The horse will do better on soft food. If I have the correct diagnosis, the case is practically hopeless.—G. H. G.

Should Call State Veterinarian.

What is the matter with my horses? First they get sore mouth and begin to get thin, finally in a month or six weeks being so weak in the back that they can't stand up, but just lay in the barn until they die. I have lost six that way. I have no loco in the pasture. Have a good barn and plenty of feed and do not work my horses too hard. I can't figure out what is the matter.—J. J., El Paso County, Colo.

The disease may be necrotic stomatitis, or it may be swamp fever, or again it may be something entirely different; I have no means of knowing. However, since your losses have been heavy and there is some evidence of its being contagious, you should without delay call the State Veterinarian, at the Capitol building, Denver, who no doubt will make immediate investigation. The college will gladly co-operate if a special investigation is thought necessary. The regulatory work of animal disease control rests with the State Veterinarian, while the college veterinarians are occupied with teaching in the veterinary college, conducting investigations under approved projects, and assisting the state and federal officers in the investigation and control of animal diseases, whenever called upon for such assistance.—G. H. G.

He ended the sermon with these words: "My boys, in hell there are nothing but chorus girls and whiskey."

A tired voice in the rear was heard to murmur, "Oh, death, where is thy sting!"—Eastern Dealer.

Practical Tractor Facts

THE 1920 "Ten-Twenty" that is going to outdistance all other tractors not only in the matter of nation-wide popular demand, but also in general satisfaction to the farmer, is the **Titan 10-20.**

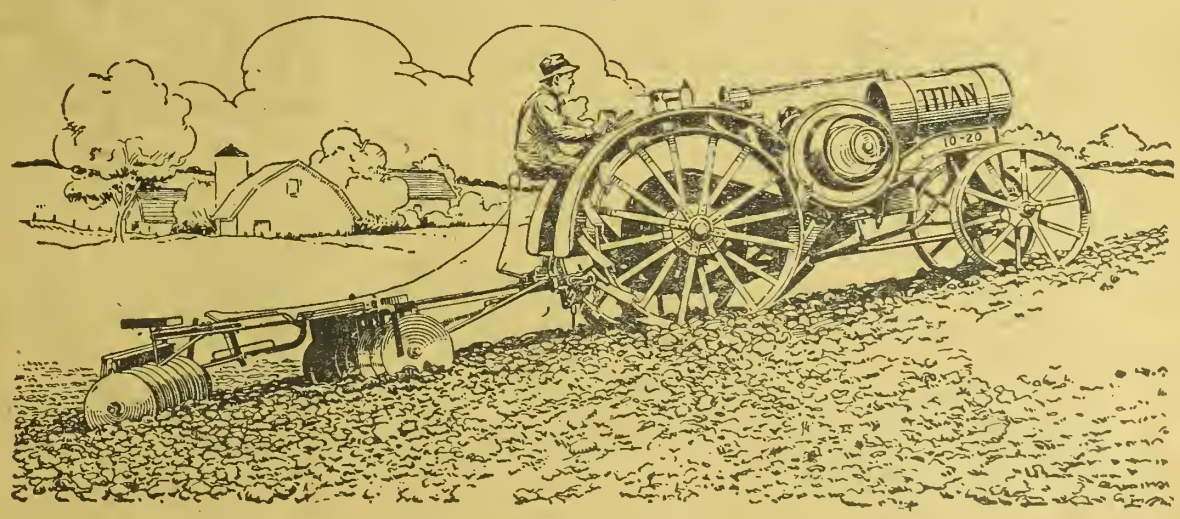
Titan 10-20 Features

1. **Wide friction-clutch pulley**
2. **Economy throttle governor**
3. **Adjustable drawbar**
4. **Safety fenders**
5. **Comfort platform**
6. **Sixteen-tool set**
7. **Free starting-instruction service**

In five years' time a great many thousands of Titan tractors have been manufactured at the great Milwaukee Works, the home of the Titan. Practically every one of these tractors is in use today. They are serving not only the farmers of America, but also thousands in Europe, rebuilding the dormant war-torn acres that are hungry for crops.

With so great a number of Titan 10-20's in active use — setting so many good examples to farmers in need of right power — it has been necessary to enlarge the manufacturing facilities to meet the rapidly developing demand for this most popular of popular tractors. The scene at the tractor plants is one of night-and-day activity, with 5,000 men on the job. It is probable that, by the time this notice appears, producing volume will have been increased sufficiently to enable you to get a **Titan 10-20** for early spring delivery *if your order is placed at once.*

There has been no increase in price. **Titan 10-20** is available for you at the 1920 price fixed last July **—$1,000 cash, f. o. b. factory.** See your International dealer.



International Harvester Company of America
(Incorporated)
Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

Dry Land Fruit and Shade Trees

MOISTURE MUST BE STORED BEFORE PLANTING.

E. R. PARSONS.

THE safest way to start trees on the dry farm is to conserve enough moisture to carry them through the first season so as to be entirely independent of the rainfall. If we take chances on dry or partly dry ground and the precipitation during the growing season is light, the trees may never leaf out.

Plenty of moisture may always be secured by plowing the land a year ahead of time and clean fallowing it until ready to plant. Sometimes sufficient moisture may be conserved by fall or winter plowing; it all depends on the season. The way to find out is to dig down into the soil and ascertain how far the moisture has penetrated. If it is down three feet, it is quite safe to plant; if it is down two, it is safe to plant if the season proves to be about normal.

It is not recommended ever to plant trees in newly plowed sod. It is usually dry underneath and sod or trash of any kind is bad around the roots, for they cause air cavities which may dry them out and kill the tree. It is also advisable not to plant trees too close to water. Water at ten, fifteen or twenty feet is good for apples and will not hurt cherries and plums, because the roots at this depth will not go into the water itself, but will luxuriate in the damp soil above, which is kept moist by the capillary rise.

Too much water is supposed to cause winter killing. It is not the water so much as the way it is applied. A heavy irrigation in the fall when the trees have been too lightly watered during the summer, may cause a sappy condition of the bark, the abnormal swelling of buds and even a new growth; all of which increases the chances of winter killing. But when a tree has sufficient moisture throughout the season it is able to choose its own time for growth, which will naturally be in the early part of summer, rather than in the fall. In a dry farm orchard properly cultivated the trees have a steady supply of moisture and seldom winterkill.

When young trees are just planted they use up very little moisture. Four cubic feet of dirt carrying fifteen per cent of water, with two or three showers during the growing season will keep one alive and growing.

The more room between trees, the more moisture they will get when the roots become long enough to reach it. For this reason we recommend 35 to 40 feet spacing for apples, 20 for cherries and plums and 8 to 10 feet for small fruits. It will then be some years before the roots can exploit all of the soil between the rows and during this time the moisture reserve is increasing at the rate of several feet per annum, until after six or seven years there may be 10 to 12 feet of wet soil between the rows where originally there was nothing.

If the trees ever suffer for moisture it will be when they get big, but even this can be easily remedied by cutting them back to a smaller size. In my dry farm orchard on my ranch near Parker, there were some Ben Davis trees 20 years old when I sold out in 1914. Those that were planted 20 feet apart had small leaves and apples, but where trees had been dug out and the others cut back, the latter were thrifty and developed full sized fruit.

Other trees which had plenty of room from the start did likewise, and for this reason we figure that 40 feet is not any too much for apple trees. In preparing the ground for planting, it is a good way to plow out the rows and dig the holes in the dead furrows. A certain amount of drainage from the interspace is caught in the hollows after heavy rains and this is of some value to the young trees. Repeated cultivation eventually fills these depressions and levels up the whole orchard.

Shade trees may be raised very easily in the same way as fruit trees, the idea being not to pot hole a tree here and there, but to plant a whole row and thoroughly cultivate.

For windbreaks it is much better to plant 3 or 4 rows with the trees far apart than to plant only one row with the trees close together.

Order Trees Early

When ordering trees from a nursery it does not pay to wait until the last minute. The early orders get filled first and with the best trees. All orders should be sent in shortly after the first of the year and should arrive for planting about the middle or latter part of April. Trees should not be baled except for a very short trip. When properly packed in paper lined boxes, a journey of two weeks or more will not hurt them. As soon as they arrive at the destination they should be unpacked and if the roots are at all dry should be well sprinkled and then heeled in in moist dirt. From the time a tree is dug until planted, the roots should be kept moist and protected from the air. Neglect of this precaution is the main cause of loss in transplanting.

Trees should always be planted an inch or two deeper than they were in the nursery and it is most important that the soil should be well worked in, under and between the roots, so as to leave no air spaces, and then tamped as solid as when setting a post, leaving an inch or two of loose dirt on the surface.

Care, of course, must be taken not to injure the roots, but there is little danger of this if the heavy tamping is done when they are protected by two or three inches of dirt. A pretty solid bed is necessary for the roots because the hairs cannot wipe the moisture films off the granules without considerable pressure. The root hairs squeeze between the granules and absorb the moisture. If there is much of a space between them this action cannot take place for lack of the pressure obtained by the root forcing its way through lightly compressed granules.

There are plenty of fruit trees that will do well under dry farming conditions. The principal point is to plant the varieties which stand the climate. Nearly every apple has been grown by somebody in some location and it

NOW is the Time

To Look Into the Fence Question

If you want fence that won't sag, bag or buckle—that resists rust, that will give permanent service—if you want a "Square Deal" when you buy fence, then buy

Square Deal Fence

Made of quality materials that give continuous service year after year, —fencing that stands up in every respect. It is built to make good and does it.

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One Man One Team

Have water on your own farm. In spare time make wells for your neighbors. It means $1000 extra in ordinary years, double that in dry years. No risk—no experience needed.

Outfits for Getting Water Anywhere

Earth augers, rock drills and combined machines. Engine or horse power. *Write for easy terms and free catalog.*

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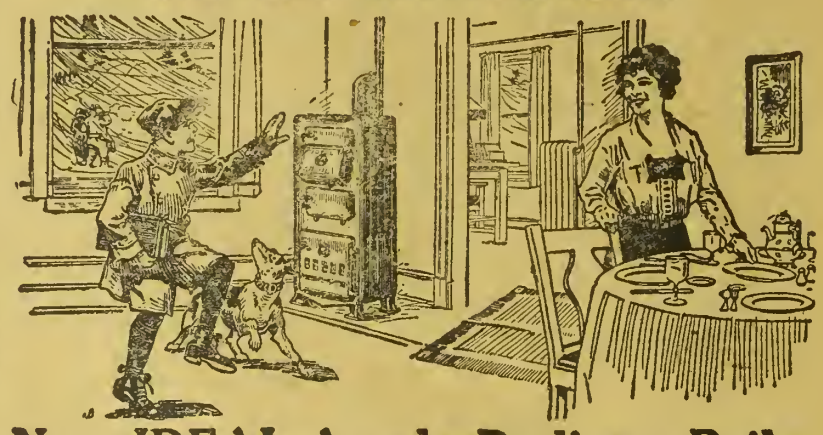


New IDEAL-Arcola Radiator-Boiler

Puts IDEAL HOT WATER HEATING comfort at low cost in farm houses, with or without cellars

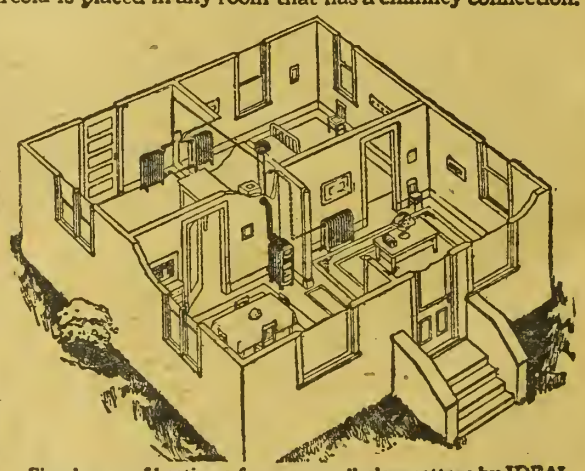
The IDEAL-Arcola takes the place of a parlor stove. But a stove wastes much of its heat up the chimney, whereas the IDEAL-Arcola is water-jacketed, and conveys its heat by hot water circulation through pipe-connected AMERICAN Radiators stationed in the adjoining rooms. Every bit of the big volume of heat developed from each pound of fuel is therefore made useful in keeping ALL the rooms uniformly, healthfully warm. There is no coal-waste. The IDEAL-Arcola does not rust out or wear out—will outlast the building—is a genuine, permanent *investment!*

Shipped complete ready for immediate operation

The beauty of the IDEAL-Arcola method is that no cellar is needed. Everything is on one floor. The Arcola is placed in any room that has a chimney connection. No running to cellar. Same water is used over and over again for years.

Cleanly heating—healthful heating—free from fire risks!

Unlike stoves, there are no coal-gas leaks into the living-rooms. The IDEAL-Arcola delivers the soft, radiant warmth of hot water—not the dry burnt-out atmosphere of stove heating. There is no fire risk to building—no danger to children—fire lasts for hours! The Arcola burns hard or soft coal. Brings cost of heating down to the lowest notch — and gives IDEAL comfort.



Simple way of heating a four-room cellarless cottage by IDEAL-Arcola Radiator-Boiler and three AMERICAN Radiators

Catalog showing open views of houses, with the IDEAL-Arcola Boiler in position will be mailed (free). Write today

Sold by all dealers. No exclusive agents.

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MYERS POWER SPRAY GUN CAN BE USED SUCCESSFULLY WITH ANY POWER SPRAY PUMP

"BROAD OR LONG DISTANCE SPRAY" AS SIMPLE AS A-B-C TO ADJUST

You will appreciate the remarkable simplicity of the Myers Power Spray Gun — You will like its common-sense features that have made it so successful — You will be more than pleased with its easy adjustment (long distance or broad fanlike spray by one third turn of handle) — You will marvel at the uniform manner in which it discharges the spraying liquid and will appreciate its capacity range, (4, 6, 8 or 10 gallons) adapting it for use with any power spray pump — and, above all you will profit by the time, labor and material it saves during spraying operations.

Help is scarce — time is money. Here is the opportunity for relief — equip your Power Spray Outfit with a MYERS SPRAY GUN — the simplified one man spraying device. Your dealer will supply you or write us.

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One of the most interesting and instructive departments of Capper's Farmer is conducted by Senator Capper in Washington, D. C. In these articles you get the latest and most authentic news and comment on what should be, and is being, accomplished by our representatives in Washington.

Capper's Farmer, published by United States Senator Arthur Capper of Kansas, is a farm paper that is different. It is edited by men who live on the farm. It is published in the heart of the greatest agricultural country in the world. It stands for a square deal for the consumer and fair profits for the producer thru eliminating grain gamblers, market jugglers, and other trusts and combines. For the American farmers, who want to be progressive, there is no such favorite as Capper's Farmer. There is a department for the women folks, boys and girls, marketing livestock, poultry, dairy, farm machinery, horticulture, health, etc.

In order to introduce this bright and breezy farm paper the publisher agrees to send the paper 6 months for 10c. This is a special offer for a short time only.

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would be difficult to mention any variety that has not been suecessfully raised somewhere on the plains.

On the writer's ranch the Ben Davis, Jonathan, Wealthy, Yellow Transparent, Delicious, Florence crab and others all did well. The Delicious seems to do well from New York to California and is about the finest there is. The apples are large and the tree vigorous. The Ben Davis is a hardy tree and a heavy bearer; but the apples are of a poor quality. The Yellow Transparent does well nearly everywhere and does not kill back like the Duehess. The Jonathan is not a heavy bearer but stands the winters well. Florence crab is very hardy and also a heavy bearer. The Wealthy is a fine fall apple and seldom winterkills. At the Akron Field Station they have raised the Northwestern Greening, Utter, Plumb cider, Patten and Hyslop crab and others.

The Smith's cider and McMahon are also raised in many places near the Rockies and are very fine fall apples.

The writer raised several varieties of pears and had quite a crop of Duchess, Bartlett and Kieffer; but they all finally succumbed to blight.

The European plums, such as Lombard, German prunes, Arctic, etc., do fairly well in some localities, but generally die out after 10 or 15 years. The hardiest American varieties of red plums now recognized as the safest to plant are: Forest Garden, De Sota, Wolf, Wyant, Surprise,etc. The American and Omaha are choice plums and do well south of the Divide.

Cherries Also Do Well

In the writer's orchard the Morello cherry, especially the Suda hardy, bore large crops for a number of years, but did not last as long as the Montmorency, which was not quite such a heavy bearer. The early Richmond does not produce so much fruit as either of the above, but is a very hardy tree. We believe the Montmorency to be the best all round cherry tree. I know of some which have lasted for 20 years and still going.

Grapes do very well at altitudes not over a mile high. The eastern varieties are the only kinds to plant and can be found in any nurseryman's catalog. Concord, Agauam, Diamond, Moore's Early and Niagara are all good. Except in mild elimates grapes cannot be raised on trellises. They should be cut back every fall to a stump, which means that the canes should be cut right back, leaving only a three or four-inch spur with one or two buds. Grapevines fruit from the new shoots, which when the plant is properly pruned, may grow five or six feet in a single season with a bunch of grapes at nearly every joint. Another advantage of the stump method is that they can easily be covered with a mound of dirt and are then just as safe from the winter weather as if in a glass house. They do not bloom until about June, so that fruit can be expected every season.

Currants are native in nearly all the dry farming states and all varieties of orchard currants do well. The cherry currant is the largest and handsomest but also most preferred by worm pests. The London Market is one of the best and most popular.

Gooseberries are also easy to grow. The Downing, Houghton and Champion are usually planted. Gooseberries and grapes are once in a while affected with mildew. This can easily be prevented by dusting them with powdered sulphur early in the season.

the top before planting and all subsequent pruning should be done with an

All plants and trees should be pruned back, cutting off at least two-thirds of the top before planting, and all subsequent pruning should be done with an eye to create a low head, which will shade the trunk. The south side of a tree should be whitewashed or shaded to prevent sunscald, for if the bark becomes too warm in winter and gored with sap, the next freeze is liable to burst the cells of the sapwood where it has been exposed to the sun.

It is a good plan to place tree protection around all young trees, not only to shade the trunks but to keep rabbits from gnawing them after the grass becomes dry. After a big snow, also, they are destructive and must be prevented from getting into the tops by digging the snow away from the tree.

Warts on Cows' Teats.

A very good remedy for warts on cows' teats is plain olive oil applied after milking. In case of the heavier warts it is sometimes necessary to burn them with lunar caustic. Olive oil is the safest remedy and does not cause the teats to become sore.

Corn Seeks Altitude Record in Saguache County.

(Continued from Page 5.)

has perfect germination. This corn has been tested for three years in this office and has always been found to have a high percentage of vital seed. It shows conclusively that corn can be acclimated here.

It seems that no altitude is too high for the squaw corn in this vallley. At Beidel Camp, in the foothills along the west side of San Luis Valley, squaw corn has been matured by Mr. E. R. Mosher for at least ten years.

'No Farm Bureau project can succeed without the hearty support of the farmers. To show what may be expected next year in the line of corn growing, a few testimonials from those who were successful this year may not be out of order. Mr. J. J. Parsons of Mirage, Colo., who has grown corn at an altitude of 7,700 feet for the past five years spoke as follows at the annual Farm Bureau meeting: "Many farmers and others about the county seem to think that corn cannot be grown here. But I am here to state, that if there were 100 acres of corn in the county this year, there will be 2,000 to 3,000 acres in the next five years. I have raised corn for five years and expect to continue with it."

Mr. G. V. Rudd of Hooper, who raised 40 acres this year, had the following to say: "An acre of corn will feed more stock than an acre of peas, and the eultivation necessary will keep the land from getting foul with weeds. I have seen my horses and hogs feed on my corn patch and they preferred it to a stand of peas which adjoined it. The only time they touched the peas was when the snow had softened them up enough to make them easy to chew.

Wagonload of corn on G. V. Rudd Farm, Saguache County.

There it much less waste with feeding corn than peas, and when an animal gets hold of an ear of corn it has something, but the peas generally must be picked up one at a time from the ground. I find that corn is about as good a crop as I can grow on my place."

Mr. J. E. Moore of Mirage, who had success with Minnesota No. 13 this year at an altitude of 7,800 feet, spoke as follows: "I have demonstrated to myself and others, I believe, that we can grow corn successfully. I will try Minnesota 13 again next year and hope to be able to give it better care than was possible this year. Had I kept the suckers off my corn all season I am sure it would have matured sooner than it did."

Expressions of this character were made by practically every farmer who had corn out this year.

Aside from the varieties mentioned in this report and tried out this year, the Farm Bureau expects to import another variety a yellow dent, which has been grown on the experimental farm of the International Harvester Co. at Grand Forks, N. D., for the past 12 years. Judging from reports this eorn should be practical in this county.

So They Passed Him.

A psychiatric board was testing the mentality of a thick-lipped, weak-faced negro soldier. Among other questions, the specialist asked:

"Do you ever hear voices without being able to tell who is speaking, or where the sound comes from"

"Yes, suh," answered the negro.

"When does this occur?"

"When I'se talkin' over the telephone."—Everybody's.

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Field of Mountain Globe Onion Seed on the Burton Seed Farm.

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Our Specialties:

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SWEET CORN	ONION SETS	SEED CORN	RYE	AND GRASSES

All tried in our Farm and tested until their value for Western conditions is proven.

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Dairying and Hog Raising

H. A. LINDGREN

All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, WESTERN FARM LIFE, Denver, Colorado.

Production of Good Cream.

...e production of good butter de-...s largely on the production of ... cream. Of course, the butter-...er can control some of the factors ...he creamery, but uncleanliness on ... part of the producer often leaves ...ndition that cannot be remedied by ... known methods. Every producer ...airy products should strive to see ... his cream goes to the creamery ... the least possible contamination. ... creamery that produces the best ...ity of butter will do the most busi-..., and will be in better position to ... a higher price for the cream. ...ding up the dairy business means ...h to every dairyman, and nothing ...s toward this goal more than the ...duction of good quality cream. ...he first thing to bear in mind is ...fact that milk is an ideal media for ...production of bacteria. It is there-... important to keep the milk as free ...n contamination as possible. The ...ing shed or barn should be as clean ...t can be made. Use lime occasion-... to keep down odors. Wash the ud-... when they are muddy and dirty. ...akes a little time, but it's worth ... effort. The milker's hands should ...lean when milking. This is a small ...g and requires just a little time, ... it means much to the cleanliness ...he milk. Use a bucket in milking ... has a small intake. This prevents ... dust and dirt floating in the air ...n getting into the milk and lessens ... danger of the cow bathing her foot ...he milk. The milk bucket should ...horoughly washed after each milk-... so that no milk is allowed to re-...n in crevices and dry, and thereby ...rd a breeding place for filth and ... The barn odor will be taken up ...lily by the milk if it is allowed to ...in the stable. It is wise to carry it ...side in the open air, or directly to ... milk room after it is drawn.

...he separator should be absolutely ...n. Do not let anyone persuade you ...t it is possible to put out good ...am when the separator is not ...shed thoroughly after each separa-...n. The cream should be immediate-...placed in clean cans and cooled to 50 ...rees Fahrenheit, or as near that ...nt as possible, and kept at that tem-...ature until delivered to the shipping ...tion or creamery. It should not be ...owed to stand near decayed vegeta-...s, oil cans, etc., as it readily takes ... any foreign odors.

...f proper and intelligent care will be ...en to the handling of cream, there ...uld be no difficulty in getting it to ...de first-class. The new cream grad-... law now in effect in Colorado ...uld not worry the cream producer ...he pays attention to details. He ...uld remember that it is wholly with-...is power to make the desired grade. ... should also bear in mind that the ...lding up of the dairy industry in Colorado will be hastened through a better grade of creamery butter.—H. A. L.

Calf Feeding.—Article II.

Some very practical work has recently been done by the University of Missouri in putting calves on a hay-grain ration and discontinuing the milk when the calf is 60 days old. The plan carried on was to increase the grain from the time the calf starts eating it until 50 or 60 days old, at which time it should be eating an average of about one pound daily. The skim milk was at that time reduced to half and the grain increased. At the end of another ten days the milk was left off entirely and the calves were receiving a ration made up entirely of grain and alfalfa hay. In the trial alfalfa was found to be better than timothy. The following tables were worked out and may be of value as a guide in feeding by this method:

Feed Consumed by Holstein Calves.

Period.	Age, Days.	Average Lbs. Hay Daily,	Grain Daily,
1	60 to 70	1.3	1.9
2	70 to 80	1.9	2.7
3	80 to 90	2.6	3.5
4	90 to 100	3.1	3.9
5	100 to 110	3.7	4.3
6	110 to 120	4.1	4.5
7	120 to 130	4.3	4.6
8	130 to 140	4.4	4.8
9	140 to 150	4.8	4.9
10	150 to 160	5.1	5.0
11	160 to 170	5.3	4.8
12	170 to 180	5.6	4.8

Feed Consumed by Jersey Calves.

Period.	Age, Days.	Average Lbs. Hay Daily.	Grain Daily.
1	60 to 70	0.8	1.5
2	70 to 80	1.7	2.1
3	80 to 90	2.1	3.1
4	90 to 100	2.5	3.7
5	100 to 110	2.8	4.0
6	110 to 120	3.4	3.9
7	120 to 130	2.7	3 0
8	130 to 140	3.4	3.4
9	140 to 150	4.0	4.5
10	150 to 160	4.4	4.5
11	160 to 170	3.8	4.0
12	170 to 180	4.6	5.0

Attention is called to a few precautions which are copied from the report on this system of feeding.

"A few precautions are necessary if success is to be expected when weaning calves at as early an age as sixty days. First, the calves must be normal and healthy and must be eating considerable quantities of hay and grain at the time the change is made, or they will not make good gains when changed to a hay and grain ration. Second, the calf must not be suddenly taken off milk and put on a hay and grain ration exclusively. Half the milk may be withheld at once and the remainder taken away a week or ten days later. This method has given fully as good results as the more commonly practiced method of reducing the milk more gradually, such as taking away one or two pounds at a time. In the majority of cases small quantities of skimmilk were fed during the first ten-day period represented in Tables 3 and 4. This quantity was small and was not recorded in these tables. Third, the calves must be fed liberally on both hay and grain after the change has been made. The calves on experiment were given all they would eat readily. As soon as a calf showed signs of going off feed, the ration was cut severely for a few days until the appetite became keen again."

Scours.

The most common ailment that occurs among calves is that of scours. White scours sometimes occurs during the first few days of the calf's life, and is the result of navel infection at the time of birth. This trouble is more easily prevented than cured, and shows the importance of clean quarters for the cow at calving time. Should this trouble ever occur on the premises, the place should by thoroughly disinfected before it is used for calving quarters again. The disinfection should be done by or under the advice of a competent veterinarian. Common scours are the result of indigestion caused from feeding irregularities or uncleanliness. It should be mentioned again that the bucket in which the calf is fed should be absolutely clean. Regardless of all that can be done something is apt to bring on a case of scours with the best of feeders, so a brief description of the method of handling the trouble will be given.

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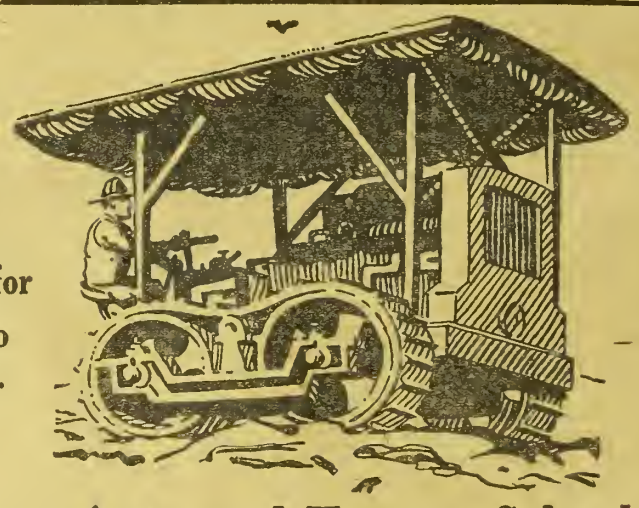

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able to detect the first signs of indigestion among the calves. Whenever any irregularity shows itself, the milk should be reduced one-half. Prof. Eckles of Missouri recommends that a bottle of the following solution be kept on hand at all times:

½ oz. of formalin to 15½ oz. water.

Of this solution give one teaspoonful to the pint of milk fed. Give this for three or four feeds. This is often all that is necessary. In bad cases 2 to 3 ounces of castor oil in a little milk is advisable. This may be followed with two or three raw eggs. When all trouble has ceased, the milk should be increased to normal feeding, very gradually.

Scours should be avoided if possible, as the calf is always sure to receive a setback with every case. Careful attention to the feeding will assist greatly in keeping down the trouble.

Dehorning.

Most stockmen prefer to remove the horns from the calves, rather than to have it to do when the animal becomes larger.

This operation can be performed with best success if done within the first week or ten days. As soon as the small buttons can be felt on the calf's head, the operation can be performed. The hair should be clipped from around the button so that the caustic will reach it. A stick of caustic potash or soda wrapped in paper to protect the hands of the operator is all that is necessary. Throw the calf on its side and hold securely. Moisten the end of the caustic stick with water and rub over the button of the horn several times, allowing the caustic to dry after each application. Care should be exercised so as to not have the caustic stick dripping wet, as the water may run down the side of the calf's face and remove the hair, or may even reach the eye. After two or three days, if the operation has been successfully performed, a hollow can be felt where the button of the horn was, and no horn will develop.

Milk Substitutes.

In dairy herds where milk is sold as whole milk, there has been considerable interest in the use of milk substitutes for calf feeding. There are various kinds on the market. Directions given with them should be followed closely. The weak calves should not be put on these feeds until strong enough to digest it. The meal to select is the one that comes as near as possible to the composition of milk. It should be borne in mind that milk substitutes are at best only an imitation of the real article and should be used with judgment. The following guide as to the method of handling this may be of value. In feeding milk substitutes start carefully and feed only to strong vigorous calves as follows:

First week—Whole milk.

Second week—Whole milk.

Third and fourth weeks—Three parts whole milk and one part gruel.

Fifth week—Whole milk and gruel, equal parts.—H. A. L.

Shall We Feed Grain?

Does it pay to feed grain to dairy cows? This question is often asked by dairymen. With the ordinary cow the lack of production is due more to the fact that no succulent feed is provided. Where the cows are fed good legume hay and silage or roots in most cases they will produce to the limit of their capacity without grain. However, this will not apply to the heavy producer. She is often unable to eat enough of the bulky feeds to make her produce what she is capable of doing. In such cases a good grain ration should be supplied. This is a matter that should be determined with each individual cow. Where grain is fed it is found that one pound to every four of milk produced is ample for the Holstein. In the case of Jerseys feed one pound of grain to every 3½ pounds of milk produced.

Apply Manure Lightly.

Careful investigations have been made by several stations to demonstrate whether a light or heavy application of manure was the most profitable. Very few farms produce a sufficient amount of manure to apply as frequently as would be desirable. This is especially true if heavy applications are made. The Ohio Experiment station has found "that manure applied in different amounts shows clearly that there is economy in light applications when used for general farm crops. The money return per ton of manure, when applied at the rate of 6 tons per acre twice in a rotation, was $3.29 as compared with $2.29 per ton when applied at the rate of 10 tons per acre twice in the rotation. On this basis 60 tons of manure applied at the rate of 6 tons per acre on each of 10 acres would give a return of $60 more than the same amount of manure applied at the rate of 10 tons per acre on each of 6 acres. Few farmers have sufficient manure to cover their farms as abundantly and frequently as they desire. The results emphasize the importance of using a manure spreader and spreading the manure thinly."—Hoard's Dairyman.

Holstein-Friesian Service

The extension service of the Holstein-Friesian Association of America is carrying on its activities mainly through co-operation with many organized agencies. For example, the association co-operates with 560 county agents, 241 local Holstein-Friesian clubs and 33 state Holstein-Friesian clubs. The association works with every college of agriculture in the United States, as well as many state departments of agriculture. It has recently offered to co-operate with 1,500 high schools in which agriculture is taught. During the summer and fall the co-operators had Holstein-Friesian booths at 255 fairs, including 20 state fairs. In addition a campaign was carried on for the use of more milk and dairy products in 305 cities and towns in 44 states. The extension service has sent to co-operators more than 250,000 pieces of printed matter, has secured speakers for many meetings, and has assisted in organizing many new clubs. The service extends its activities to foreign countries, corresponding with persons in more than 80 different localities in 30 countries.

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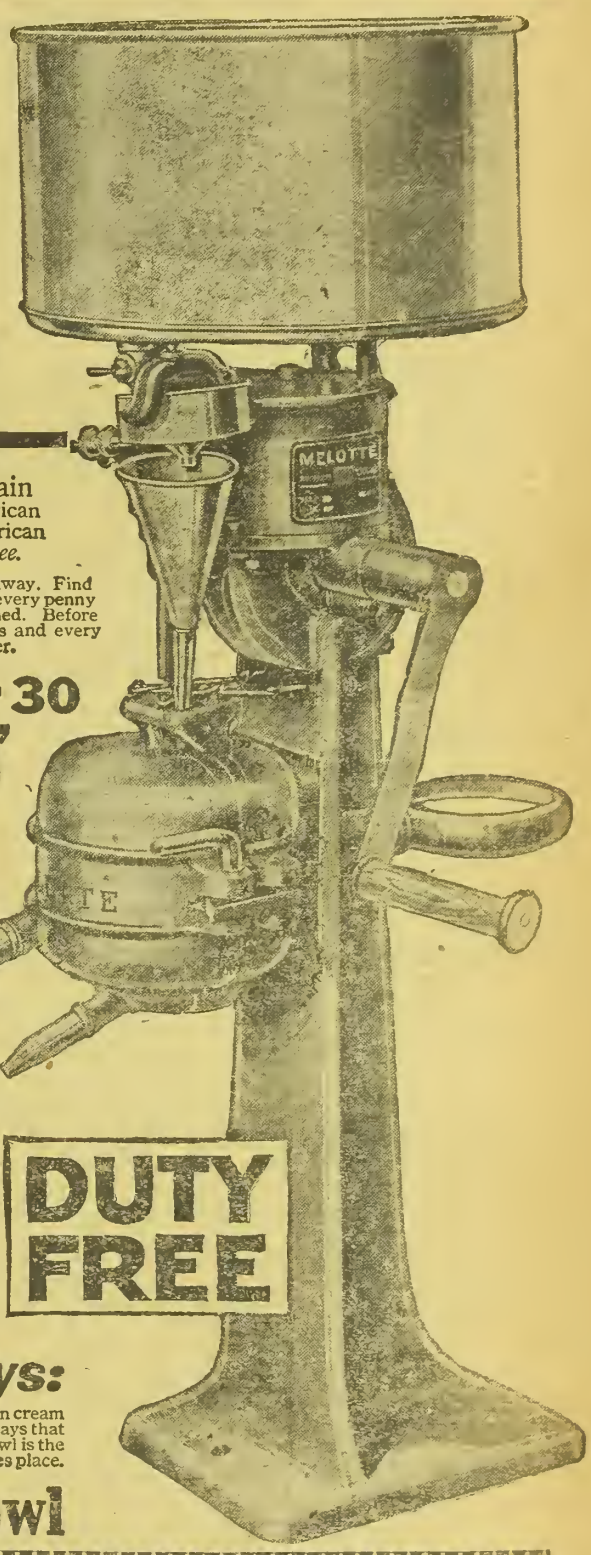

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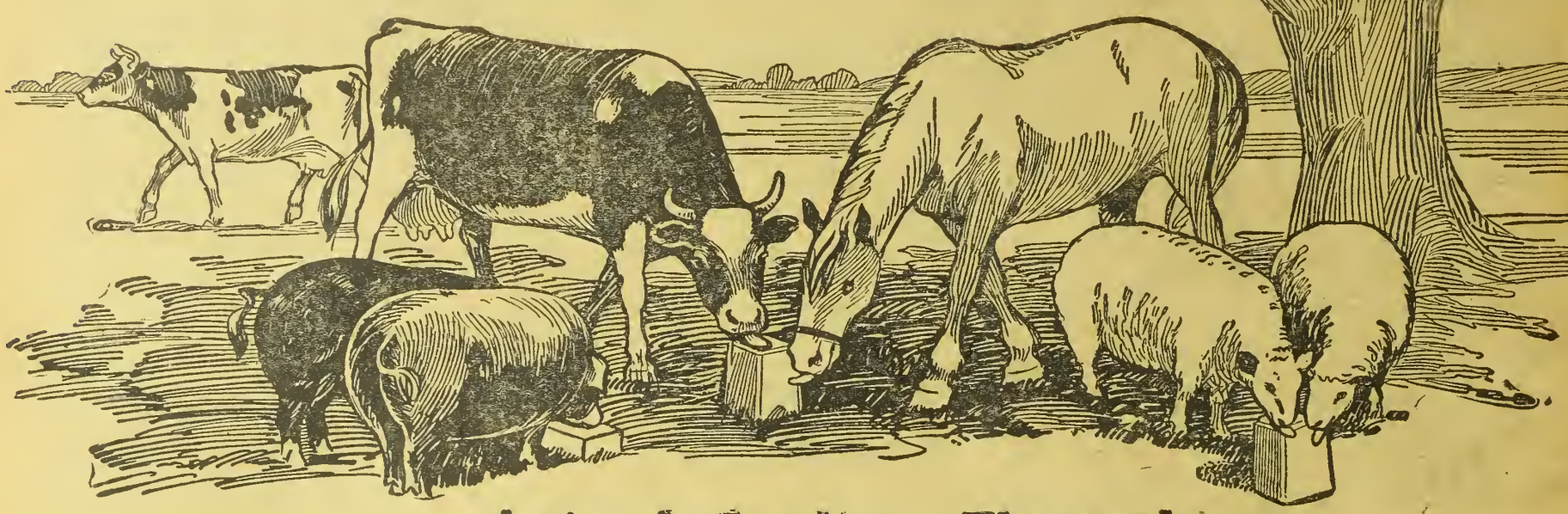

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nett, Colorado Milling & Elevator Co.
rthoud, Fairbairn Lumber & Mercantile Co.
rthoud, Davis, Brown, McAles er Mercantile Co.
hune, W. H. Yersin
nca, Johnson & Fatcliff
lder, Boulder Milling & Elevator Co
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vina, Green Robinson
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ggsdale, G. G. Oliver
ghton, Leffingwell Merc. Co.
ghton, Strong Mercantile Co.
stol, J. E. Gordon

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Brush, Brush Farmers' Co-operative Elevator Co.
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Buena Vista, Dean Brown Mercantile Co.
Burlington, Hugh Baker
Byers, The Thrift Merc. Co.
Byers, H. & H. Mercantile Co.
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Richards, P. R. Murphy & Sons
Rifle, The Munro Merc. Co.
Rifle, McLearn Merc. Co.
Rio Blanco, Rio Blanco Merc. Co.
Rifle, The Rifle Fruit & Produce Ass'n.
Rocky Ford, C. B. Gorrean Coal & Feed Co.
Roggen, H. F. Frock
Romeo, Romeo Stores Co.
Sargents, The Trinebera Lumber Co.
Saguache, Means & Ashley Merc. Co.
Salida, Geo. W. Vaughn
Salida, Crutcher-Plimpton Merc. Co.
San Acacio, C. E. Officer
San Luis, A. A. Salazar & Son
Sedalia, George Manhart
Seibert, A. V. Jesse
Severence, Nixon Merc. Co.
Sheridan Lake, Howard Gamble
Silt, J. K. Cowden
Silverton, Clifford Merc. Co.
Simla, Isley Lumber Co.
Sligo, Markrud Merc. Co.
Steamboat Springs, Watson Merc. Co.
Steamboat Springs, E. O. Furlong
Steamboat Springs, J. W. Hugus
Steamboat Springs, Steamboat Merc. Co.
Sterling, Sterling Hay & Feed Co.
Stoneham, Stoneham Farmers' Co-op. Grain Co.
Stonington, S. L. Thompson
Strasburg, H. H. Kruse
Stratton, N. H. Fuller & Co.
Sugar City, Crowley County Merc. Co.
Swink, The Beaty Reynolds Trading Co.
Sedalia, Sedalia Merc. Co.
Sterling, Haley-Harris Co.
Thurman, Curtis & Williams
Tiffany, Tiffany Merc. Co.
Timnath, W. B. Springer
Towner, W. H. Mayne
Towner, Swigart & Co.
Trinchera, Doherty Mercantile Co.
Trinchera, Sala Gonzalo
Trinidad, The Bancroft-Marty Feed & Prod. Co.
Trinidad, Southern Colo. Merc. Co.
Trinidad, F. Burkhard Saddlery & Imp. Co.
Tuttle, Carl A. Root
Victor, The Colorado Trading & Trf. Co.
Vilas, C. F. Wheeler
Vona, Vona Equity Co-operative Ass'n
Waverly, Harned & Brodie
Walsenburg, The Sporleder Selling Co.
Weldona, The Weldon Valley Elevator & Mercantile Co.
Weldona, Warren Lumber Co.
Wellington, Platt Mercantile Co.
Westcliffe, Westcliffe Hardware Co.
Wiggins, Colorado Milling & Elevator Co.
Wiggins, Wiggins Mercantile Co.
Wild Horse, Nelson & Holte
Wiley, The Wiley Elevator
Windsor, Windsor Mercantile Co.
Windsor, Ames Mercantile Co.
Windsor, John Stenzel
Walden, Ames Mercantile Co.
Whitewater, Eli Mahannah
Yuma, Farmers' Milling & Merc. Co-op. Co.

Carey-ized Stock Tonic Dealers in

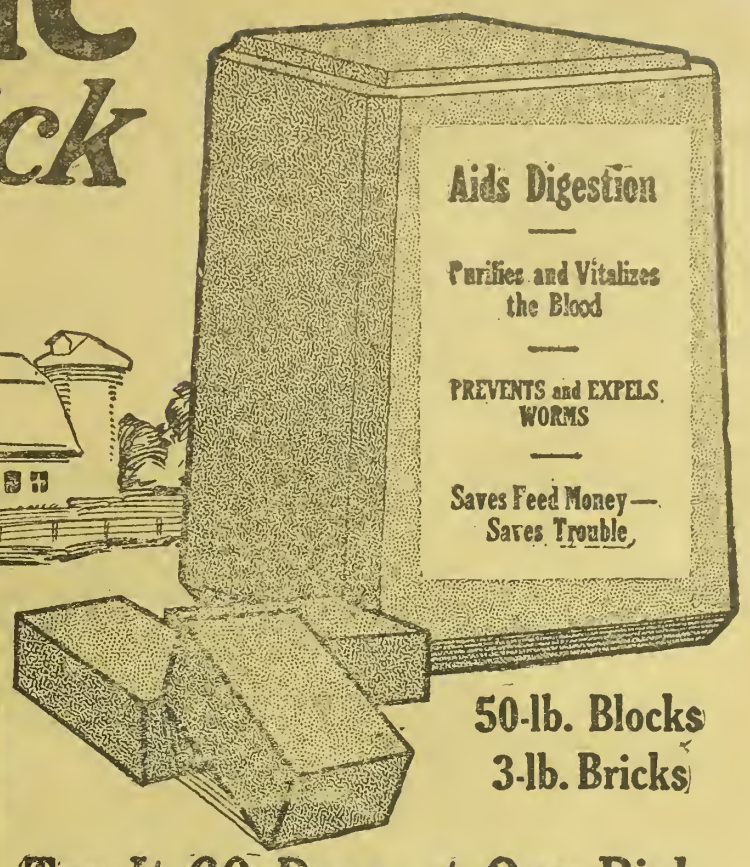
IDAHO

Albion, Albion Merc. Co.
American Falls, Evans Merc. Co.
Arco, J. E. Smith & Co.
Arlmo, Jas. Henderson Co.
Ashton, Wanko & Schroll Co.
Ashton, Miller Bros. Co.
Athol, Andrews Merc. Co.
Bancroft, Chris Cali
Blackfoot, Fisher Commission Co.
Blackfoot, Powers Pharmacy
Bliss, Morris Roberts Co.
Bloomington, M. J. Floyd
Boise, Union Seed & Fuel Co.
Bolse, Amos Wholesale Grocery & Supply Co.
Bonners Ferry, L. N. Brown
Buhl, Gorseth Brothers
Buhl, C. B. Peck & Co.
Burley, Burley Grain & Prod. Co.
Burley, Pioneer Seed & Grain Co.
Buhl, Farmers' Grain & Milling Co.
Buhl, Runyon Grocery
Burley, State Implement Co.
Burley, J. S. Smith & Sons
Burley, The Burley Merc. Co.
Caldwell, Caldwell Equity
Caldwell, Co-operative Store
Caldwell, Farls-Holgate Produce Co.
Cambridge, Fred M. Jewell & Co.
Carcy, Blaine Co-op. Co.
Cascade, Crawford Merc. Co.
Cascade, Madden Merc. Co.
Castleford, Reynolds Bros. Co.
Council, Whitley Bros.
Darlington, C. Albertson
Downey, Inter-Mountain Farmers Equity
Driggs, Arnold & Vaughn Co.
Drummond, V. E. Galley
Dubois, Miller & Gayle Co.
Dubois, Dubois Merc. Co.
Eden, Eden Merc. Co.
Elba, S. J. Rich
Emmett, E. W. Reilley & Co.
Emmett, W. S. Langrelse
Felt, Felt Merc. Co.
Filer, Filer Merc. Co.
Filer, Filer Grocery Co.
Fruitland, E. A. Stegner
Glenns Ferry, S.
Gooding, J. C.
Grace, Inter-Mo
Grace, Casb Gro
Hagermann, He
Hagerman, Mor
Hailey, Holland
Hailey, J. H. B
Hansen, Hansen
Hazleton, Logan
Idaho Falls, F.
Jerome, Jerome Co.
Keever, Lindsay
Kimberly, Wilso
King Hill, Sudd
Lewisville, C. A
Lorenzo, Lorenz
McCammon, Mc
Monan, C. A.
Meridian, Toliet
Montpelier, Bre
Montour, Foster
Montour, Monto
Moore, Moore C
Mountain Home & Co.
Nampa, Farmer
Nampa, Nampa
Nampa, Shumat
Notus, J. S. Ba
New Plymouth Co.
Oakley, Oakley
Pendleton, Carv
Parma, Tanner
Paul, Paul Sto
Payette, Gorhan
Payette, The P.
Picaho, Kilpatr
Pocatello, P. B
Preston, Consol Mach. Co.
Priest River, S
Ruperty, C. D.
Richfield, Byr
Rigby, Rigby
Riverside, Han
Roseberry, Sim
Roseberry, B.
Roswell, C. V.
Rigby, Inter.
Rupert, Produc
Roxburg, Flam
Sandpoint, Far Co.
Sandpoint, Col
St. Anthony, Co.
St. Anthony, S
St. Anthony.
Shelley, Shelle
Shoshone, The Inc.
Soda Springs.
Sugar City, De
Sweet, Tally
Sweet, Poster
Teton, Bowles
Tetonia, Tet al
Twin Falls, Co chine Co.
Twin Falls, Id ment Co.
Twin Falls, Feed Co
Twin Falls, I
Twin Falls, Os
Weiser, Morris
Weiser, Square
Weiser, Weiser
Weiser, D. O.
Wendell, Erpe
Wendell, Wend Co.
Wilder, Wilder

The Best Dealers in Your Territory H

Stock Tonic Block and Brick

For Hogs, Cattle, Sheep and Horses



For Best Results Place it Under Feed Shed Where Animals Are Protected

50-lb. Blocks
3-lb. Bricks

Extract From One of Many Hundreds of Letters

"For all kinds of worms in sheep, Carey-ized Stock Tonic has no equal, and as for stomach worms, the sheep men can take their hats off to Mr. Carey, for if they will give Carey-ized Stock Tonic Brick a fair trial their troubles will be over. We are feeding it to our sheep, cows, hogs and horses, and I consider it the best worm destroyer and conditioner we have ever used."—*Homan & Son, Peabody, Kan.*

Try It 60 Days at Our Risk

Order 12 bricks or a 50-lb. block from any dealer whose name appears in the list on these pages and you will be promptly supplied. If your own dealer's name does not appear in this list and he can not supply you, send us his name and we will send him for you 12 bricks (35 lbs.) at $2.50 f.o.b. Hutchinson, Kan., or 50-lb. block $3. Or if you prefer, send us the amount and we will supply you direct, freight charges collect. *If at the end of 60 days' feeding according to directions, you are not entirely satisfied, return what you have left to your dealer or to us and all your money will be refunded, including carrying charges. Our guarantee is good. Ask your banker.*

Write for free book—"Making Live Stock Pay."

THE CAREY SALT CO., Dept. 289 Hutchinson, Kan.

If Your Dealer Is Not Listed Write Us His Name—We'll See You Are Supplied

Carey-ized Stock Tonic Dealers in MONTANA

Anaconda, MacCallum & Cloutier
Anaconda, Kelly Commercial Co.
Armington, E. B. Morris
Augusta, Manix & Vaughn
Avon, Birdseye Merc. Co
Baker, J. M. Sawyer Co.
Baker, Economy Grocery
Bainville, Bainville Merc. Co.
Bainville, Aboud Bros.
Bainville, The Golden Rule Store
Ballentine, A. E. Van Pelt
Barber, N. C. Eklund
Bearcreek, Sam Sainazick
Bascom, Swain Mercantile Co
Belfry, The Clark Ford Trading Co.
Belfry, L. O. Walker Co.
Belgrade, Geo. J. Heck
Billings, J. M. Sawyer & Co.
Billings, W. H. McCormick
Billings, M. and M. Grocery
Billings, Lee Warren
Billings, Malin-Yates Co.
Bole, Carl F. Carlson
Boulder, Wm. Steele & Co.
Bowdeln, O. F. Habedank
Boyd, Creed & Wogan
Bozeman, J. M. Sawyer Co.
Bozeman, Forristell Cash Gro Co.
Bozeman, J. R. Poor & Son
Boseman, H. Rhorer
Bozeman, Thomas H. Rea & Co.
Brady, Brady Merc. Co.
Bridger, Johnson & Curtis
Broadview, Broadview Seed Co.
Browning, Broadwater Pepin Trading Co.
Butte, Beebe Grain Co.
Bynum, Ray R. Porter
Belmont, H. C. Helgeson
Carter, Neal Maw
Carter, Earle & Tate
Cascade, Cascade Merc. Co.
Choteau, Choteau Merc. Co.
Choteau, Joseph Hishing & Co.
Clyde Park, Wolcott Bliber Co.
Columbus, Kyle & Mandeville
Comertown, O. C. Pohle
Conrad, Hirshberg Mercantile Co
Conrad, K. V. Bruner Co.
Crow Agency, H. E. Clifford
Custer, N. F. Chaffee
Cut Bank, Equity Co-op. Ass'n of Cut Bank
Columbus, Canaday & Adams
Darby, Billings Produce Co.
Denton, John G. Eppers
Deer Lodge, Cash Grocery Co
Dillon, Foragren Grocery
Divide, Basin Mercantile Co
Dixon, L. H. Jeannot
Dodson, Dodson Trading Co
Dooley, P. F. Hegseth
Dooley, Loyle Gosa
Doty, W. C. Pendergraff
Dutton, Eman Drug Co.
Dupuyer, Dupuyer Merc. Co.
Drummond, Carroll's Cash Grocery
Eureka, W. C. Albee Co.
Elliston, Daugherty & Donovan
East Helena, E. W. Anderson
Edgar, Edgar Cash Trading Co
Ennis, J. W. Chowing
Ethridge, O. J. Kittelrud & Son
Fairview, The Farmers' Store
Fallon, H. Lund
Fife, Fife Mercantile Co.
Finch, Jeffers & Tomkins
Flaxville, Flaxville Merc. Co.
Florence, De Viter & Herbert
Fortine, P. V. Klinke
Forsythe, H. S. Withington
Forsythe, J. M. Sawyer Co
Fowler, O. A. Fluto
Franklin, W. E. Dunlap
Frazier, James Deegan
Ft. Benton, Sharp Brothers
Frold, Froid Co-Operative Ass'n
Fort Shaw, Fort Shaw Co-op Ass'n.
Gardiner, W. A. Hall Co.
Gardiner, M. H. Link
Garnehl, W. S. Manley
Geyser, Ross Mercantile Co.
Gilman, Ellis & Mack
Glasgow, North Side Grocery
Glendive, Arnold Griffin
Great Falls, The Bee Hive
Haines, Haines Commercial Co.
Hall, Hall Mercantile Co.
Hamilton, H. H. Spaulding
Hardin, J. M. Sawyer Co.
Hardin, Hardin Package Grocery
Harlowtown, Urner Merc. Co.
Harrison, Harrison Merc. Co.
Hedgesville, A. A. Foster
Helena, P. W. Wooda
Helena, Sanford-Evans Co.
Hibbard, J. L. Raeque
Highwood, L. E. Phillips
Hobson, Judith Basin Merc. Co.
Homestead, Oliver O. Foss
Homestead, Homestead T. & B. Co.
Hysham, Jenkins & Coffey
Hysham, Geo. S. Warren
Havre, Havre Trading Co.
Hedgesville, McKenzie-Taylor Merc. Co.
Intake, H. L. Francisco
Ismay, Earlinburt Mercantile Co.
Joliet, Lovering & Smith
Joliet, Bell Werness Co.
Judith Gap, Judith Gap Merc. Co.
Judith Gap, D. L. Holland
Kalispell, Equity Supply Co.
Kalispell, Kalispell Merc. Co.
Lambert, Yellowstone Merc. Co.
Laredo, C. K. Clark
Laurel, The Kassner Co.
Laurel, O. M. Wold Co.
Laurin, Morse Bros. Merc. Co.
Ledgerwood, John Sterrenberg
Lehigh, Cottonwood Coal Co.
Lewistown, Lewistown Grocer Co.
Lewistown, Power Merc. Co.
Lewistown, J. W. Danley & Son
Lewistown, Chas. Lehman & Co.
Libby, Pioneer Meat Market
Livingstown, Shorthill Grocery
Livingston, The Winslow Mercantile Co.
Livingston, J. F Leighton & Son
Livingston, Cold Storage Meat Market
Livingston, A. W. Miles Co.
Livingston, The Livingston Grocery
Livingston, The Newall Grocery
Lodge Grass, A. M. Stevenson
Logan, Sharman & Bevier
Lohman, Glenn A. German
Loma, Loma Co-operative Merc. Ass'n
Lorenzo, Lorenzo Mercantile Co.
Lowry, Lowry Mercantile Co.
Lytle, Lytle Mercantile Co.
McAllister, J. A. McAllister
McCabe, McCabe T. B. Co.
Malta, Northwestern Supply Co.
Manhattan, George Verwolf & Co.
Manson, Libby Yards Co.
Martinsdale, Martinsdale Merc. Co.
Maryeville, J. Otis Mudd
Medicine Lake, Edward Stubban
Medicine Lake, P. E. Johnson & Co.
Melstone, Dauterman & Co.
Mildred, M. M. & L. B. Clark
Miles City, The Cash Grocery Co
Miles City, J. M. Sawyer Co.
Miles City, Lakin Bros.
Miles City, Shore-Newcom Co.
Missoula, Missoula Mercantile Co.
Molt, F. O. Hanson
Mondak, Arivee Mercantile Co.
Monarch, Monarch Co-operative Ass'n.
Montague, Patterson Trading Co.
Moore, The Decker Grocery Co.
Moore, Willard Drug Co.
Musselshell, The Handel Merc. Co.
Musselshell, Musselshell Merc. Co.
Nashua, Equity Co-operative Ass'n.
Osborn, Orville Clark
Oswego, Daniel Knapp
Outlook, Outlook Mercantile Co.
Paradise, Paradise Mercantile Co.
Park City, Park City Merc. Co.
Pendroy, Swanson, Hunt & Co.
Philipsburg, John A. Spencer
Plentywood, Farmers' Grain & Merc. Co.
Plentywood, Kollman Company
Polson, Geo. W. Wright
Pompeys Pillar, Sinton-Rybolt Co.
Pony, Isdell Mercantile Co.
Poplar, Farmers' Mercantile Co.
Portage, Portage Mercantile Co.
Power, The Cash Grocery
Power, J. H. Delaney
Rapelje, Rapelje Mercantile Co.
Rapelje, Lake Basin Trading Co.
Raymond, Raymond Mercantile Co
Raynesford, Kennedy Merc. Co.
Raynesford, Raynesford Co-operative Store
Red Lodge, Goody Grocery Store
Red Lodge, Kaliva Co-operative Merc. Co.
Red Lodge, Carbon Trading Co.
Richey, The Farmers' Co-operative Elevator Co.
Ringling, Anderson Spencer & Co.
Roberts, Roberts Elevator Co.
Roberts, O. C. Wogan
Rosebud, Rosebud Mercantile Co.
Roundup, H. E. Marshall
Roundup, Blair's Drug Store
Ryegate, The Ryegate Elevator Co.
Saco, Rognas Lumber Co.
Saco, Birum & Nelson Co.
Salesville, Salesville Merc. Co.
Savage, P. J. Pederson
Savage, Farmers' Co-operative Ass'n.
Stevensville, Farmers' Co-operative Ass'n.
Stockett, Stockett Mercantile Co.
Scobey, Knapp-Crandall Mercantile Co.
Shawmut, A. A. Carlblom
Shelby, H. E. Benjamin
Shelby, Shelby Mercantile Co.
Shepherd, Shepherd Merc. Co.
Sheridan, J. M. Madison
Sidney, Sidney Mercantile Co.
Square Butte, Joania & Dudley
St. Ignatius, Beckwith Merc. Co.
Stipek, R. E. Frankerberg
Sumatra, Swinney's Cash Store
Sunburst, P. R. Gorham
Sweetgrass, Griffin Merc. Co.
Terry, Wright-Nelson Stith Co.
Terry, F. P. Lauer
Terry, Simpson Mercantile Co.
Three Forks, J. C. Menapace
Three Forks, Three Valleys Co-operative Ass'n.
Thompson Falls, Chas. Weber
Toston, Toston Mercantile Co.
Toston, Toston Hardware Co.
Townsend, The Carter Co., Inc
Twin Bridges, Bert G. Page
Ulm, H. M. Joslin
Valler, Rimel Mercantile Co.
Vandalia, Equity Co-operative Ass'n.
Vandana, J. C. McCue
Vaughn, Sunnyside Store
Virginia City, Buford Merc. Co.
Wagner, Harry F. McConnel
Westby, Nelson & Sannerud
Whitefish, J. P. McLean Cash Store
Whitehall, McKay & Carmichael Merc. Co.
Wibaux, L. C. Bushman
Willow Creek, Earl S. Parks
Wilsall, Farmers' Exchange of Wilsall
Windham, Windham Drug Co.
Windham, Windham Merc. Co.
Winifred, J. B. Stafford
Wolf Creek, John H. Burns
Wolf Point, Sherman T. Cogswell
Worden, C. E. Mattison.
Wyola, H. V. Bailey Co.

Carey-ized Stock Tonic Dealers in NEW MEXICO

Albuquerque, The Bittner Co.
Albuquerque, Star Hay & Grain Co.
Aztec, Bailey C. S. Co.
Amistad, Amistad Merc. Co.
Albuquerque, Gross-Kelly & Co.
Artesia, Joyce-Pruit Co.
Albuquerque, E. Nasci
Belen, The John Becker Co.
Bernalillo, Bernalillo Merc. Co.
Canjilon, Amador Merc. Co.
Carlsbad, Joyce-Pruit Co.
Cedar Hill, H. Hendricks
Chama, Edward Sargent
Chamita, Eldott & Burth
Clayton, W. C. Barnhart
Clayton, G. G. Granville
Clayton, Otto Johnson Merc. Co.
Clayton, Trinidad Bean & Elev. Co.
Clovis, J. A. Latta Gro. Co.
Colmor, Walter A. Dow
Dedman, Farmers' Sup. Co.
Dedman, Hadad, Sam
Deming, S. A. Cox
Deming, Murray & Layne Co.
Des Moines, Kiser Merc. Co.
Des Moines, Osborn & Ames
Des Moines, Walker & Larsen
El Rito, Sargent & Beck
Espanola, Bond & Nohl Co.
Espanola, Leandro Mertinez
Espanola, Serna Bros.
Estancia, A. T. Cochran
Estancia, Estancia Lbr. Co.
East Las Vegas, Gross-Kelly Co.
Farmington, San Juan Trad. Co.
Farmington, Simpson Merc. Co.
Fawood, McDermott & Co.
Folsom, P. V. Martinez
Fort Sumner, Earlckson & Co.
French, Brennan Merc. Co.
French, M. A. White & Son
Gallup, C. N. Cotton Co.
Gallup, Gallup Merc. Co.
Grenville, Light Bros.
Lordsburg, The Roberts & Leahy Merc. Co.
Las Lunas, Hunning & Connell
Lovington, Wright Cash Store
Maxwell, Maxwell Supply Co.
Melrose, E. P. Burdick Merc. Co.
Mills, Wilson Co. (Merc. Dept.)
Morlarity, Emile Mignardot
Magdalena, Becker-MacTavish Co.
Nerra, J. E. Homan Co.
Park View, T. D. Burns
Park View, Hartt & Garcia
Park View, Lopez & Quintana
Portales, Joyce-Pruit Co.
Rosa, Quintana, J. V. & Sons
Roswell, Joyce-Pruit Co.
San Antonio, Allaire, McIntyre Co
San Marcial, Hanna, Sam
San Marcial, San Marcial Merc. Co.
Santa Fe, Gross-Kelly Co.
Santa Fe, Leo Hersch
Socorro, Henry Chambon Estate
Springer, Florsheim Mer.Co.
Taos, Arvin Burch
Taos, Bond-McCarthy Co.
Taos, Gorson Gusdarf
Tatum, Geo. Bilderback
Tatum, Tatum Hdw. Co.
Tierra Amarilla, T. D. Burn, Jr.
Tolar, F. G. Forest
Wagon Mound, A. McArthur Co.
Watrous, H. D. Reinken
Watrous, Watroua Merc. Co.

Carey-ized Stock Tonic Dealers in UTAH

American Fork, Chipman Merc. Co.
Buffdale, Thornton Merc. Co.
Cedar City, Cedar Merc. & Live Stock Co.
Center Field, A. L. Fjeldsted
Delta, Hub. Merc. & Prod. Co.
Ephraim, D. W. Anderson
Fillmore, Stevens Merc. Co.
Gunnison, Gunnison Drug Co.
Heber City, Heber Merc. Co.
Heber City, Heber City Exchange
Holden, Holden Co-operative
Kanosh, Wm. B. Fennemore
Laketown, G. H. Robinson
Logan, Cache Valley Com. Co.
Lund, S. J. Doolittle
Manti, Brattwaite & Nellson
Midway, Citizens' Merc. Co.
Milford, T. W. Sloan Co.
Modena, B. J. Lund & Co.
Moroni, Moroni Co-op. Co.
Mount Pleasant, Ed Johnston
Mount Pleasant, S. D. Longsdorf
Murray, Fred Carlton
Meadow, Chas. Swallow
Nephi, Juab County Farmers' Equity
Nephi, Nephi Merc. Co.
Oren, Sharon Merc. Co.
Paragonah, People's Union M. & M. Co.
Parowan, Wm. H. Gurr
Parowan, Parowan Merc. Mfg. Co.
Pleasant Grove, Cullmore Merc Co.
Provo, Provo Feed Store
Randolph, Spencer Bros. Co.
Salina, Lewis Drug Co.
Salt Lake City, Porter Walton Co.
Sciplo, E. M. Brown; also Jens P. Peterson
St. George, Nelson Merc. Co.
Wales, Wales Co-op. Store

Carey-ized Stock Tonic Dealers in WYOMING

Arminto, Big Horn Sheep Co.
Basin, Nadler Drug Co.
Buffalo, Skipton & Flynn
Burlington, A. F. Schlaf
Burns, Heathman Hdw. & Impl. Co.
Casper, E. R. Williams
Casper, W. R. Johnson
Cheyenne, Capitol Ice & Storage Co.
Cheyenne, E. S. Johnson Groc. Co.
Cheyenne, Kelly Merc. Co.
Cheyenne, Wyoming Fuel & Feed Co.
Chugwater, Chugwater Trad. Co.
Clearmont, American Rochdale Stores Co.
Clearmont, Weeden Merc. Co.
Cody, Cody Trading Co.
Cody, The Home Supply Co.
Couy, The Newton Co.
Cokeville, Reynolds, Smalley & Larson Co.
Cokeville, Cokeville Merc. Co.
Douglas, A. R. Merritt
Douglas, Wyoming Coml. Co.
Egbert, Wm. B. Wagner.
Egbert, Ward Bros.
Emblem, Wegner & Buchner
Evanston, Uinta Elev. Milling Co.
Four Corners, Cool, W. W.
Fort Laramie, Wolfe, J. L.
Fort Laramie, H. A. Henson
Fort Steele, F. B. Hess
Gillette, John T. Daly
Gillette, Gillette Commercial Co.
Gillette, J. T. Morgan & Son
Glendo, J. T. Moran
Glenrock, D. J. Smythe
Guerney, H. B. Wildy
Greybull, Consumers' Supply Co.
Germania, Wegner & Buchner
Hillsdale, T. M. Curry
Hudson, Updike Lbr. & Coal Co.
Hulett, Hulett Rochdale
Kayce, Kayce Mfg. Co.
Kemmerer, Kemmerer Hdw. & Furniture Co.
Lander, Vaughn-Macey Co.
Laramie, Laramie Gro. Co.
Lingle, Lingle Supply Co.
Lovell, J. W. Ralph Robertson
Lost Cabin, Big Horn Sheep Co.
Lysite, Big Horn Sheep Co.
Manville, Manville Elev. Co.
Medicine Bow, W. F. Shields
Monetta, Big Horn Sheep Co.
Moorcroft, American Rochdale Stores Co.
Moorcroft, Eddy, F. L.
Moorcroft, Kohns, Russell Co., Inc.
Nodo, I. M. & D. C. Jones
Opal, Opal Merc. Co.
Parkman, Parkman Co-op. Merc. Co.
Pine Bluff, C H. Carlstrum
Powell, J. E. Daniel & Co.
Powell, A. D. Persson
Rawlins, J. A. Hobbs
Riverton, Roy N. Hays Co.
Riverton, S. A. Woodring Co.
Rock River, Fair Trading Co.
Rock Springs, Fred M. Mills
Saratoga, Saratoga Commercial Co.
Shawnee, Geo. Robinson
Shoshoni, Big Horn Sheep Co.
Slater, W. E. Slater
Story, Buckingham Bros.
Thermopolis, Enderly Hdw. & Lumber Co.
Torrington, Eaton Grain Co.
Torrington, Elquest Hdw. Co.
Upton, F. L. Huff
Van Tassell, American Co-op Ass'n
Van Tassell, H. L. Bushnell
Wheatland, Shepard & Brandon
Worland, Washakie Trading Co.
Worland, Worland Merc. Co.

Handle Carey-ized Products — Ask Them

What Is Hay Worth?

In the winter of 1918 and 1919 the number of cattle and sheep kept in Montezuma county was too great for the hard winter that came on. This hard winter caused the feeding of more hay than usual and the price went up to $45 and even $50 per ton. The move started in the fall of 1918 to reduce the number of stock on feed in the county, continued for the fall of 1919. At this time there is a large surplus of hay unsold and the stock remaining in the county is not sufficient to consume this hay.

A considerable number of farmers have depended upon this local trade for the sale of their hay. Freight rates on hay are high, being $9.40 per ton to Denver and $20 to Texas points. To bring a fair price to the growers in this valley it would be necessary to sell at $35 to $40 per ton on the outside. These matters have brought up the question of what hay is worth to feed out in this county on the farms.

Mr. Geo. Bowman of Cortez is doing some testing to find what his milk cows are paying him for his hay. On December 1, he began weighing the hay and grain that he feeds and also the milk that his cows are producing. This milk was tested for butter-fat by County Agent Newsom and the figures are given herewith together with the circumstances. Mr. Bowman is milking three cows. Nellie is a 2-year-old and was fresh April 25, 1919. Daisy is a 3-year-old and was fresh April 21, 1919, and Connie is 7 years old and was fresh June 17, 1919. The test was for the first eleven days of December, 1919. Tabulated the results are as follows:

Name.	Lbs. Milk.	Test.	Lbs. Butterfat.	Value at 72c.	Feed Daily Grain.	Feed Daily Hay.	Feed Val. 11 days Grain	Feed Val. 11 days Hay
Nellie	86	6.0 pct.	5.16	$3.61	4 lbs.	20 lbs.	$1.32	$3.46
Daisy	140	6.2 pct.	8.63	6.26	6 lbs.	20 lbs.	1.98	3.46
Connie	183	4.4 pct.	8.05	5.79	6 lbs.	20 lbs.	1.98	3.46
Total	409		21.89	$15.66	16 lbs.	60 lbs.	$5.28	$10.38

It will be seen that the value of the butter-fat is $15.66 for the eleven days from the three cows. Allowing 3c for the grain when it can be bought for 2½c, we have $5.28, leaving for 660 pounds of alfalfa hay $10.38. This means that Mr. Bowman's cows are paying him $31.40 per ton for his alfalfa hay on his farm. There are two other items, the labor and the manure. Investigators generally count the two of equal value. How much are you getting for your hay?

Is Man or Cow Responsible?

"Fifty per cent of the dairy herds now losing money for their owners could be made to show a profit simply by a change of managers," is the statement made a few days ago by one of the leading agricultural authorities. Rather rough on the herd managers, isn't it, or shall we consider it a compliment to the general quality of the cows? If one-third of the cows in the United States are unprofitable, we are inclined to agree that one-half of them are unprofitable through no fault of their own.

In any dairy section we can see on one side of the road a dairy farm on which every cow in the herd is making money for her owner, but just across the road is another dairyman who although seeming to have every chance as favorable as his neighbor, is never privileged to pay an income tax. Where does the fault lie? Is it the cow, or the man behind her? It is the tendency of man to avoid responsibility and criticism. So he blames the dumb and unprotesting cow that is forcibly detained on his premises.

But where the criticism really belongs is often shown when such herds are dispersed and go into the hands of real dairymen and given a chance to make good. With better feed and better care many of these herds become money makers. A number of record breaking cows that have been reported within the past few years were purchased at a nominal price and were supposed to be only slightly above average. But a change of ownership and management enabled them to demonstrate their real ability to convert feed into milk at a profit.

The cow testing association is doing a great work in introducing better methods and pointing out the low producers. It not only points out the inefficient cows but also shows the inefficient men. Let us therefore withhold our judgment concerning the so-called unprofitable cow until the evidence is all in, until we know whether the cow has had a chance to make good. If she has had every chance and is proved unworthy, let us get rid of her. If the owner is to blame he should either change his ways or get out of the dairy business and into something that he can handle successfully.

A "square deal" for every cow will result in a "square deal" for every cow owner, as far as production is concerned.—J. E. Dorman, Western Office Dairy Division U. S. D. A.

Lousy Hogs Expensive.

Lice on hogs are extremely expensive. The fact was proved in experiments recently concluded by the Bureau of Animal Industry of the United States Department of Agriculture. It was shown that lousy hogs not only consume more food and make less meat, but that they are uneasy or restless, a condition that doubtless lessens the pork-producing abilities of the animals. When not eating, the lice-ridden swine spent most of their time rubbing themselves or running around. If strangers came near they were noticeably excited. This did not hold true of the hogs free from lice.

Three experiments, each extending three months or more and with from twenty to thirty hogs as subjects, were conducted. In one experiment it cost exactly $1 a hundred pounds of pork more to feed the hogs with lice than it did to feed the clean animals. In another, it cost $1.50 more, and in the third, $2.94 more. The specialists who conducted the experiments reached the conclusion that the main reason why hogs with lice consume more protein feed is due to the fact that the lice suck the blood from the animals, and the latter must use more feed to replace their losses.

But the lice-ridden hogs can not make up for the blood sucked by their parasites. For instance, at the beginning of one experiment, fifteen hogs with lice weighed a total of 1,167 pounds, and fifteen hogs without lice weighed 1,025 pounds. At the end of the experiment the lousy hogs weighed 2,872 pounds, and the clean hogs weighed 3,150 pounds, although the total feed consumed by the clean hogs weighed only 203 pounds more than that eaten by the animals with lice.

Probably Necrobacillosis.

I have two shoats that fail to urinate properly. The urine instead of passing off freely, is held under the sheath, forming a bag, which, upon being pressed the urine can be forced out. Will this have a bad effect upon them or would it be best to enlarge the opening in the sheath?—Subscriber.

In all probability this is a case of necrobacillosis which is manifested in the following diseases: Calf diphtheria, contagious foot rot, lip and leg ulceration of sheep, bull-nose and canker in pigs, etc. The inside of the sheath becomes inflamed and later affected with deep seated ulcers. If the pigs are examined closely ulcers will probably be found in the mouth or elsewhere on the body. Occasionally the lesions are in the intestinal tract and there is an absence of external lesions. Occasionally a pig may be saved by early cauterization of the ulcers, but most of them die. The disease is infectious and sick animals should be destroyed and the carcasses burnt, or buried deeply with quick lime. In this case, the infection being in the sheath, there is no hope for them, since the lesions cannot be reached for appropriate treatment. Destroy the pigs in question and then clean and disinfect the premises.—G. H. G.

Using Hercules Dynamite to Break Hard Pan.

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Doubtless there are some places on your ranch where crop producion is lessened because a hardpan prevents proper drainage.

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More than 175,000 New Butterfly Separators now in use.

What Is Silage Worth?

H. S. CALDWELL.

We have, from time to time, heard a great deal about the value of silage. None of these comments take into consideration the quality of the silage itself. The writer has made a number of tests to show the amount of corn contained in the silage as compared with the fodder and has found some very pronounced differences as to the relative value of silage taken from different silos. The samples examined were taken near the top of the silos. The container is a round steel cylinder, which is worked down into the silage, getting a sample containing all the grain just as it lies in the silo and not dropping any as taken out.

A little data concerning the sample under consideration is worthy of a place here for its remarkable showing as to the value of the silo on a farm. All figures given as well as methods used have been very carefully verified. All expenses incurred in raising the corn were paid for with check. The silage was sold for cash and paid for with check, the load of corn sold was for cash and the three feeds were estimated at the same price per bushel. The writer contends that when silage is sold for a certain cash consideration the silage is worth that much to the farmer owning the silo, but the silage might not be worth to the purchaser what was paid for it.

To find out the actual value of the silage is the purpose of this article. The buyer of silage for feeding need not buy it without any reference to its value as has been done very largely in the past.

The farm on which this corn was raised was purchased two years ago and previous to this it had been rented. Weeds and especially wild oats have run the ranch until a real farmer landed. The field where it was raised has been out of alfalfa for five years and the farm has not been manured or otherwise enriched. This field was planted to beets and a very good stand resulted, but the wild oats were so thick that it was decided to replant to corn. It was harrowed four times with a spring-toothed harrow and planted to corn June 1, 1919. The seed used was one-half yellow and one-half white dent, obtained from nearby farmers. The field contained 35 1-3 acres. Three acres were completely destroyed by the cut worms and not replanted. The fields in the beet raising sections have been carefully measured at numerous times and are no doubt accurate. The season was very dry and irrigation water very scarce. As a consequence, only a light irrigation was given after the corn was in tassel. The corn was not what would be called a first-class stand and was cultivated very shallow four times. The crop was harvested a little early for making the best silage on account of shortage of labor. It was also not cut fine enough. Care, however was used in placing it in the silo; as a result, no mould has been found at this time and only a little top spoil.

The silage was sold for.....	$3,720.00
One load of corn was sold for.	92.00
Three loads of corn fed to hogs at	308.00
Total	$4,120.00

The returns averaged very nearly $117.00 per acre planted. All labor used in raising the crop and placing in the silo was hired and cost $417.00. This does not include the labor of getting the ground ready for beets, or cost of the irrigation water.

This field of corn was estimated at 65 bushels per acre by the owner. After weighing the sample the corn was carefully sorted out and weighed, showing that the silage contained one-fifth corn. On this basis the silage contained 2,250 bushels corn at least, as there is always a small amount of corn ground up in going through the cutter.

This corn, if purchased at the market price, would have cost $3,780, a little more than the amount paid for the silage. The purchaser has the use of the feed lots, water is furnished and plenty of straw for bedding, and it is safe to say that there will be plenty of fertilizer for this farm next year.

Based upon the above, the fodder, according to the digestible nutrients as compared to alfalfa, contained in this silage would be worth $1,335, making the cost value of the silage $5,-115.

After deducting the 63 tons of corn we have 203 tons of stover which at $5 per ton, would be worth $1,015, but if hay had to be bought at $20 per ton to take the place of the fodder it would be worth $2,030, estimating that one ton of hay would take the place of two tons of fodder.

Taking the cost values, then, this silage is worth 35 per cent more than was paid for it. According to some of the past feeding experiments, this silage would be worth $25 per ton.

A Modern 64-Page Two-Color Hoe Perfecting Press.

(Continued from Page 3.)

partment, too, is being strengthened. Miss Douglass now spends much of her time in traveling and she is in continual contact with the farm women of this western country, therefore capable of advising on farm household problems with knowledge of actual conditions. I hope the women will make even greater use of her during the new year. She is at your service.

Mr. Vaplon is continuing his poultry work, and he now has in preparation for use during the next two or three months several special articles that will be worth careful consideration by farmers and their wives. I believe in putting the emphasis always on farm poultry raising and not on fancy poultry stock. That is why Mr. Vaplon looks after the work; he is a practical poultry raiser of twenty years' experience.

Mr. Parsons continues his work in dry farming, and many of you owe him a debt of gratitude for having set you straight on methods that will bring success where there is no water for irrigation.

We shall also continue to have the excellent personal attention to our veterinary department from Dr. Glover, who is one of the best men in his line, from a scientific and practical standpoint, in America. He has been honored in the past with the presidency of the American Veterinary Medical Association. It is certainly gratifying to have a man of his standing in the scientific world give his personal attention to the affairs of our readers. We cannot compensate him for this in any adequate way, for he is doing his work in a spirit of unselfishness, because he has lived in this western country forty years and has been a developer in agriculture right from the start. His field has always been the care of farm animals, which is a very essential feature, for what is the use of raising stock if we cannot bring it to sound and healthy maturity? I am sure our readers appreciate the Doctor's sound advice and sane suggestions, which are always calculated to prevent the development of livestock diseases through better methods of care and sanitation.

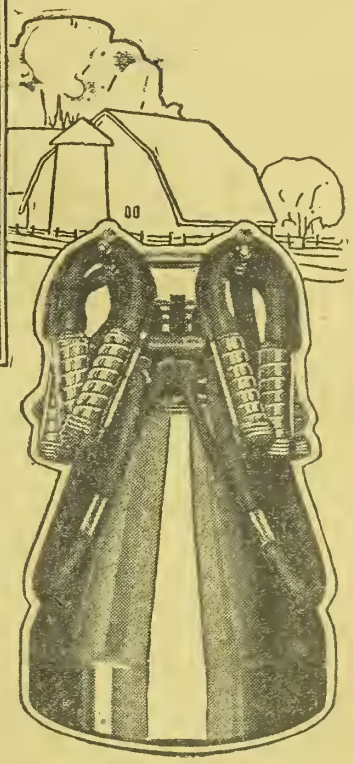
Prof. Morton remains on the editorial staff as an occasional contributor, but a constant adviser regarding livestock problems. He and Mr. Lindgren work closely together and I am glad that we have been able to keep the Professor's name on our list of editors.

I want you to watch us grow. We expect to give you more reading matter of the right sort, and to make every issue a handbook on practical farming for this territory. When you are in Denver remember the number—1518 Court Place, just opposite the court house—and don't fail to call and see the new press and the new home of YOUR magazine.

Shorthorn Sale at Denver.

One of the events of Stock Show week in Denver will be the sale of Shorthorn breeding cattle, held on Wednesday, January 21, under the auspices of the American Shorthorn Breeders' association. The offerings will include thirty bulls and twenty females, picked from the best western Shorthorn herds. This sale will offer farmers and stockmen an opportunity to buy foundation stock, or sires for range use. For the experienced breeders it will be a chance to select good individuals for replenishing the blood of established herds. No other sale of breeding stock ever scheduled for the Rocky mountain region will show such a selection of choice animals.

Madison county, Idaho, farmers, at their annual Farm Bureau meeting, appointed a committee to circulate petitions to get the farmers to back the county commissioners in enforcing the weed law. The committee apportioned the county by districts among its members to make the canvass. The dry farmers were specialy interested in the move.



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You too will be "Happy as a lark", when you have a Perfection to help you.

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Write us and we'll send you names and addresses of Perfection owners to whom you can write, together with a free copy of, "What the Dairyman Wants to Know", the great book that answers every question about milking machines. **Why milk by hand?** Write to Perfection Manufacturing Co., 2152 E. Hennepin Avenue, Minneapolis, Minn.

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Prime Pelts Desirable.

The only way to go at the business of trapping wild animals is with the idea that you are going to make as much money as possible.

To do this those who are novices or who have been trapping only a very short time, should follow certain rules. And the first and most important rule of all is—don't trap until furs are prime.

If young trappers would remember this rule they would save themselves many bitter disappointments and thousands of dollars every year. It is the prime full-furred skins that bring the money and it's just as easy to trap them when they are in that condition as it is to get them before they are prime or after the animals begin to shed.

When you begin trapping let it be with the idea that you are going to get as many prime or nearly prime skins as possible. Don't let your eagerness to find furred money-makers in your trap carry you to the folly of trapping too early, for by early trapping you are almost certain to get the unprime and hence unprofitable skins. If left a while longer they would be full furred and bring much more money.

Here is an instance of how too early trapping really curtails the trapper's profits. A youth, new to the trapping game and eager to make some money, trapped for mink and got several in October. He shipped his pelts off to market, where a fair and expert grader couldn't give them anything but a grading of No. 4 on account of their sparse hair. The price the boy got for them was in the neighborhood of 40 cents apiece even though some of the pelts were quite large.

Of course, he was tremendously disappointed and doubly so when he learned later that if he had put off his trapping for a few weeks those same pelts would have brought him as high as $8 and $9 apiece.

"But when," the beginner asks, "is the best time to trap in order to get nearly prime or entirely prime skins?"

The answer can be learned either from the big fur houses or those who know the ways of animals and how climatic conditions affect them—from books or from personal experience. But it is generally safe to say that almost any skin taken before November will be unprime.

The beginner should learn at once to distinguish between prime and unprime skins. After your first catch or two you will find no trouble in doing this. A real prime pelt is one in which the skin is pink and white or creamy in color. The inner hair springing from this flesh is soft and abundant and the outer hair or "guard" hair is long, thick and evenly distributed. The unprime pelt, on the contrary, exhibits a bluish tinge in the flesh and both inner and "guard" hair are sparse and uneven, indicating that the animal is either shedding or growing new hair.

The beginner should not gather from this that unprime skins are worthless. Indeed, thousands and thousands of unprime skins are sent to market every year and are sold with profit. But these pelts are those in which shedding has just begun or those on which the regrowth is nearly completed.

How Sheepmen May Break the Speculator's Hold.

(Continued from Page 4.)

"As Prof. Bray has told you, and as you have heard from these men, there has been an increase of about 20c in local prices because of the wool pools, or co-operative organizations. Co-operative shipping is the art of conducting yourself so somebody can work with you. We must get team work if we are to get results. The pooling method is comparatively a new proposition. In Idaho one association of about 400 members, after being offered 40c on the Chicago market, sent a man down there and he got 60c, thus netting that county organization about $25000. In New York nineteen different organizations have been formed, and they are marketing their wool through these pools. They saved something over $60,000 last year. In Iowa there were about forty pools and about 4,000 members in all. The price offered by local buyers was from 38c to 40c, and the price on the Chicago market was 62c. Grading was done by representatives chosen by the wool pools in co-operation with government experts. This check on the grading was a saving of $250,000. That shows rather conclusively that these pools really pay.

"The Bureau of Markets, located at Denver, will be very glad to aid you in this marketing. I would suggest that a committee be appointed to meet with the college, the state and the federal authorities, and agree upon some means of marketing Colorado wool."

Cowmen Invite Sheepmen.

The secretary of the Colorado Stock Growers' association, Mr. Percy Houts, was asked to speak.

"This is the first time in 15 years that sheep men and cow men have thought there was anything in common between them. But an effort has been made to bring all of the livestock interests together in one representative body and work for the general good of all stockmen. In this state there are something like seven sheep associations. We believe that these associations should be gotten together with all other livestock associations on representative matters. The object of the State Livestock association is to handle such problems as transportation, freight rates, and all questions pertaining to the marketing of stock.

"A question of great importance to all stock growers is the supervision of the public domain. We feel that such supervision would be of benefit to all of us. At Salt Lake a resolution was passed to place the public domain under the supervision of the Department of Agriculture and give the various counties a part of the revenue. It is proposed that counties receive 35 per cent of the revenue which the government now receives.

"Our convention will be held during the Stock Show week in Denver, January 16 and 17. A cordial invitation to all sheep men is extended, and we hope you will be present and take part."

Mr. L. L. Heller of the National

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We will pay you the highest prices on the market for your muskrat if you ship immediately. Delays are dangerous; don't wait — ship today! Funsten grading and Funsten prices assure you largest returns. Every skin in your shipment will be given the best care and attention.

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Save your FUR skins and have us transform them into beautiful FUR PIECES, ROBES, and RUGS.
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Wool Growers' association, next gave a demonstration in cutting and boning lamb, accompanied by a talk on the need of stimulating the consumption of lamb. The American people eat only 3 per cent as much lamb as beef, yet lamb is one of the most palatable, nutritious and healthful of meats. He said: "There are a number of reasons why people do not like lamb as well as they should. One reason is that any kind of mutton or goat meat is put on the market and sold as lamb. I have seen 'lamb' chops offered for sale on the Chicago retail markets at a lower price than lamb carcasses were being quoted wholesale. They were probably sheep or goat. Thousands of goats are slaughtered annually, but you never hear of 'goat' chops on your bill of fare. Another reason is prejudice. One lady said, 'I never have any objection to eating lamb so long as I don't know it's lamb.' One man used to kill and serve lamb to the threshing crew when on his farm. One day they all objected, saying they wanted beef. He went to town, bought a quarter of beef, brought it home, let them see he had it, hung it in the cellar, and served lamb as usual. They were perfectly satisfied and did not know till he told them afterward. Another reason is that people do not know how to make the cheaper cuts palatable. A boned shoulder is a sweeter piece of meat than the leg and is as easy to cook and carve, yet it is often left for the butcher to make into sausage. Another reason is that people are out of the habit of eating lamb, for some of the foregoing reasons, and would eat more lamb if it were called to their attention. Sales of lamb in Kansas City were quadrupled not long ago by special advertising."

Mr. Heller boned a shoulder and showed what a neat roll of good meat can be made from an otherwise hard cut to carve. The 4-pound shoulder had 3 pounds of meat and 1 pound bone. Through not knowing how to use this cut, Mr. Heller said, people would rather buy rib chops, which he characterized as "a mouthful of tenderloin on a high-priced bone handle."

Witch's Island.

(Continued from Page 7.)

of an engine aft than they often put in such craft. Big boat, she was, close to four hundred tons, seaworthy, take you anywhere. Man named Perham owned her, lived on her mostly, made long cruises, solitary citizen—not given to taking company along. Year ago he was up the Mediterranean, went to Egypt. Then he came back and showed up at Havana. Lay there a couple of months. Then sailed, supposedly for New York. Never got there."

"Lost at sea?" said I.

Grayson hesitated. "The Zenobia was wrecked and—well, you might call it lost at sea, completely lost. Only it was in a part of the sea where a boat bound north from Cuba had no business to be. Never mind just where. We'll come to that part of it later, when you've decided whether it's to be deal or whether it's to be dumb. But she was lost, all right. I saw her, or what was left of her—seas and looters had made a pretty clean sweep of her upper works, you'll understand."

"But the people aboard her?"

"To my knowledge, no one is alive. Some may have got away in the boats, but I've found no trace of them."

"You've made inquiries, then?"

"Every inquiry possible for a man with a short purse."

"You've seen the hulk, you said?"

"Happened this way. There's a quarter-breed skipper of a schooner for whom I'd done a favor or two, and who took me along for a while. One morning we made a group of islands, looked in on the chance of something turning up, and came smack on the Zenobia wedged on a reef and with her deck awash. Looked fine for my host—nobody lives on the islands, and he seemed to be the first arrival since the wreck. So we ran in, and piled over, all hands, to see what was portable on the yacht. Found two dead men and another dying from a broken head. Old Louis—that was the skipper—would have been a pirate a century or two ago, but he has good streaks mixed with the bad. He ordered the dead men buried, and the third man taken to one of the islands, where he told me off to watch him. Mainly, I reckon, because the poor devil was in delirium and raving in a tongue Louis didn't recognize. It was, in fact, German. I have a smattering of several languages, and Louis figured, no doubt, I might pick up some information to the general advantage.

"There wasn't much to do for the injured man; just sit beside him, give him a drink now and then, listen to his maunderings and try to make head or tail of them. It was slow work, but presently I caught something, and then something more. Altogether it wasn't much. He went out about sunset, and then Louis and his gang pulled ashore and lent a hand in burying him. Good soul, old Louis, according to his own lights.

"He went off to the schooner for supper, and the crowd turned in early, for they'd had a hard day's work. When the last of 'em was snoring I picked up a lantern and dropped into the boat. I had a job on hand that must be done at once, if at all, and—well, I did it. When it was over, and the sand was shoveled back into place, I had definitely the something the delirious man had raved about. Louis had supposed the two drowned. Don't wonder he did, seeing how he found the bodies washing about the forward deck and all bashed up about the heads, as if they'd pounded and pounded against the bulwarks and houses. But, examining close and with the lantern to help, I'd made up my mind they died another way. There was a bullet hole in the head of each, though I'd never have found it if it hadn't been for the tip the German gave me."

"What was it? Double suicide?"

"Meaning that, seeing they had to go, they picked the route?" Grayson said. "Might have been, at first glance. On second thought, I didn't hold to the notion. Owner and master they were, the two, and somehow, my German's tip didn't incline to that theory. Then too, one had a life-belt, as if he was scheming to keep afloat. I pulled back to the schooner, mighty meditative, and all night I tried to figure out just what had happened and why. There'd been no papers on either master or owner to help in the solution."

"What did Louis think?"

"He didn't have a chance to think about it," Grayson said drily. "He didn't get back to the returns. Besides, he was a deal more interested in breaking out some stuff from the forehold of the wreck than he was in what happened to any old owner of it. He had got the hatch pried open, and a couple of the hands, being fair divers, had succeeded in passing a line about a big packing case. There were half a dozen of the cases, the men said, and no time was lost in the morn-

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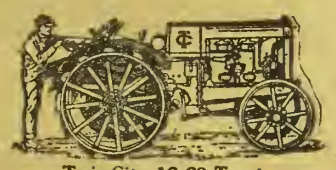

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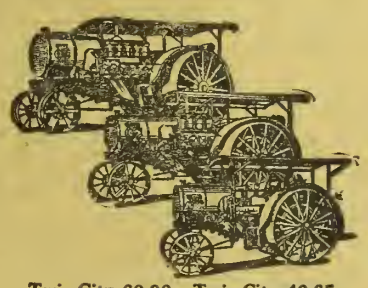

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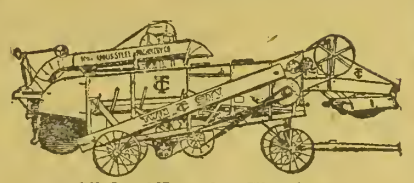

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ing in hoisting out the topmost."

"You opened it, of course?" said I.

"The crew did, and a precious time they had of it. Still, Louis was something more than a philanthropist; give him time, and he'd force a safe with an axe. So at last he and his gang broke through the casing, and pried off a board, and came to an inner packing. I watched 'em, wondering. The man who was responsible for that box meant to have it waterproof. There was a layer of wood, then a metal layer. They got through the various strata eventually, crowded around the box, and fell back with a howl. I peeked over their shaking shoulders."

"And you saw——?"

Grayson looked me, very steadily, in the eye. "I saw the last thing I expected to see, then and there—an Egyptian mummy."

I whistled.

"A mummy," he repeated. "Set me back a bit, I don't mind confessing. Didn't know then, you understand, that Perham had been up the Mediterranean. Not knowing, I felt a sense of weirdness in the situation, this relic of another age and race lying there, with half a dozen mongrels of as many other races shying away from it, and gibbering like so many monkeys, and the men who'd brought it there at such pains lying under the sand over on the nearest island. I guess I shrank back along with the rest, but Louis was at me in a minute—vein of the practical ran through him, all right. He wanted to know what the thing was. I told him, briefly. Then he demanded the market price of mummies. I hedged, first from lack of information, second, from a glimpse I'd had of the under side of the outer casing. Saw something there, a scrawl, part of shipping directions, apparently—and in Spanish."

"Well?" said I, not comprehending the import of the statement.

"I'd never heard of Spain exporting mummies. It struck me as odd. Added to what I'd picked up the night before, it made complications. I felt stirrings of intuition. Whatever else might happen, I didn't wish to have old Louis's semi-savages rooting through that case and the others in the hold. So I began to talk about voodoo—we'd a Haytian in the crew—voodoo and bad luck generally, and what befell inquisitive folk that broke into Pandora's boxes. Just then, to help out, one of the gang fell over a splintered plank and fractured a leg. He lay there groaning, badly hurt and worse scared.

"Of course, there was a tremendous powwow—they're as full of superstition as an egg is full of meat. Louis finally had 'em shove the box aside, and turn to cleaning up what stuff there was above the Zenobia's decks, unreeving running rigging, sending down the topmast that still stood—the yacht had lost two of 'em in the smash—and generally gathering in the easy salvage. The men worked hard, for they knew they were likely to have company soon enough, these devils are like buzzards for scenting a disaster. Sure enough, it wasn't noon before another ship came poking in from the south'ard, dropped anchor alongside us, and lowered a boat. As luck would have it, the newcomers were in such haste to share in the skimming before all the cream was off that they swamped their yawl and would have drowned two or three hands if they hadn't been able to swim like fish. When they got aboard the wreck, Louis and his men made a big fight, which ended in a sort of compromise. Louis told the intruders they could tackle the forehold, and then he hinted at a few of the things that'd happen to 'em. Didn't make much of an impression at the start, but just about the time they were getting fairly to work, the fellows about the hatch began to yell that they heard voices from below decks. And they did. That was the curious part of it; they heard a voice, at least."

"Then there was a survivor, after all?" I asked.

Grayson smiled wryly. "Voice was mine. The Zenobia had carried a bridge, and rooting about its fittings, I'd stumbled on three or four speaking tubes. It was all chance, of course, but I was taking chances. One of those tubes ran to the forehold—queer arrangement, but it was there. That tube terminated, fortunately, above the level of the water. So I breathed some sulphuric pleasantries into the mouthpiece, and up through the hatch bobbed three or four explorers, with nothing but the whites showing in their eyes, and every kinky hair on their heads standing straight as a ramrod. They knew well enough there was nothing alive down there, and the messages they had had from the other world came through smoking hot. There was risk of overdoing, but whenever I could that afternoon I told ghost stories. All hands took precious good care to knock off before sunset. That night one of our rivals fell sick with something that looked like small-pox—misfortunes were piling up handsomely, you see."

"And in the morning?" said I.

"Louis decided he had had enough, and had better escape alive with the plunder he had aboard. 'Tother fellow had the same notion. The schooners got under way, as if they were consorts, but once outside, they parted company. Louis came here, to St. Thomas, and I left him with my blessings. The next business for me was to learn all I could about the Zenobia."

"And what was that?"

"In some respects, little; in others, much. I heard of her stay at Havana and I went there. I prowled about the waterfront till I came upon a chap who had had dealings with Perham. He's the lad in yachting togs you saw with me; I've kept him by me. He's a carpenter by trade, when he's forced to work, and he had hammered together those big packing cases, one of which had bothered old Louis and his crew. He made 'em on the yacht, while she lay in Havana, and Perham had watched him very closely. Jose—that's his name, by the way—wondered a bit, but he's not brilliant and the pay was good, so he let it end with wondering. Still, he couldn't help picking up more or less information about the boat and her people. The owner was a quiet, grim person. The captain was a good deal of a sea-dandy, but new to the yacht, was taken on at Havana, in fact. Nobody else on board counted for much. The mates didn't figure, apparently. As for the German, he'd been the steward."

"But if your man Jose made the cases," said I, "didn't he learn what went into them?"

"No; the packing was attended to by Perham himself. Jose was called in to spike down the covers. And he didn't ask questions.

I thought over the tale for a moment. "It is a peculiar case," said I. "I'm not clear, though, to what it leads. Here's a yachtsman, wealthy enough, presumably, to gratify his tastes. He runs over to the Mediterranean, and picks up a mummy or so, comes back to these waters, repacks his prizes while he's lying in Havana, sails away——"

Grayson brought down his hand on the table. "Sails for New York and—piles up on a reef a deal nearer Panama. What's he doing there? What's become of his crew? What kind of a scene had there been to set the steward raving of bullets rather than of shipwreck? What was the need of elaborate repacking of the mummies? They had come across the Atlantic safely enough, hadn't they?"

"I suppose so," said I.

"There are other points to consider. There had been a blow a couple of days before we stumbled upon the wreck, but nothing to bother a deep-sea craft like the Zenobia, provided she kept off the rocks. What had struck her navigator? The islands are on all the charts. He had his engine to help him out of a tight corner."

"I'm sure I don't know," said I.

"Nor do I—yet. But I am going to find out. I can if—if you, Scott, will back me. I can lay hands on a diver's outfit. I've got Jose. With another man and yourself——"

"There, there!" I broke in. "I'd not amount to much in that sort of thing."

"—we'll probe the mystery," he went on, as if I had not spoken. "There'll be a chance to make expenses, there must be loot enough still on board. That's not the main idea, though. I want to get at the secret. I want to know what came to pass and why. Lord love you, man, doesn't the game

The Sugar Beet

An acre of beets is the source of three different incomes; the cash for the beets; the value of by-products as live stock feed, and the sustained increase yields of other crops by rotation with beets.

The greatest amount of human food produced from one acre of Western American irrigated farm land is BEET SUGAR, which, in addition, produces valuable cattle feed in the form of by-products.

The beet tops from one acre of sugar beets are equivalent to about one ton of alfalfa—pulp and waste molasses have the approximate value or two tons of corn silage.

Better dividends are paid through the increased yields of other products by investing the benefits of this feed in the soil through proper live stock feeding, in the state that produces the feed, than any increased cash proceeds that might be derived by shipping the feed out of the state and depositing the cash in the local banks.

The total irrigated and cropped acreage of Colorado in 1909 was 1,220,000 acres
The total irrigated and cropped acreage of Colorado in 1919 was 1,650,000 acres
In ten years an increase of 35 per cent, or..... 430,000 acres

The total sugar beet acreage in 1909 was 107,000 acres
The total sugar beet acreaege in 1919 was 186,000 acres
In ten years an increase of 75 per cent, or 79,000 acres

Relatively the sugar beet acreage increased twice as fast as the irrigated crop acreage. The maximum beet acreage was obtained at a time when the price of all other crops and labor was higher than ever before.

This irrigated acreage is located in fifty-four out of fifty-seven counties. The beet acreage, however, is located in only twenty counties.

The ten northern Colorado counties in which beets can be grown contain about 720,000 acres of cropped and irrigated land.

Of this amount about 146,000 acres were planted to beets in 1919, or approximately one-fifth of all the available land.

The Great Western Sugar Co.

take hold of you? Where's your imagination?"

"It's stirring, I admit," said I. "Still how can you be sure the wreck is there yet? The underwriters will have been after salvage, and——"

"She wasn't insured," he interrupted. "The loss of the boat has been reported, and a cruiser went out of her way one day to take a look at the remains, but didn't investigate closely. As for scnooners—why, the tale of the hoodoo has spread from one end of the Caribbean to the other. And she won't have broken up. There's been no hurricane to finish the job. Oh, the real egg is left for us to crack, sure enough!"

"Um!" said I doubtfully. "Um! I guess—I'm afraid, that is—out of my line, you know—rather short of cash. Most interesting matter, but—but——"

He was gripping the edge of the table, and bending toward me. "Don't turn this down, Scott! You've got red blood in you, show it. Play the game. You've got the time, you've got the few hundreds to make the plunge. Quit your beaten rut for a fortnight. Gambler's chance? Take it. Life, real life, is a gamble, anyway, if ever you hope for a capital prize."

His eyes held mine. I did not quail before them, but under their power I felt resistance lessening. Beyond him the whitewashed walls of the room seemed to fade, and in their place were waving palms which beckoned, and lonely islets over which lay tempting mystery. And because I was one of those mortals whose course had lain always along beaten paths, the lure of the wilds, once felt, drew me on like a resistless current.

"Grayson," I said hoarsely, "Grayson, I'm with you."

He bent across the table and wrung my hands. Then he sprang to his feet.

"Come on!" he cried. "We'll get to work at once."

I, too, had risen, and catching my arm, he led me from the place; fearful, it may be, of reversal of the verdict so precipitately reached. Turning toward the water-front, we hurried along until the narrow sidewalk was blocked by a group of people, tourists, apparently, just landed at the little wharf.

"New York boat's come in," he said in my ear. "Must be. These are Americans by the trade-mark. . . . Ah! I beg your pardon"

He had shouldered a couple of men sturdily enough, but now he stepped aside, pulling me into the roadway after him. His tone had changed as abruptly as his course, as he made way for a young woman, with the chattering newcomers but hardly of them, for she walked a little apart, with an elderly man following her respectfully. She was a slender girl, in the early twenties, with a face of the sort one remembers; cleancut of feature, clear of skin, with a chin which betokened firmness, and eyes which looked out upon the world with a level, fearless glance. They rested upon my companion and me, and she inclined her head very slightly, in acknowledgment of Grayson's courtesy. And then she had passed us, the elderly man holding his respectful place behind her and bearing two heavy suit-cases with an air of entire absorption in his task.

Grayson whistled softly, and stood looking after her, until the rest of the party, having straggled by, I pressed his arm and suggested that, whatever our business might be we might be about it. At this hint he roused himself and set off again at a round pace.

"Pretty girl that was," said I. "Don't see many like her in these regions, I fancy."

"No," he said shortly.

"None too many anywhere," I persisted.

"No, none too many anywhere."

"And there'll be fewer yet where we're going, eh?"

"I can safely assure you your'e right, Scott," he told me with a tone which had its touch of grimness.

(To be Continued.)

The Value of Manure

Trials made on the various experiment fields by the University of Missouri College of Agriculture have shown that an average application of eight tons of manure to the acre once in four years has increased the yield of corn 10.5 bushels, oats 5.17 bushels, wheat 5.24 bushels, and clover hay 937 pounds. At prices which prevailed the first of tne year this increase would be worth $4.83, and at pre-war prices $2.34, for each ton of manure applied. It will cost the farmer not more than one dollar a ton to collect the manure and haul it to the field. This would leave a net profit of $3.83 at present prices, or $1.34 at pre-war prices, for each ton of manure applied. The full value of the manure becomes more noticeable after the first four years, for it leaves the soil in better condition and its effect upon later crops is often quite significant. This becomes omre noticeable after the first two or three applications, since a liberal application of manure every four years will result in permanent improvement to the land.

By very careful handling of manure a livestock farmer, on average soil, should be able to return annually, about two tons of manure per acre to his cultivated fields. It is not easy to save this amount except by very careful methods and persistent efforts. It is necessary that all straw and other suitable materials be worked through the barns as bedding. This not only adds to the comfort of the animals, but serves as an absorbent for the liquid manure. If straw piles are sold, burned or left to rot it is, of course, impossible to return this amount of manure.

Keep the manure together; don't let it get scattered about the barn or lots. Hogs and chickens may waste much of it. Where possible haul it to the field as soon as produced. If this is not possible, store it in shallow concrete lined pits to prevent leaching. Use plenty of bedding in the stable or on the feeding floor to absorb the liquid. Straw, old hay, grass and leaves may be used for this purpose.

About 35 per cent of the nitrogen and 55 per cent of the potassium is to be found in the liquid material. There is, however, practically no phosphorus in this part. The plant foods in the liquid are all in soluble form and are very easily lost through leaching. Furthermore, the nitrogen in this liquid portion readily passes off as ammonia when the manure is allowed to ferment, hence the necessity for preventing fermentation as far as possible.

The total solid and liquid manure produced in a year by a well-fed, mature horse is about eight tons, with a plant-food value of more than $30. In the case of a well-fed steer weighing from 1,000 to 1,200 pounds, the production is nine to eleven tons, with slightly greater total value than the manure from a horse.

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Any of our readers who may be interested should communicate directly with Mr. Horn at Briggsdale.

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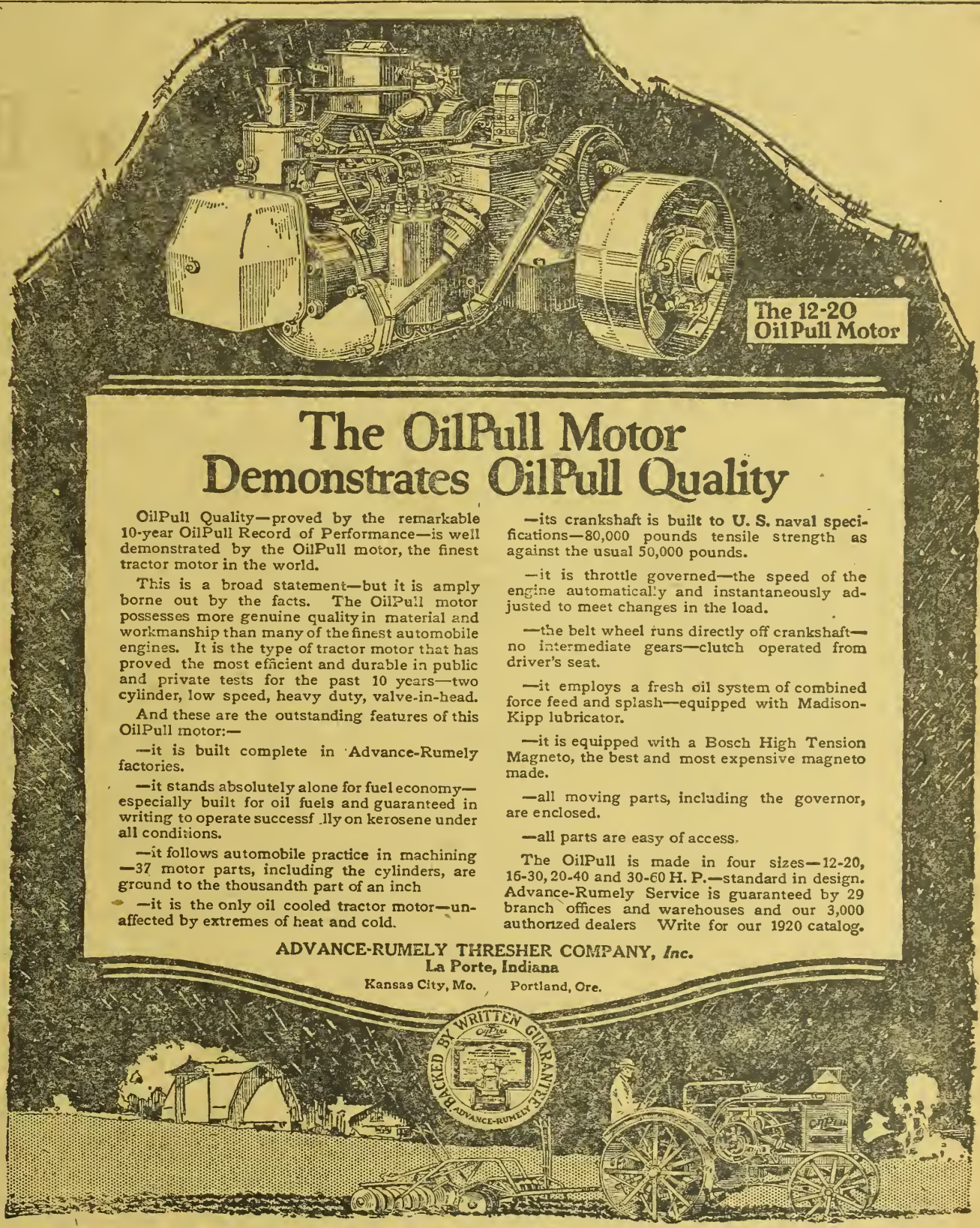

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The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

The Babie.

Nae shoon to hide her tiny taes,
Nae stockin' on her feet;
Her supple ankles white as snaw,
Of early blossoms sweet.

Her simple dress o' sprinkled pink,
Her double dimplit chin,
Her puckered lips and baumy mou'
With nae ane tooth within.

Her een sae like her mother's een,
Twa gentle, liquid things;
Her face is like an angel's face;
We're glad she has nae wings.

She is the buddin' of our love,
A giftie God gied us;
We maun na luve the gift owre weel;
'T'wad be nae blessin' thus.

We still maun lo'e the giver mair,
An' see Him in the given;
An' sae she'll lead us up to Him,
Our babie straight frae Heaven.
—Jeremiah Eames Rankin.

Gifts for Baby.

The wee "youngest" from his or her entry into the family exacts his toll of gifts from the friends who are going to be his because they are those of his maternal or paternal parents. And the gifts are his just by his right of being here.

The things you give may be divided into two classes, the things the baby doesn't really appreciate but his mother does, and those that are just for him; and, we might add, that his mother must take care of.

Every mother appreciates getting the little wearable things, knitted or crocheted caps, bootees of kid or of wool, tiny socks and sweaters, carriage robes or pillows, and the numerous things that may be used for the baby's bath—small very soft towels, soft wash cloths of old linen, bath aprons, celluloid soap boxes, brushes, and powder boxes. Some of the prettiest and newest small gifts that have been in the shops for some time are the little painted hangers and drying frames for woolens. They are almost invaluable to a busy mother.

For the wee laird there are soft animal toys to be made at home out of bath toweling or something similar which may be washed often, a rattle with a cover from the same material is just as good a rattle, but much more fascinating. There are carriage straps covered with ribbon to which one or two small toys may be attached by ribbons, and very small hot water bottles, which may help out the ride. Some of the toys that get crows of delight when mother most needs them while trying to hurry the small body through its bath are the little floating ducks and turtles, that are just as much fun when they're dry. In the "five and tens" most anywhere now you can find soap molded into animal and baby shapes which are useful us well as ornamental. They do slide into mouths quicker than other soap, unless the mother manages to use them just for show all the time.

Mary's New Baby.

Dear Big Sarah:

Since I have a Sarah of my very, very own, and she is a Sarah, too! mind of her own, a smile, which I say is very sweet and just like yours, but John insists is still too wabbly and wiggly to simulate much of anything but a worm washed out in the springtime, which is an awful way of putting it; also she is already developing a certain pride very much like yours in her hair.

She is going to object to her name, too, just as you always did—for she wrinkles her nose at me when I speak to her. But you are right again about being glad she is a girl after my two boys, for it's going to make the biggest difference with them. They are so proud of her!

The dress "just fits fine," as is always the rule with every baby you know and it surely was a boon to me. You know most all my baby things were worn out and I didn't make many new ones.

But what I have made have conformed to three rules, no bows to tie on wigglers, just as few buttons as there could possibly be, and just as many things of fine cotton crepe as I could get. I know it isn't as pretty as nainsook or fine batiste, but it has gone in. Several petticoats two dresses, pillow slips and covers and a slip-over for some of the nicer comforts while they're quite new. They wash up easily and are so beautifully white—don't tell me I'm lazy, for I won't have it so. If there is no ironing I may have time to chant Latin poems to her just like Winifred Stover's mother, and then she won't have the awful time that you and I did over Caesar and Cicero at the academy!

Now, Sarah, the ice cream story may be true, I'm not doubting your word, but are you sure there weren't attendants from the insane ward there too? You know what a queer impression just half the truth gives sometimes. You have my permission to start right in if you think nothing but cones will do; but you know my beliefs concerning the proper sort of beginning training and environment and I am sort of prejudiced against soda "squirting" as a permanent profession. However, she is my daughter, but your namesake.

I don't believe that anything else is "news" to me any more, and there certainly won't be any news at all for you if you don't stop on your way from the Stock Show. Little Sarah and I are just waiting. Lovingly,

MARY.

A Layette.

Patterns and pictures of baby things are pleasant to look at, but a real layette that we can feel of and measure, is positively full of thrills. Such a layette has been in circulation for rural women's club meetings and institutes from among the "properties" of our Colorado Agricultural college.

Since we were privileged to see it we want to describe it so that you might at least want to see it too. The materials are good, but everything is so simply and beautifully made that the "quality" stands out ahead of everything.

There are just two dresses, one of very fine dimity trimmed with the tiniest and daintiest of edgings and the other of nainsook. The nainsook is very plain, the cover edge scalloped and finished with a shaped hem which is feather ticked on just as daintily as anything could be.

There are three petticoats and one "pinning blanket" which is sometimes dispensed with in some layettes. The cotton petticoat is of the finest cambric —finished with feather stitching at the bottom and fastening on the shoulder. The little "Gertrude," and petticoat which has cotton waist and pinning blanket were of the best of all wool flannel. The seams were rather small and were opened on the wrong side and finished with herringbone or catch stitch.

There were two sorts and two weights of stockings and underwear, one weight all wool and the other silk and wool for warmer weather. One tiny shirt was of the type that buttons

Next time you buy tea, don't think of "a pound of tea." Think of the cups of tea you are going to drink.

Think of the pleasure you are going to get. Think of the real tea-flavor.

Then think of tannin—ugh!

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There are four flavors of Schilling Tea—Japan, Ceylon - India, Oolong, English Breakfast. All one quality. In parchmyn-lined moisture-proof packages. At grocers everywhere.

A Schilling & Co San Francisco

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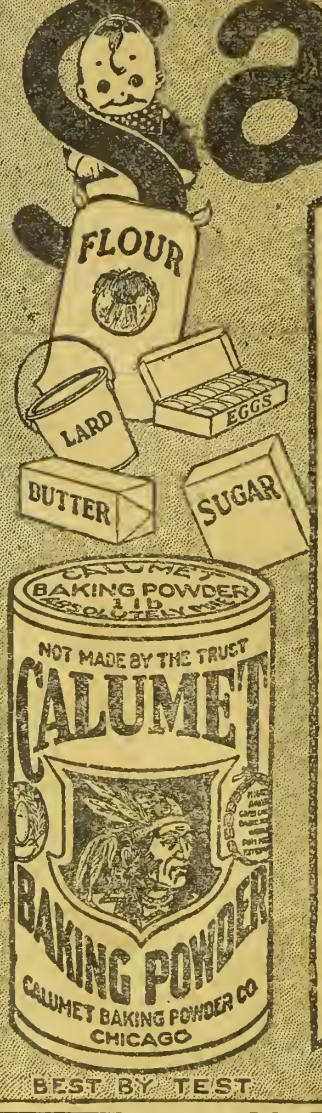

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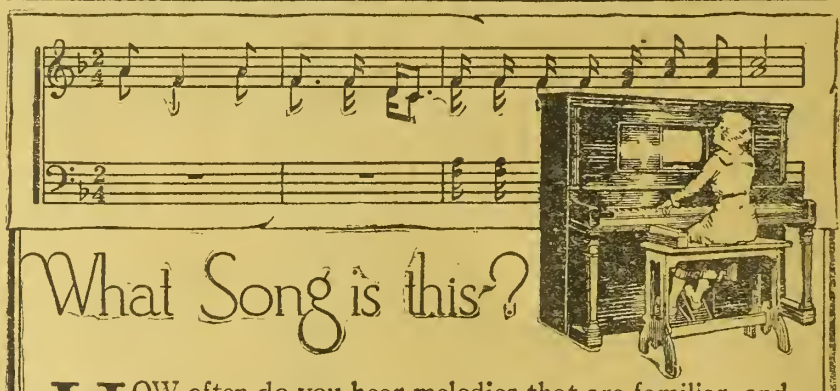

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up and down the front and the other had the straps which slip through on the fronts and pin in the back. The band was of wool, double, and one side had the ribs going lengthwise, the other side had the ribs going crosswise, the double weave giving much elasticity.

Two sorts of shoes, one knitted bootees and the other a tiny flannel shoe made according to a simple, well-fitting pattern, which buttons just like a shoe from the shops.

Two kimonos, one short and the other long, the long one of canton flannel and the short of cashmere wool, completed the outfit.

Patterns for the little flannel shoes are available from this department, the others may be secured through almost any pattern company.

Bulletins on Infant Care.

Many are the good books upon infant care and some of these are most valuable. There are, however some very good bulletins which do not take as long to read and which give just as good information available for free distribution. If you do not care to write the government offices for them we can procure them for you if you will just say so.

There are two from the Bureau of Education," "Prenatal Care," and "Infant Care," by Mrs. Max West.

There is a very good Farmers Bulletin on "Feeding Young Children," all three of which are concise and good.

The Lives of Shoes and Stockings.

EDITH ALLEN.

Good care of shoes and stockings saves money and keeps the feet in good condition. Good care of stockings means that they be washed before they are worn. Strange as it seems, this makes them last longer. It is not practical for every one to wash their stockings every day, but the nearer one can come to changing them every day and having them washed as soon as removed, the better they will last and the more comfortable the feet will be. Perspiration seems to rot stockings.

Six pairs of stockings bought at one time and worn by changing often will outlast six pairs purchased in succession. Choose stockings which are long enough. Heels and toes will not punch through them so fast and they will not cramp the feet and cause enlarged joints like too short ones. More broken arches and enlarged joints are caused by improper shoes and stockings than by standing on the feet.

When buying shoes get those which fit so that they do not restrain the action of the toes. Most shoes are made so that people can only use their big toes in walking instead of all of them, as they should.

To make shoes last, have two pairs of every-day ones beside best shoes. Have the every-day ones of the best fit and quality you can afford, wear one pair the first of the week and the other the last of the week. This lets each pair dry out between times of being used. Two pairs of shoes worn thus will last almost as long as four pairs worn one pair at a time, for perspiration rots shoes as well as stockings. Keep the shoes shined and cleaned and the heels built up. This keeps them in shape, makes them more comfortable and the owner respect them so that he will not abuse them.

Hot Lunch for Pupils.

Plans made by farm bureau and extension division home workers have made possible the reinstalling of the hot lunch system in the Richfield, Idaho, schools. Five school wagons, coming from long distances take the Richfield children to school, there being 135 youngsters who travel long distances. The children living at the farther ends of the routes leave home at 6:30 a. m. and do not get get home again until 5:30 or 6 in the evening.

PATTERN DEPARTMENT.

All patterns 15c each. Address WESTERN FARM LIFE, Pattern Department, 1518 Court Place, Denver, Colo.

Take Notice: Patterns ordered through this magazine are mailed promptly from the factory at Brooklyn, N. Y., and arrive in 10 to 12 days from the time order reaches Western Farm Life. Be sure to specify size and write name and postoffice address plainly and distinctly. Much delay in receiving patterns is occasioned by failure to observe these precautions.

Waist 3077, Skirt 3078.—A pleasing costume is shown in this combination. Serge is here shown with matched satin for vest, and for facings on collar and cuffs. This design would be attractive in black satin and crepe, or velvet and satin, duvetyn, broadcloth, crepe de meteor and crepe de chine, which are also desirable for its development. The waist is cut in sizes: 34, 36, 38, 40, 42, 44, 46 and 48 inches bust measure. It is a good model for mature figures. The skirt is cut in 7 sizes: 22, 24, 26, 28, 30, 32, and 34 inches waist measure. For a medium size 5¾ yards of 44-inch material will

All Patterns 15 Cents.

be required for the entire costume. The width of the skirt at lower edge is about 1⅞ yard. This illustration calls for two separate patterns.

3070—A Unique Style. This is a fine model for slender figures. Skirt and tunic portions are joined to blouse waist portions. The vest may be of contrasting material. Serge, duvetyn, taffeta, satin, or velvet is good for this style. Braid or machine stitching will be a suitable finish. The width of dress at lower edge is 1¾ yards. The pattern is cut in 7 sizes: 34, 36, 38, 40, 42, 44, and 46 inches bust measure. Size 38 requires 6 yards of 44-inch material.

3081—A Smart Style for the Growing Girl. For this, one could choose serge, velvet duvetyn, plaid or check suiting; linen, repp, poplin, and taffeta are desirable for its development. The sleeve is pretty in its loose wrist length finish, and equally attractive in elbow length. The pattern is cut in 4 sizes: 8, 10, 12, and 15 years. Size 12 requires 3¾ yards of 44-inch material.

2706— New Frock for Mother's Girl. You may make this of plaid or check suiting, with facings of serge or satin, or of wash fabrics with pique, drill, or linene for trimming. The waist is cut in surplice fashion and is lengthened by a full peplum. The sleeve may be in wrist or elbow length. Cut in 3 sizes: 12, 14, and 16 years. Size 14 will require 4½ yards of 36-inch material.

3072—A New Comfortable Apron Model. This style is easy to develop and is attractive for linen, lawn, drill, Indian head, sateen, percale, chambray and gingham. The fronts are stitched to form pocket sections over the sides. The pattern is cut in 4 sizes: Small, medium, large and extra large. Size medium requires 3½ yards of 36-inch material.

2760—A Practical Service Dress. Gingham, seersucker, drill, galatea, khaki, lawn, percale and flannelette are good for this style. The closing is at the side. The sleeve may be in wrist length or finished in elbow length, with a cuff. Cut in 7 sizes: 34, 36, 38, 40, 42, 44, and 46 inches bust measure. Size 38 requires 6 yards of 36-inch material. The dress measures about 2¼ yards at the foot.

3066—A Comfortable Play Suit. In this style the rompers portion are buttoned to the waist, which closes at the left side of the vest. The garment may be finished with wrist length or elbow sleeves. Gingham, percale, chambray, lawn, repp, poplin, and drill are good for this model. This pattern is cut in 4 sizes: 2, 3, 4, and 5 years. Size 4 will require 2¾ yards of 36-inch material.

3075—Child's Dress.. This is a new and attractive model, very nice for gingham, lawn, batiste, nainsook, percale, silk, or poplin. The sleeve may be finished in bishop style or in elbow length, as illustrated. The pattern is cut in 5 sizes: 1, 2, 3, 4, and 5 years. Size 4 requires 2⅜ yards of 36-inch material. Blue or white linen embroidered, or piped with a contrasting color, would be good for this style.

Anti-Freezing Solution.

This is the time of year when it is necessary for the owners of cars to use a great deal of care to avoid frozen radiators. Prof. Person of the Colorado Agricultural College, saw the following anti-freeze solution advocated in one of the standard magazines and tried it. He reports good results.

A solution of water and 3 per cent alcohol and 2 per cent glycerine will freeze at 28 degrees or 4 degrees below the regular water freezing point. A solution of 9 per cent alcohol and 6 per cent glycerine will freeze at 15 degrees; a solution of 24 per cent alcohol and 16 per cent glycerine will freeze at 15 degrees below zero.—Colorado Agricultural College News Notes.

SAFETY--- and Saving!

Safe from carelessly thrown matches—safe from the work of malicious persons—safe from the pranks of children. There's but one way to get this safety—safety that pays for itself.

You, your family and those working about your grounds, need this protection. The Eaton Underground Storage System for gasoline and oil affords a modern and comparatively inexpensive insurance against loss and worry. It's the up-to-date way for the modern car, tractor, and engine owner to store gasoline, oil, etc.

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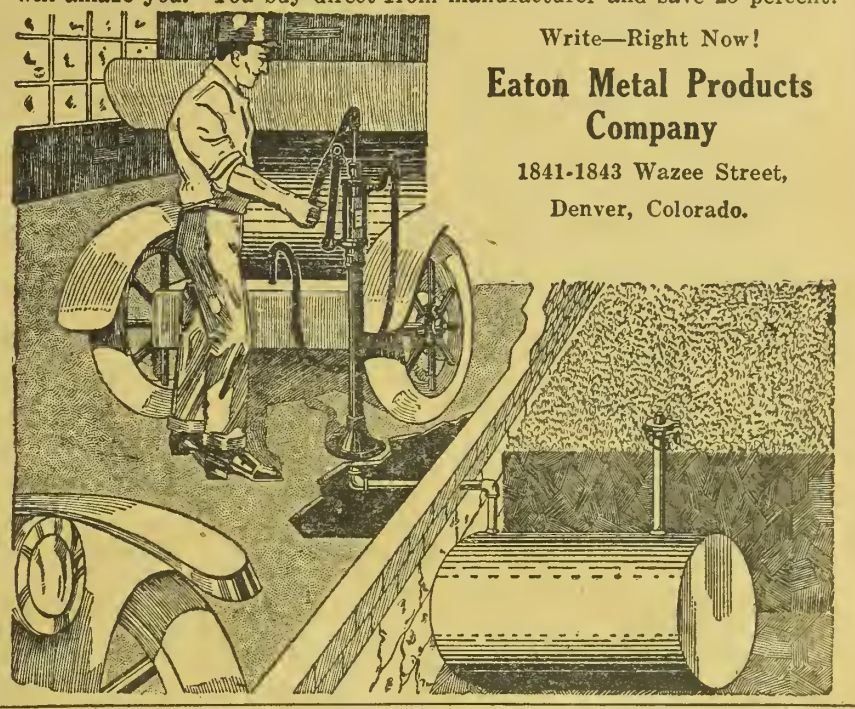

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TRY KI-MOIDS FOR INDIGESTION

Potato Association of America

OBJECTS AND ACCOMPLISHMENTS ARE SET FORTH.

STUART L. SWEET, Chief Colorado Office of Markets.

The Potato Association of America is the organized representative of an industry amounting to over $500,000,000 annually in the United States. It is second in food production only to the cereal crop of this country and ranks sixth in value among America's agricultural crops.

The sixth annual meeting of the association was held recently at Milwaukee, Wis. This organization, while comparatively new, has accomplished much for the potato industry of this country.

Among its important achievements may be included:

First—The advancement of seed plot work undertaken by the Department of Agriculture two years ago at the request of this association, and now being carried on in many of the potato producing sections of this country.

Second—The adoption of the hundredweight as a standard of measure in selling potatoes. This secures a uniform basis of transaction for the entire country and a unit which can be applied accurately in reporting prices and market unit tends to eliminate the unfair methods which prevailed in many sections conditions. This standard of a pound where potatoes were sold by measure, such as the bushel or the peck.

Third—The promulgation by the government of U. S. Potato Grades No. 1 and No. 2. These recognized grades have proved of real value in the marketing and distribution of this great crop by establishing a recognized basis which makes possible a uniform interpretation.

Fourth—The securing of a ruling from the Fedcral Reserve Board permitting federal banks to discount loans on potatoes properly graded and stored in bonded warehouses. This great crop of approximately 360,000,000 bushels per annum, cannot be consumed at one time and some of it must be stored. The growers who do store are enabled by this ruling of the Federal Reserve Board to secure a goodly part of the are placed in storage. This is a ruling value of their potatoes at the time they which has not been taken advantage of to any great extent in the west, but is being used more in the eastern and northern producing districts.

Fifth—The furthering of State Potato Growers' Associations, of which there are now 19 throughout this country, all affiliated with the national association.

Sixth—The furthering of certified seed production in many states.

Seventh—The starting of the potato flour industry which takes care of part of the culls and seconds sorted out through the grading process.

Eighth—The rehabilitating of the potato starch industry, thereby offering the growers a market for much of their cull stock.

With these brief statements of the results accomplished, it can be seen that the Potato Association of America has a definite work to perform, that it is taking active, constructive and definite steps towards the advancement of America's potato industry.

Some of the work before the association is:

First—The development of certified seed work throughout the country and the securing of more uniform requirements for the certification test.

Second—A more efficient and equitable car distribution.

Third—Securing for potato growers and shippers better car equipment, such as refrigerator and ventilated box cars, in order to prevent much of the unnecessary waste that now occurs in the transportation of the potato crop.

Fourth—The control of potato diseases and the furthering of this work through state and government agencies.

Fifth—The development of the potato industry in the different producing sections of this country through annual meetings held from time to time in these sections.

Sixth—The creation of additional state potato growers' associations.

Seventh—The furthering of a magazine, which would be the official organ of the association and acquaint growers, shippers and others interested, with the work and development of the association's affairs, and also the advancement of the industry itself.

Eighth—Securing a more efficient and equitable means of distribution of the crop, better marketing facilities, better containers, thereby effecting less loss in transit and on the markets.

Truly a big program, but one which such an organization, if properly supported by the growers themselves, can accomplish in a large way within the next few years.

The meeting at Milwaukee was important because of the adoption of a new policy by the association, a policy which has an important bearing upon the potato industry of Colorado and the west.

It was unanimously decided that hereafter the annual meetings of this association will be held in different potato producing sections each year. The reason for this and its value is apparent to all. It means that the association will bring into that section the recognized authorities on potato production and distribution so that the growers in that particular section may have the benefit of the work, experience and knowledge of these specialists. It will mean that the association itself and its officers will become acquainted first-hand with the potato problems of that particular district that year. They will learn the different diseases prevalent the methods taken to control them, the storage facilities, the marketing problems, and other important matters

Hardy Alfalfa Clover, Oats

My Alfalfa seed is all fresh, clean and of high germination. All Nebraska upland grown; no bottom land or grown under irrigation, as the latter is worthless unless grown under irrigation again.

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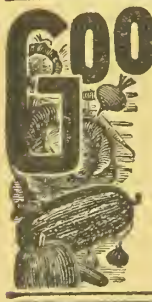

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Its dependable Crawler traction makes the Bates Steel Mule independent of poor footing conditions.

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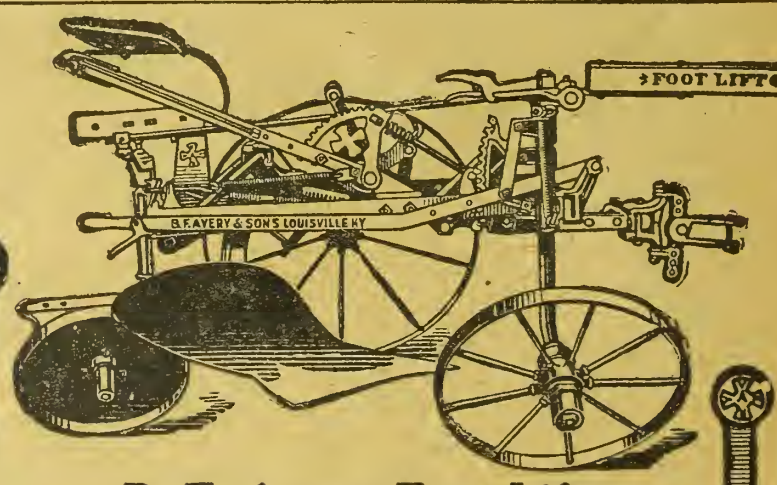

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They can be set so the beams lift independently of the frame or so the frame is leveled and the beams raised at one operation.

Front axle is 1½ inches in diameter with a long bearing in the frame—stronger than on any other foot lift plow. It won't bend or spring in the hardest plowing.

Both levers are on right-hand side.

These plows are fitted with quick detachable shares in which simplicity and convenience are combined with great strength. Shares are changed without removing a bolt or nut and without getting under the plow bottom.

See them at the B. F. Avery dealer's store.

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which are constantly before the potato grower.

Future association meetings will include talks from practical potato growers in the section where the meeting is held. We all want to learn more of the actual work and problems of the men who carry on potato production on a commercial scale.

Through this first-hand knowledge the national association will be in a better position to aid in the solution of these local problems. The following year another potato district will be visited, where another program including these recognized authorities will advise the growers of the work and results of other districts and find out from personal investigation the problems of that particular section.

These meetings in the local producing districts will, of course, be well attended, as they always are by the potato growers of that section. The following year, delegates fully authorized to represent the section where the annual meeting was previously held, will attend the next year's conference.

With greater knowledge of conditions, a larger membership and more funds available in the national treasury, the national association can accomplish more for the potato industry. They are aiming now for a membership of 10,000 at the close of 1920.

Another important point is the adoption of a plan whereby a leading authority or specialist in one particular line, connected with the potato industry, is to be selected as the chairman of the committee with full authority to select his own committee and to accomplish the desired results for the national association during his year of office, or to be held personally responsible for the failure to perform his duty.

Colorado Cattle at The International Stock Show.

Three loads of cattle fed by A. E. MacGregor, Washington, Kan., were purchased by Armour & Company at the recent International Livestock Show. These cattle were all purebreds, one lot being 2-year-old Shorthorns, and two lots being 2-year-old Herefords. The Shorthorn steers had previously won first in the yearling Shorthorn feeder class at the 1919 Western Livestock Show at Denver. They were bred by Weiss Bros., Elizabeth, Colo., and secured by Mr. MacGregor at a purchase price of $20.50 per cwt. Immediately upon receipt of them, he placed them upon feed, bringing them to full feed about June 15, 1919. The average weight of the Shorthorns at the beginning of feed was 820 pounds, and the daily ration consisted of 19 pounds of ground corn, 2 pounds of oilmeal, 2½ pounds of Tarkio molasses, 2 pounds of ground oats and all the alfalfa hay they would eat. In general, they were fed in open yards, but had access to sheds for shelter in bad weather. In the Chicago show, they received second as 2-year-olds in the special Shorthorn classes, weighing an average of 1,420 pounds and bringing $26.50 at public auction.

His two lots of Herefords were particularly interesting, since the lot which won first in the South Central District contained cattle without a previous show record, while his lot that was fifth had been grand champion feeders at the Denver show of last winter. His rations and methods of handling were the same for these as for the Shorthorns, since both of these loads were 2-year-olds. His first prize load of Herefords were bought of Adams & Robert, Plains, Kan., at a purchase price of 17 cents per pound, while the fifth prize load was bought of Russell Bros., La Jara, Colo., at the purchase price of $20.25 per cwt. The average weight of the first load at the beginning of feeding was 732 pounds a head and of the fifth prize load 750 pounds a head. At Chicago the first prize lot weighed 1,375 pounds and brought $25 at public auction, and the second prize lot weighed 1,282 pounds and brought $24.50. The first lot dressed 64.4 per cent; the fifth prize, 63.9 per cent.

Dry Creek Cheese Ranch.

Driving southward from Littleton, Colo., just after crossing the line into Douglas county a sign at the roadside reads:

"This road to the cheese ranch only."

We took that road because the cheese ranch was our destination. About half a mile from the guidepost we reached the end of the road and found ourselves in front of a gate bearing the legend: Big Dry Creek Cheese Ranch, 1876." It

The Big Dry Creek Cheese Ranch, Douglas County, Colo.

was hardly believable that the cheese industry was established at that early date, yet that is the truth.

Back in 1876, the year when Colorado became a state and when the United States celebrated its first century of liberty, John Welte established the Dry Creek Cheese factory. This is in reality a cheese ranch and not a factory, nor yet a cheese farm. The ranch comprises over 3,000 acres and its chief business is the manufacture of cheese from the milk of a herd of high grade Holstein cows. The herd numbers about 100 head and 50 or 60 are being milked at the present time. The entire production is used for the manufacture of cheese which is marketed in Denver and Littleton.

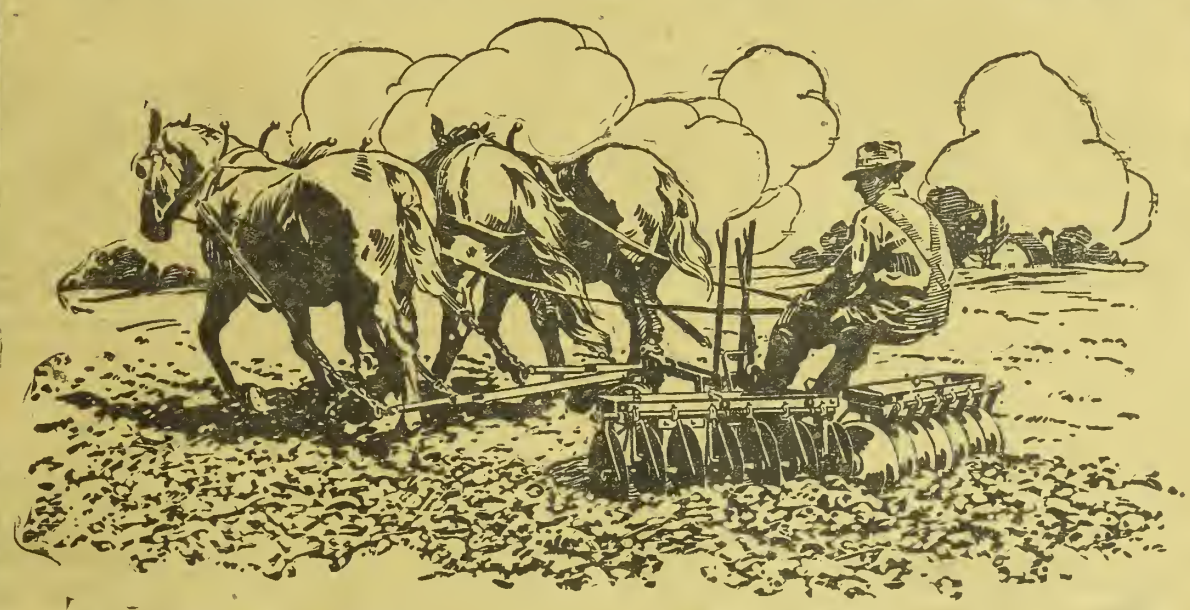
The ranch is now under the management of Phillip Renner, son-in-law of the aged Mr. Welte. The average production is about 100 pounds of cheese a day. The principal kind that is manufactured is the brick cheese, but during the summer months there is also a quantity of Limburger made.

Prairie pasture furnishes ample grazing for the herd during the summer months and the cows are always milked outdoors when the weather permits. After the pasture season is over the principal feeds are alfalfa, bran and cut corn fodder, there being no silo on the place. For many years the business was carried on with ordinary red cows but ten years ago the first Holsteins were purchased and now all of the production comes from high grade animals of that breed. The effort is to keep the business down to a point where Mr. Renner and his family, with little outside help, can take care of the milking and other work incident to this industry. No outside milk is purchased and great care is taken to keep up the quality of the manufactured product, for which there is a ready market at high figures all the year around. Mr. Renner is seldom able to supply all of the demand from high class establishments in Denver for his product.

A drain pipe leads from the cheese press to the hog pens and the whey is used to help make pork. There is also a compact and well equipped slaughtering plant convenient to the hog house, where fresh pork is put up as needed by the family or for a limited market. Economical methods of feeding are followed in caring for the cows and hogs and nothing goes to waste that can be converted into milk or meat.

The above view shows the residence of the Renner family, the cheese plant and cellars being located at the rear. The fuel used in the boiler is "cow chips" and cottonwood—both being products of the ranch, which is independent of outside sources for fuel. The industry is an example of what an energetic family can accomplish in the way of converting the produce of a ranch into manufactured goods on the place.

Results show at Harvest Time

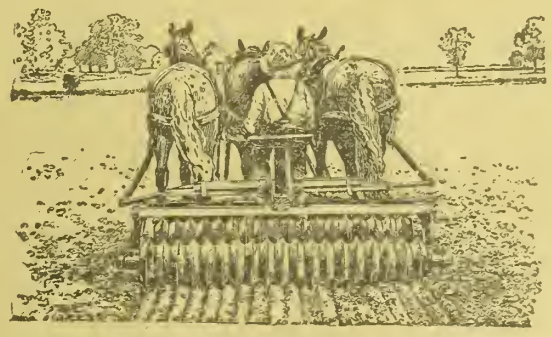


IF your seed bed is not properly prepared, take an inventory of the clods—the rough stuff in the field—and enter every single one of them in your ledger as a liability. They are just like so many pores letting out that precious subsoil moisture. You cannot spare that stored power if you want bumper crops.

International Tillage Tools put your seed bed in prime condition. In this deservedly popular line of implements are **disk harrows, spring- and peg-tooth and combination harrows, culti-packers,** etc. The disk harrow, for instance, slices and destroys the clods until the close-knit covering guards every bit of subsoil moisture, while permitting the absorption of additional supplies from above.

The 1920 International line of implements for laying crop foundation is the most complete we have ever offered. You know your soil. Whatever its needs, we have the type of disk harrow suited to it. If a sandy, loose loam the two-lever type answers every requirement; if hard, stony or trashy ground, the three-lever type with its center-depth regulator insures a firm, compact seed bed. If you use a tractor, see our leverless tractor disk. Whatever your power equipment, we have a size that utilizes it to the best advantage. Ask your dealer to point out to you the exclusive features of each type.

Let us mail you descriptive folders of these tillage implements so that you will know just a bit more about the preparing of Spring seed beds. With every implement goes an alert, responsive and intelligent service. The International dealer will serve you direct.



International Harvester Company of America
(Incorporated)

Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

Cutting Minnesota No. 13 Corn on E. A. Elder's farm, Montezuma County, Colo. The corn grew so tall that the horse pulling the cutter is not visible.

Minnesota No. 13 Tried in Montezuma County.

Eighteen farmers tried out Minnesota No. 13 corn in Montezuma county, Colorado, during the season of 1919. It was planted at altitudes ranging from a little under 6,000 feet to a little over 7,000 feet. This corn was planted on all kinds of soil and conditions of cultivation from nothing following planting, to the best methods known to modern agriculture. Mr. E. H. Kittell planted five acres and stock got in and cleaned off two acres. This was planted on land under the ditch at an altitude of 6,000 feet, but was not irrigated. It was well cultivated and much good seed was saved from it. The seed that he could spare was all spoken for long before the crop was gathered. Mr. Kittell says it is the corn that he has been looking for ever since coming to this country from Nebraska several years ago. He is planning on a much large tract of corn next season and has bought a tractor which has already plowed almost 50 acres to be planted to Minnesota 13 in the spring.

J. N. Withers, another good farmer of the county, in the Summit Ridge section, at an altitude of nearly 7,000 feet, matured the corn in good shape and the county agent had several messes of roasting ears from his field, and he and the family pronounced them worth while. This was planted alongside of a native yellow dent corn, and Mr. Withers thinks that the yellow dent is slightly superior. The depth of grain and closeness of the rows fits the idea of development in the corn improvement practices of our best corn raisers. Mr. Withers raises White Australian for his silo.

Mr. E. A. Elder planted for his silage crop Minnesota 13, and is well pleased. The accompanying cut shows the method in common use here, the sled cutter, pulled by one horse. The boy is on a white horse and the corn is so large and thick that the horse does not show at all. Mr. Elder put so much corn in the silo that he does not have any seed to help supply the demand.

Mr. G. L. Knight planted his whole crop to Minnesota 13, and is saving all the seed that he can guarantee as being of good type, size and germination. Minnesota 13 has come to stay. It has done well under dry land conditions and one field of fallowed land was not cultivated after planting, and some of this made a heavy yield but did not mature enough for seed. This grew at above 7,000 feet altitude.—Subscriber, Cortez, Colorado.

Fort Collins Hog Sale.

The first joint consignment sale of the Larimer-Boulder County Breeder's Associations was held at Fort Collins, December 19, at the close of the Colorado Farmer's Congress. There were 30 Poland Chinas sold, 23 of them sows, at an average of $64.60, and seven boars at an average of $52.85. The top price for this breed was $147.50 for a bred sow.

There were 15 Duroc Jerseys sold, 13 of which were sows, and the average was $108.46. Two boars of this breed averaged $71.25. The top price received for Durocs was $152.50 for a sow.

The following list shows consignors, animals sold and purchase price

POLAND CHINAS.

Consigned by E. H. Allen, Boulder.

A Timm 102935, boar, to J. L. Tinsman, Severance, $35.

Daisy A 245038, sow, to K. J. Brollier, Fort Collins, $42.50.

Daisy B. 245039, sow, to W. A. Martin, Wellington, $40.

Lady B. 245037, sow, to Wise Bros., Wellington, $32.50.

Consigned by J. A. Davidson, Longmont.

Fine Quality, sow, to I. M. Watts, Timnath, $35.

Baldwin Lady, sow, to J. E. Burch, Fort Collins, $40.

Consigned by Great Western Sugar Co., Longmont.

Lou, sow, to W. T. Hall, Severance, $45.

Sugar Pet I, sow, to S. H. Clammer, Fort Collins, $35.

Sugar Pet II, sow, to S. H. Clammer, Fort Collins, $37.50.

Jean, sow, to W. O. Myer, Fort Collins, $30.

Jean II, sow, to W. O. Myer, Fort Collins, $35.

Myrtle, sow, to J. L. Hanna, Wellington, $47.50.

Consigned by R. M. Karnes, Timnath.

Colorado Bob, boar, to S. H. Clammer, $40.

Sow, to J. N. Graham, Mead, $45.

Sow, to I. M. Watts, $52.50.

Consigned by R. G. Maxwell & Son, Fort Collins.

Jumbo Bob 327653, boar, to James Carter, Fort Collins, $50.

Western Queen 699172, to C. J. Mather, Fort Collins, $90.

Liberty Bell 716880, to S. H. Clammer, $80.

Consigned by A. D. McGillvray, Boulder.

Sampson's Model, boar, to I. N. Graham, $75.

Midnight 241628, sow, to William Kiteley, Longmont, $100.

Roberta 241630, sow, to William Kiteley, $107.50.

Pandora 241629, sow, to E. H. Allen, Longmont, $75.

Valley Daisy 241631, sow, to F. L. Roy Toliver, Fort Collins, $97.50.

Consigned by J. W. Reed, Windsor.

B. Hadley Master 313425, boar, to I. M. Watts, $67.50.

Consigned by W. R. Reynolds, Longmont.

Quality Coy, boar, to F. L. Roy Toliver, $47.50.

Merry Lady Look 745766, sow, to C. G. Gawthrop, Mancos, $142.50.

Lady Wonder 747502, sow, to Mark Kiteley, Longmont, $80.

Consigned by F. L. Roy Toliver, Fort Collins.

Maxwell's Minnie 778504, sow, to S. H. Clammer, $60.

Lady Look's Best 714470, sow, to Johnson Bros., Erie $147.50.

Consigned by Colorado Agricultural College.

Boar, to Forrest Johnson, Niwot, $55.

DUROC JERSEYS.

Consigned by Colorado Agricultural College.

Queen Gano Belle 658316, sow, to Cunningham & Hill, Loveland, $90.

Willetla's Belle 703592, sow, to Allyn Tedmon, Greybull, Wyo., $152.50.

Consigned by Burt Hart, Longmont.

Hector 287673, boar, to M. T. Harned, Wellington, $105.

Mae Queen II 608960, sow and litter, to R. H. Sims, Fort Morgan, $127.50.

Farmer Girl, sow, to C. B. Preston, Boulder, $105.

Farmer Girl II, sow, to Fred Kruger, Fort Collins, $147.50.

Hart's Wonder, 815752, sow, to D. C. Harned, Wellington, $67.50.

Longmont Wonder 815754, sow, to M. T. Harned, $60.

Miss Gano King III 821820, sow, to Allyn Tedmon, $100.

Miss Illustrator King III 793348, sow, to Cunningham & Hill, $125.

Miss Illustrator King IV 793350, sow, to M. T. Harned, $107.50.

Consigned by Glen Martin, Boulder.

Model Chief, boar, to Forrest Johnson, $37.50.

Consigned by George E. Morton & Sons, Fort Collins.

Cherokee's Artemis 790404, sow, to Allyn Tedmon, $130.

Triangle Lady II 797310, sow, to Allyn Tedmon, $87.50.

Consigned by H. G. Sitler, Fort Collins.

Red Oak Girl 812534, sow, to Allyn Tedmon, $110.

Young cut and army worms pass the winter hibernating in grass roots of uncultivated land. Watch for them in the early spring.

FREE BURTON'S 1920 SEED BOOK

A WESTERN BOOK FOR WESTERN GROWERS.

THE BIGGEST AND BEST SEED BOOK PUBLISHED IN THE WEST.

WRITE TODAY

A PENNY POSTAL MAY SAVE YOU MANY DOLLARS

THE BURTON SEED CO.

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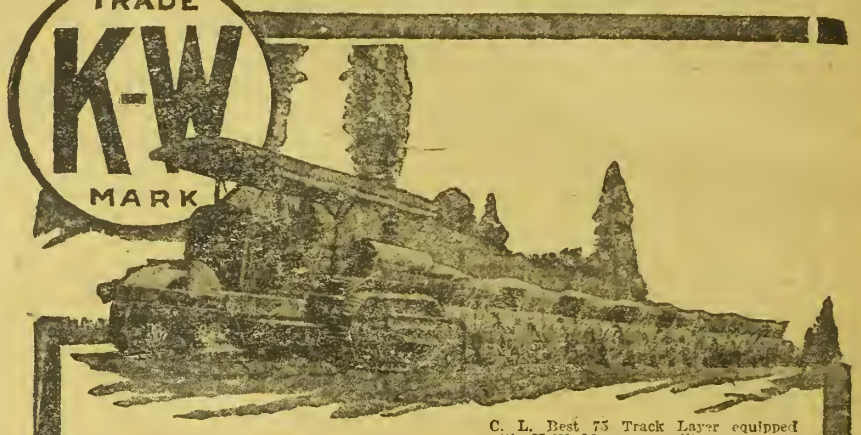
TRADE K-W MARK



C. L. Best 75 Track Layer equipped with K-W Magneto, pulling up grade with 70 tons of rock.

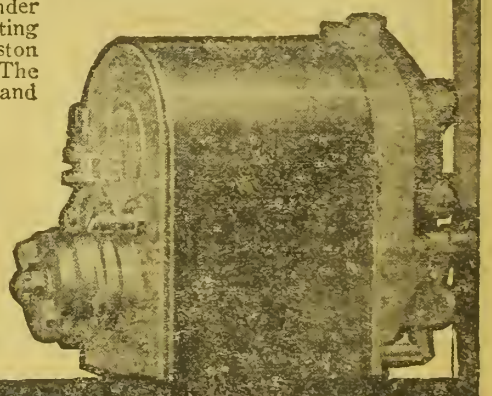
A Sure Spark for the Hard Pull

TO start this dead load of seventy tons and to keep it going steadily up grade requires extraordinary power and an absolutely "sure fire" magneto.

Like most tractors built to give unusual service this "Best 75" has a K-W Magneto.

When a gas engine has a light load and can speed up it is easy to generate the spark. The engine will even go in spite of an occasional miss or weak spark.

But on this job as on most tractor work the pull is slow and heavy. *Every cylinder* must fire *every time.* Each spark must explode all the gas in the cylinder completely and quickly putting the full punch behind the piston at just the proper instant. The K-W Magneto *does* this and *continues* to do it.



Write for booklet showing the simple construction of the K-W Magneto explaining how it makes your tractor do more work on less fuel.

THE K-W IGNITION CO. CLEVELAND, OHIO, U.S.A.

2809 Chester Avenue

K-W MARK High Tension MAGNETOS Fire Any Kind of Fuel and Get Maximum Power Out of Every Drop Used

Allwork KEROSENE TRACTORS

Write for illustrated catalog

COLORADO TRACTOR & IMPLEMENT CO.

DENVER, COLORADO

Distributors for Colorado, Wyoming and New Mexico.

Wonderful Power Built Into This Light Tractor

For All Kinds of Field and Belt Work

HERE is a lightweight tractor with a big four-cylinder 5 x 6 motor which gives you a substantial margin of reserve power for pulling three plows easily through the toughest kind of soil. The *Allwork* also furnishes sufficient belt power for a 24-in. separator, 16-in. ensilage cutter, etc.

Guaranteed to Burn Kerosene Successfully

This reliable tractor is a safe investment which will pay you big returns, and its excellent past performance insures satisfactory service and long life. During the six years the *Allwork* Tractor has been in actual use on thousands of farms in all parts of the country, it has retained the same sturdy design, while numerous improvements and refinements have been added from time to time, most of them being prompted by the farmers using this tractor.

ELECTRIC WHEEL CO.

Box 72A Quincy, Illinois

Neal's Combination Sale.

The third sale of purebred cattle in Saguache county distributed 41 head over the San Luis Valley. Twenty-six of these were Herefords and 16 Shorthorns. Most of these cattle sold were the offerings of the J. H. Neal herds of Shorthorns and Herefords; but 13 head of whitefaces were offered by the Dolan-Tipton Cattle Co. of Crestone. The average price for the Shorthorns was $241, while that of the Herefords was $230. This is considerably less than this stuff should have sold for. It is certain that the same class of stock at the Stock Show would have sold for double the money. The Shorthorns were straight Scotch and Scotch-topped stuff, some of the females of which were bred to Neal's grand champion bull Count Valentine. The Herefords offered by Neal were mainly of Bonnie Brae blood, several individuals of which carried as good a pedigree as can be found in America. The sale was topped by Bonnie 5th 725088, a coming 2-year-old of excellent breeding and pleasing conformation. He was bought by Ed Sherlock of Crestone. The Shorthorns were topped by a roan heifer calf, deep bodied and thick meated. She sold to J. K. Holmes of Center for $575. The sale was handled by Auctioneers A. C. Newmyer of Center and Col. Burgess of Oklahoma. Andy Campion of Denver bought some stock and gave a short talk on Hereford breeding. The sale was attended by about 200 people from all parts of the Valley.

J. H. Neal's Shorthorn Offerings.

Rosemary 682938, to Chas. Chown, Center, $320.
Grant 2nd 682926, to A. J. Hack, Center, $185.
Royal Goods 682932, to Eugene Williams, Saguache, $270.
King James 682929, to R. E. Rominger, Saguache, $200.
Golden 7th 682925, to John Copeman, Mirage, $105.
Roxie 3rd 684267, to Chas. Chown, Center, $340.
Grant 3rd 682927, to A. V. Shippey, Villa Grove, $200.
Avis N. 727486, to Newmyer Bros., Center, $135.
Major N. 727485, to L. H. Hall, Villa Grove, $205.
Miss Bly 727487, to F. H. Means, Saguache, $140.
Miss Clara 745658, to Newmyer Bros., Center, $140.
Roan Beauty 2d 819167, to J. K. Holmes, Center, $575.
Golden 14th 819157, to A. V. Shippey, Villa Grove, $190.
Maid 2nd 699556, to Chas. Chown, Center, $300.
Roxie 4th 684268, to Newmyer Bros., Center, $175.
Lady Newville 699555, to J. K. Holmes, Center, $375.

J. H. Neal's Hereford Offerings.

Bonnie 5th 725088, to Ed Sherlock, Crestone, $625.
Bonnie 6th 725089, to Jim Braden, La Jara, $400.
Bonnie 7th 725090, to Jim Braden, La Jara, $230.
Bonnie 8th 725091, to John Schmidt, Center, $290.
Floradora 674778, to Mr. Chenowith, Del Norte, $220.
Lady Empress 674779, to Joe Sheldon, Monte Vista, $250.
Dorabell 674777, Mr. Chenowith, Del Norte, $180.
No. 6, to Ed Sherlock, Crestone, $275.
No. 7, to Jim Braden, La Jara, $235.
No. 16, to Neal Jones, Center, $185.
No. 8, to A. P. Flynn, Center, $230.
No. 11, to Andy Campion, Denver, $175.

Dolan-Tipton Cattle Co. Offerings.

Sox 772685, to Andy Campion, Denver, $180.
Romper 703654, to Harry Hart, Monte Vista, $230.
Alex 699316, to A. P. Flynn, Center, $210.
Sioux 703660, to W. Shellabarger, Moffat, $210.
Baca Grant Major 699317, to Ed Sherlock, Crestone, $250.
Crestone Lad 703659, to W. Shellabarger, Moffat, $200.
Baca Fairfax 772679, to Harry Hart, Monte Vista, $150.
Crestone Fairfax 3rd 772681, to W. Shellabarger, Moffat, $210.
Crestone Fairfax 2d, to Hardy Oliver, Hooper, $170.
Crestone Fairfax 1st, to W. Shellabarger, Moffat, $150.
Lucy Mae 703658, to Mr. Chenowith, Del Norte, $305.
Starlight 14th, to Mr. Chenowith, Del Norte, $195.
Cleopatra, to Mr. Chenowith, Del Norte, $195.

About That Water Shortage.

Dear Editor:

In your remarks of December 20th, relative to Prof. Kezer's article on "Unexpected Water Shortage," you sum up as a result of his article that "the weather is to blame." Pope says, "Where grows it, where grows it not—if vain our toil, We ought to blame the culture, (my notation: or lack of it) not the soil." It seems to me that probably both the weather and lack of cultivation were to blame, if I may use this latter term to convey my meaning in this article.

Irrigation and so-called "Dry Farming" are as closely allied as the colored people are to the whites in the South—so near to one another, and yet apparently so far apart. In spite of the advantages the irrigator usually has an abundance of water (sometimes), most of them fail to use some of the up-to-date methods of conservation of moisture which the dry farmer uses. The dry farmer knows (or should know) that after a heavy rain, if his judgment tells him he should do so, if he cultivates his soil by irritatating the surface, or even his growing crops, that he will get a dry soil mulch, which will materially help, if not altogether prevent, loss of moisture by evaporation; furthermore, put his ground in better condition to receive and retain more moisture when it comes.

This spring there was (unless reserved water for certain crops was used), a shortage of water to irrigate some sections of alfalfa—i. e., not enough to irrigate the fields properly. if the crops (alfalfa, or otherwise) had been properly cultivated as soon as soil was dry enough after an irrigation, there would have been more moisture conserved for the growing crop, than there would be if not cultivated. It will probably be remarked by some that to cultivate growing crops will hurt or ruin same under certain conditions. That may be true if not done with proper tools and judgment used as to when. If an alfalfa cultivator or spring tooth harrow is used on alfalfa the detriment to the plants by the cultivator if any, is more than offset by the saving of moisture, which is the life fluid helping to make the crops. Grain, too, can be cultivated with a weeder when it is knee high and still not hurt the growing crop.

It seems strange that the irrigator, recognizing that good irrigating is both hard work and expensive, does not recognize that after irrigating the loss of moisture through lack of cultivation is very high and that by holding what water is in the soil through cultivation he saves himself or deputy hard work and time, which is money. In some instances, there is a loss of 25 to 40 per cent or more of moisture after irrigating. However, let the percentage be what it may, there can be no denial that the loss by evaporation (depending on type and condition of soil, time of year, wind and sun), is very great. Why not prevent it? Furthermore, the dry farmer knows that having a big percentage of organic matter to become humus in his soil, also helps the moisture-holding qualities of the land. I believe it will pay the irrigator to give this subject his attention, because he will need less water to irrigate, as soils with plenty of humus in them will hold much more moisture than those without it, besides improving the texture of the soils, making plowing and cultivation much easier.

It is all very well to blame the weather, but there are certain precautions all farmers should take. The unexpected happened, and will happen again, so why not be better prepared to fight the drouth by knowing what to do, when, and how to do it?

DR. VERNON T. COOKE.

What the Farmers Talked About at Fort Collins.

(Continued from Page 6.)

ridge, Holly, and Prof. George E. Morton.

Officers elected by the congress were as follows:

President—N. C. Dougherty, Greeley.

First vice president—J. M. Rodgers, Wellington.

Second vice president—M. G. Lightner, Monte Vista.

Secretary-treasurer—H. T. French, Fort Collins.

District Representatives.

Denver district—John Grattan of Broomfield.

Plains district—J. G. Evans, Wray.

Northern district—R. M. Haythorne, Greeley.

Western district—L. M. Rodgers, Grand Junction.

Southwestern district—David Halls, Mancos.

San Luis Valley district—H. A. Mathias, Monte Vista.

Northwestern district—Geo. W. Merrill, Steamboat Springs.

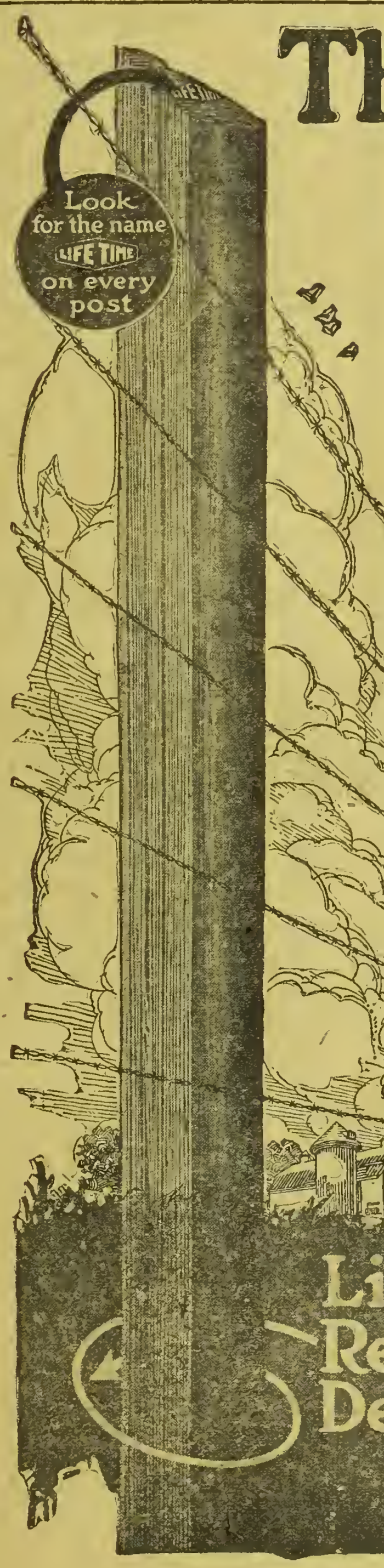
Arkansas Valley—B. A. Shelton, La Junta.

New Plains district—To be filled by the secretary.

Community Meat Curing.

The curing of meat for home consumption is an art that is being neglected, regardless of the faet that good home manufactured meat products are in a class by themselves. Everyone has a memory of the unequaled flavor of the home-made sausage, sugar-cured hams, and bacon. Many of the men are still here who used to put up these excellent flavored meats. An opportunity is open to them to do more of this work, and revive the interest for the home-cured goods. Now is the time to begin. People living in cities would welcome the opportunity of getting these products and the demand would soon become large enough to warrant the effort and expense of the undertaking. The equipment needed would be a handy place for killing and dressing, a work room where the animals can be worked up and a place for smoking the cured meat. Kill and cure hogs for individuals at a certain price per animal. It is not necessary to enter into competition with packer products, but keep busy on a reputation at home, and the trade is bound to increase as ones reputation is established.—H. A. L.

Let Western Farm Life Service Bureau help solve your farming problems. All questions promptly answered.



The Real Test Is In the Ground

When they're in, they're solid. In to stay put. It's not the first day, nor the first month, nor the first year that counts. It's the years that follow. Many years after the day you put up your sightly "Lifetime" fence, you'll have it just as solid as ever.

"Lifetime" Posts are axe-split which adds greatly to their neat appearance, strength and weather resistance. They are split from the round log of Western Red Cedar trees, thus giving a greater percentage of heart-wood than any other post. According to U. S. Government test, they have "81% the breaking strength of white oak."

Forest Service Bulletin No. 95 says: "It was one of the first woods cut for fences and its long resistance to decay is shown by the fact that some of the fences built nearly *half a century ago* were *doing* service until very recently."

Lifetime *Red Cedar* Fence Posts

Ask your lumber dealer for "Lifetime" trade-marked, inspected Cedar Posts. If he can't supply you, write us—use coupon below. We will send you "Pointers on Posts"—a book containing valuable information and tests on all kinds of posts. Mail the coupon or write today.

LIFETIME POST ASSOCIATION

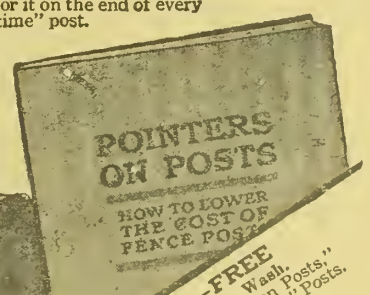
World's largest manufacturers of Axe-split Western Red Cedar Fence Posts

709 Peyton Building Spokane, Wash.

LIFE TIME TRADE MARK

This is the "Lifetime" trade-mark—it means *inspected* posts from first-class cedar. Look for it on the end of every genuine "Lifetime" post.

Lifetime Red Cedar Defies Rot



"POINTERS ON POSTS"—FREE

Lifetime Post Assn., 709 Peyton Bldg., Spokane, Wash.
Gentlemen: Send me your booklet "Pointers on Posts," and full information on how I can obtain "Lifetime" Posts.

Name_____ Address_____

Dealer's Name_____

Address_____

Profitable Farm Poultry

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, WESTERN FARM LIFE, Denver, Colorado.

Mrs. George E. Stewart, Aroya, Colo., and her flock of Barred Rocks.

These Farm Hens Did Well.

Here is what Mr. Vaplon said on the poultry page several months ago: "Can you beat it? One thousand eggs in August from 60 hens; and city hens at that. That's going some, and if our country hens would strike that gait the past season's drouth wouldn't seem so bad. But this record of the city hens made me wonder why everybody's hens don't do better during late summer. We don't claim to have anything wonderful in our flock and certainly don't give them much attention, but in August they averaged thirteen and one-sixth eggs; the September average was around nine or ten."

Mrs. George E. Stewart wrote us some time ago that she could and did beat it, with a flock of farm hens. Read her letter:

"Can you beat it? Yes, and here is my record for the last three months. I have a flock of 39 barred Plymouth Rock hens. Their feed has been principally corn with bran in the morning and a little milk. They are year-old hens. In August their average was 13¼ eggs per hen; September, 11¾ eggs, and October 9 1-3 eggs per hen. I have a flock of 60 pullets that I am in hopes will bring me high-priced eggs this winter. My hens are moulting heavily now.—Mrs. George E. Stewart, Aroyo, Colo.

Poultry Culling Demonstration.

A poultry flock-culling demonstration was recently held at E. W. Weckel's ranch near Fruita, Colo. Mr. Weckel is the Farm Bureau executive committeeman on "Poultry Improvement," and with his farm flock, which averages 250 hens throughout the year, he was able to show the profit that is to be derived from culling out non-producers, and also to give some valuable points in practical poultry management. His gross income from eggs produced by these 250 hens for the past year amounted to approximately $2,000.

Mr. Weckel demonstrated the method of culling out non-layers. emphasizing the different points that are to be taken into consideration. To make every point clear, a hen that was not laying was passed around for examination and the characteristics showing that she was not laying, made perfectly clear to every one. Following this, a hen that was just in the stage of beginning to lay was passed through the crowd and the differences between her and the first one pointed out. Next, a hen that was laying steadily was passed for inspection, and the contrasting points of the three were brought out so vividly that none failed to grasp them.

The demonstration was planned and carried out entirely by the Farm Bureau representative and the attendance was close to one hundred, with representatives from all parts of the county. —L. P. McCann, County Agriculturist, Mesa county, Colorado.

An Idaho Poultry Bulletin.

"Poultry Husbandry in Idaho," a 16-page booklet by Pren Moore, poultry husbandman of the extension division of the University of Idaho, has just been issued by the extension division. This bulletin, the issuance of which has been in prospect for a considerable time, is in much demand among the farm bureaus of the state, on account of the poultry work being carried on in practically every county.

"Climate and Soil," "Secrets of Marketing," "Fowls, Turkeys, Geese, Ducks" "Breeds and Breeding," "Feeding," "Housing," "Judging for Egg Production," and "Diseases," are the chapter headings. There also is a section strongly urging farmers to keep financial records of their poultry production, so that they may not underestimate its profitableness.

"Poultry raising is a profitable business for Idaho farmers, as a part of their diversified farming," says the bulletin. "With due attention to breeding, feeding, housing and care, it will yield handsome returns on the time and capital invested. Idaho produces probably not more than 40 per cent of the eggs and fowls consumed within the state, and there are not to exceed 12 states in the union that more than supply their own market. There is, therefore, plenty of opportunity for great increase of production. The Idaho climate is ideal for poultry raising, the soil conditions are good, the feed supply is of the best and building material is abundant."

Blood Will Tell.

A pen of 12 hens at the Oregon Agricultural college recently set a new world's trap nest record in egg production. Each hen laid more than 300 eggs in a year's time. One of the hens in the pen laid 330 and two others 323 eggs each during the period. All of these hens, according to Prof. James S. Dryden, head of the Poultry Division of the college, are of the same strain as Lady McDuff, the first hen to produce over 300 eggs in a year. The test goes to show that it is wise to select hens from strains that are known to be good layers.

Turkey Probably Has Roup.

The disease of turkey is probably what is known in this country as roup. It more commonly affects chickens, but the turkey is not immune. It is now quite generally believed that Avian diphtheria, chicken pox, and roup, are one and the same disease. Since it is liable to spread among your poultry, especially among the turkeys, it will be better to destroy the sick one, then clean and disinfect the coops, yards, etc. Antiseptics in the drinking water are of doubtful value. This might possibly be a case of suppuration of the infraorbital cells and not caused by the roup organism, in which case an entirely different treatment is indicated. The tumors below the eyes should be opened and the cavities thoroughly cleansed. Other treatment is indicated according to conditions. However, the disease is probably roup and effort should be made to prevent other birds becoming affected.—G. H. G.

Cockerel or Old Bird?

Would you advise using eggs for hatching from April hatched pullets? If so, would you advise breeding to a cockerel or to an older bird? I have the R. I. Reds.—E. D. H., Pueblo County, Colo.

I would select my breeding fowls from among the most vigorous, regardless of age. If the pullets are big-boned, active and have always been

INCOME TAX RETURNS

Prepared for Individuals and Corporations and Partnerships

for submission to Revenue Collector, by a former Revenue Examiner.

The proper classification for your several sources of income and the correct distribution of your allowable deductions has a material bearing on a true determination of your tax liability. Rates reasonable.

J. P. FARNAN,
1010 16th St. Tel. Champa 2900
Denver, Colo.

62 BREEDS PROFITABLE Pure-Bred Chickens, Geese, Ducks, Turkeys. Hardy Fowls, Eggs and Incubators at lowest prices. *Pioneer Poultry Farm.* Valuable poultry book and catalog FREE. F. A. NEUBERT, Box 391, Mankato, Minn.

Poultry Book Latest and best yet: 140 pages. 215 beautiful pictures, hatching, rearing, feeding and disease information. Describes busy Poultry Farm handling 53 pure-bred varieties and BABY CHICKS Tells how to choose fowls, eggs, incubators, sprouters. Mailed for 10 cents. Berry's Poultry Farm, Box 66, Clarinda, Iowa

PLANS for Poultry Houses
ALL STYLES, 150 ILLUSTRATIONS. SEND 10 CENTS. INLAND POULTRY JOURNAL, Dep. 42, Indianapolis, Ind.

Chickens Sick?—Use Germozone
Roup, colds, bowel troubles, sore head, limber neck, etc. At dealers or postpaid 75 cts. with 5 book Poultry Library. GEO. H. LEE CO., Dept. F-28 OMAHA, NEB

healthy, they will give you good chicks. If your cocks have brought good chicks, by all means keep them; if the cockerels show better bone and vigor than the old bird, use them. The snappy, active, fighting males are the ones to keep, regardless of age.—W. E. V.

Power to the Pullet

GORDON KENT

During December I had opportunity to talk with scores of city poultry-keepers and inspect their flocks. I listened to radiant and joyful accounts of what hens are doing and to doleful dirges of discouragement as to what they were not doing. The small flock is the busy one.

One lady has sixteen pullets and is getting a dozen eggs a day. Another has five and is getting over twenty eggs a week. No one is getting eggs from hens in overcrowded quarters. Very few eggs are being laid by hens in their second year or older. Pullets that are over-fat are in a happy frame of mind but are not laying. No roosters are laying, why do people keep them? No one is getting eggs on a "grain-only" ration.

There are plenty of careful poultry keepers that are not getting eggs. There are no careless ones that are. Comparison of the flocks that are doing well shows that while the care taken and rations given differ in details there is a broad agreement.

First there is some one who "fusses" with them. Generally the lady of the house.

Second, they have comfortable quarters. There is usually something not according to Hoyle about the henhouse; it is scarcely ever above criticism, but it is not too draughty, nor too close, nor too crowded. Scientific perfection is not reached, but it is near enough to the pullet's idea of home comfort so that she lays.

Third, they are alike in having a ration that is not extremely onesided. Nearly every one that is finding seven- and eight-cent eggs in the nests is feeding a warm mash mornings. Here again the ration is often not above reproach. Some are feeding bran and beef scrap and ground bone. Some are feeding a commercial mash mixed approximately according to approved formulae. All are feeding kitchen waste.

It is remarkable that while many are feeding too much heating grain or carbohydrates, no one is feeding too much protein, as far as I learned. With mixed grain slightly over four cents a pound and egg mash of similar grade at three and a half cents a pound, it is obvious that a balanced ration costs less than a lop-sided, fattening one.

Better results at less cost ought certainly to be an unanswerable argument for improved methods of feeding.

Now for the troubles of the discouraged. I have found examples of nearly every crime that can be committed on a flock of chickens. Of all those who wanted to sell their chickens who were going out of the business who declared there was no money in chickens, etc., etc., there was only one who kept a record of income and expenses.

This is significant. Many who were grumbling or ready to quit did not really know whether their poultry had treated them right or not. In the fall of the year with grain at four cents a pound and the flock moulting, it is easy to say the hens are an expense. Our memories are short. Human gratitude may be readily eclipsed by a few bills from the feed store. But there is no danger that the man who keeps an accurate record will do his hens an injustice. What he knows he KNOWS.

The case referred to above where the record was kept and the hens shown up as slackers is interesting. The quarters were comfortable, a good ration of mixed grains and mash was fed. The birds were gentle and apparently in good health. The feed bill from January to October was $216.00 and the value of the eggs eaten and sold was $160.00.

The flock was from fancy exhibition stock, bred for feathers. Laying was not in their line. Over-crowding was frequent. Few of the people I met had any idea of how many birds they really had room for. A six by ten house that was just right for a dozen hens held nearly forty. There was no provision for ventilation. The warm, steamy atmosphere was most enervating. The floor was deep in dry dust. Such a house defeats its own end.

Some time ago I said in Western Farm Life that one should keep nothing but pullets, disposing of hens at the end of their first period of laying. My recent investigations have confirmed me in the wisdom of this. I received many criticisms subsequent to the publication of that article But the people who are lighthearted right now are the ones who have pullets. Some people think a hen lays best in her second year. Rubbish! Let them ask someone who knows. Our experiment stations show by actual records that the pullet lays 120 eggs a year, the hen 90. Why fool with hens when you can keep pullets with the same feed, same room and same labor?

Bernard Buster, Boulder County Corn Club Champion.

Meet Bernard Buster.

When Bernard Buster won the grand championship at the Boulder county corn show in December, the editor wrote him a letter asking for his photograph, because other young people engaged in corn club work would be eager to see what type of boy it was that could produce and select a ten-ear exhibit of Minnesota No. 13 that was better and truer to type than the exhibits not only of all other corn club boys in Boulder county, but beat the adult growers as well. A full account of the young man's achievement appeared in the January 1 issue of Western Farm Life, but the photograph was not finished in time to have an illustration made. Here it is now, with the letter of Bernard Buster who, you will agree, is just as handy at writing a business letter as he is at growing corn:

"I wish to thank you for your kind letter of congratulation and your kind interest in my corn club work. I would have written you sooner, but had no photograph of myself of recent date, so had some taken and was waiting for them. Enclosed you will find one.

"Mother and Dad join with me in our thanks to you."—Bernard Buster.

Advertising Advertising

This is an advertisement. Not a very long one, to be sure, but an advertisement.

It has a most unusual purpose---to advertise advertising. The message is this:

Don't miss the advertisements.

They make good reading just from the news and educational standpoint alone.

But more than that:

Advertisements keep you in touch with the world' progress.

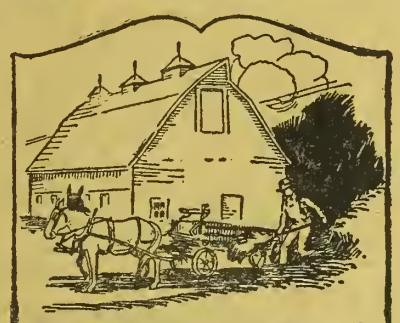
They point the path to comforts that were unknown in the old days.
They help you to save.

They protect you from fraud.

Don't miss the advertisements.

They are guide-posts to better buying..

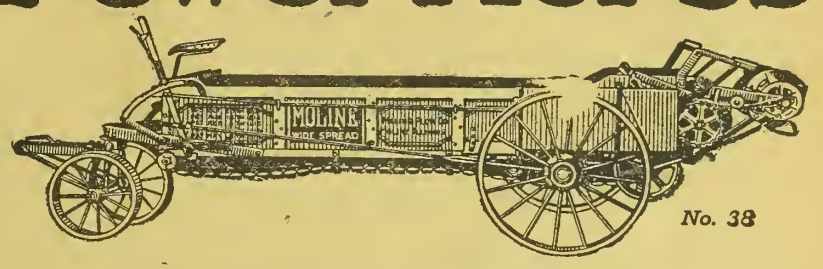
More Dollars From Fewer Acres



The Moline line of Wide Spread Manure Spreaders includes three styles, each particularly well adapted for the work for which it is intended. Moline Wide Spreader No. 38 is built with 38-inch beater for use with two horses. It is a very handy machine and one that can be handled conveniently in tight places.

Where a larger machine is desired there is the Moline No. 50 Spreader built with 50-inch beater and fitted with three-horse eveners. Small farmers and truck gardeners will find the third style very satisfactory. This is known as the Moline Wagon Box Spreader and is built in standard 38-inch width for use with two horses.

No. 50



No. 38

Why be content with meager profits when you may have more? Why stand by and let production costs crowd the profit out of farming? Use a Moline Manure Spreader to increase the fertility of your land and the greater yield will mean "More Dollars From Fewer Acres" without any increase in production costs.

MOLINE
WIDE SPREAD MANURE SPREADERS

Lowdown, light running, and spread the manure, thoroughly pulverized, over a wide spread. Excellent work is assured through the use of a second beater which cuts and tears the manure, casting it well to each side. High grade materials, expert workmanship and the most modern design combine to make Moline Wide Spread Manure Spreaders the most satisfactory machines to use in building up the soil.

Now is the time to see your Moline Dealer about getting a Moline Spreader or write us for full information.

Moline Plow Co., Moline, Ill.

Nearest Branches at Denver and Salt Lake City.

The Moline Line of Implements
Plows (steel and chilled)
Harrows
Planters
Cultivators
Grain Drills
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Hay Rakes
Hay Loaders
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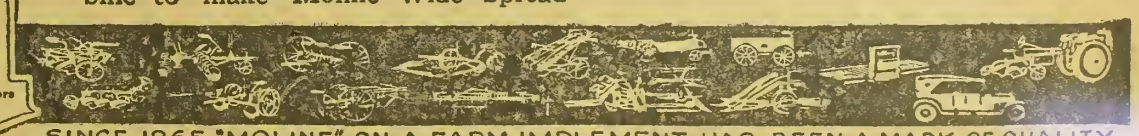
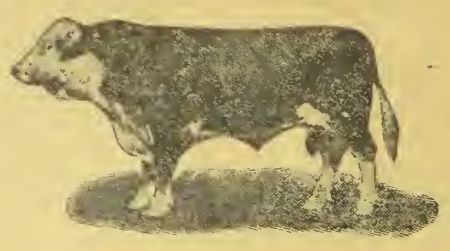
Corn Binders
Pitless Scales
Spreaders
Wagons
Moline-Universal Tractors
Stephens Salient Six Automobiles



SINCE 1865 "MOLINE" ON A FARM IMPLEMENT HAS BEEN A MARK OF QUALITY



PAVE THE WAY for a SUCCESSFUL PUBLIC SALE

The most successful auction sales are held by breeders who have built up a reputation for themselves and their herds.

Such a reputation cannot be built in a month or a year. It takes years of persistent advertising and years of square dealing. The careers of most successful breeders and advertisers have commenced in a small way. Usually the herd was small, the advertising expenditures were proportionately small.

The best advice to give the beginner is to start advertising and to keep everlastingly at it. The breeder should not take out one big advertisement and then quit. He should decide on the amount which he thinks will be wise to spend the coming year and then outline a schedule or plan so that he can keep constantly before a certain class of prospects the coming twelve months.

It was with the idea of providing breeders with just such a plan, that the two-sized breeders' cards were adopted by Western Farm Life. The small sized card provides the breeder with the means of getting before Western Farm Life's 50,000 subscribers, each issue, for one year, at an annual cost of only $54. The large card which provides sufficient space for a half tone cut to be used, can be carried each issue at an annual cost of only $102.00.

The use of a breeders' card will give you an opportunity to build up a reputation for your herd which will enable you to find a steady market for your stock and to provide a wide acquaintance which will enable you to hold a public auction sale successfully one or two times a year.

If you are just beginning and only have a few purebred animals to sell annually, now is the time to start in on some regular and systematic advertising. A breeders' card in Western Farm Life is the best sort of profitable publicity that can be secured. If you have gotten quite well established as a breeder and the stock which you have ready to market annually is reaching such numbers as to make it an effort to dispose of the animals at private sale you should use a large breeders' card regularly in Western Farm Life to assist in making private sales and also to pave the way for a public sale once or twice a year.

We have a little folder that gives full information regarding the circulation of Western Farm Life in each county, the cost of advertising, the cost of livestock cuts and other valuable information. We will be pleased to send this to breeders upon request. Address Breeders' Department,

WESTERN FARM LIFE

1518 Court Place
DENVER, COLORADO

Out Among the Breeders

F. M. LOCKWOOD, Fieldman

Ayrshires are very scarce in northern Colorado, but I viewed some nice appearing registered animals of this breed owned by A. D. Bashor, six miles northeast of Boulder. They won all the premiums last year at the Boulder dairy show, including a silver cup for best dairy cow.

I next visited the up-to-date dairy and Holstein breeding ranch two miles west of Niwot, owned by N. Anderson, who introduced the first purebreds in this section. While he has many high grades, he has nine registered cows and a young bull. Outstanding is his great herd bull, Sir Ormsby Skylark Pauline, full brother to the world famous milker, Duchess Skylark, whose record was 1,506 pounds of butter. He has three purebred heifers. Two of his are Wisconsin bred cows. Eight years ago Mr. Anderson bought the nucleus of his herd from Cleveland, Ohio. He is secretary of the Boulder Cow Testing association.

The president of the Niwot bank, N. M. Henry, is one of the few and oldest breeders of Red Polled cattle in the west. He began in 1889, only 13 years after the breed was brought in from Iowa. One mile south of Niwot on his ranch are ten head of purebreds. Up to 1917 he won many premiums with his cattle but has not exhibited since.

E. L. Montgomery of Longmont, is a prominent livestock man and is backing the Hereford breed. He has recently purchased the Ludlow ranch on the Little Thompson, northwest of Longmont on which he has a big herd of Herefords. Eight head are registered.

I found an up-to-date dairy and a thriving breeding farm two miles northeast of Longmont. Here are sixteen cows, seven heifers, nine yearlings, eight bull calves and two fancy herd bulls. All purebred Holsteins and owned by O. J. Stephens. His stock is Michigan bred. He has 70 head of classy Duroc Jersey hogs, 50 of pigs and three boars. His leading herd boar won first prize at both Wisconsin and Michigan State fairs.

Here is probably the finest and most unique hog barn in the west. It is built of tile wall and cement floors. The roof is ornamented with the figure of a boar and other decorative features.

Four miles northwest of Longmont a new breeder of Poland China hogs, H. A. Bennett, has four purebred sows for a start.

I next visited the breeding pens of W. R. Reynolds, who began breeding Poland China hogs only one year ago. But now he has 81 fine purebred animals, kept in well-built sheds and pens, most of his stock was purchased from the Agricultural college. One sow won third prize at the National Western Stock show 1919. Mr. Reynolds is enthusiastic and I believe he will make a name for his breeding farm.

"Crossing" is the name of Matt McCaslin's up-to-date breeding ranch, located on the St. Vrain, five miles west of Longmont. He has been there since 1882. I saw 60 great looking fat purebred Herefords, including two bulls and 20 calves. A great Beau Aster 474620, full brother of the Fulscher & Kepler bull of the same name. King Editor is a fine Anxiety two-year-old bull in this herd.

Another herd of about 50 purebred Red Polled cattle, bred by W. A. Woods, five miles west of Longmont, shows the variety of stock in this locality. Mr. Woods has eight young bulls and two registered bulls at the head.

The Poland China registered stock owned by the Great Western Sugar farm, half a mile east of Longmont, are the largest boned and heaviest I have seen. The sows are nearly perfect in build and have wonderful size. There are 200 head kept in "A" shaped pens with convenient runways and feeding troughs. "Gladiator" is the herd boar.

The biggest feeder of Herefords, high-grade and purebred, in this section is C. W. Pace. He has 600 head on five ranches. His policy is to continually uniform his herd by keeping only purebred bulls and feeding and selling the poorly marked animals. His home is in Longmont.

Because of a snowstorm I was unable to view the Shorthorns and Duroc hogs bred and owned by W. A. Dickens, one mile south of Longmont. However, I learned that he has 40 registered Shorthorns headed by a fancy bred bull, a Scotch roan of the best breeding, Types King. He has about 50 purebred Duroc hogs and young pigs on his breeding ranch. Herd boar is son of Crimson Gano Jr.

Leo Johnston's place is four miles south of Longmont. His hobby is Holsteins. Mr. Johnson brought in from Iowa a Colantha Johanna Lad herd bull. He has two young bulls. One registered cow is a granddaughter of King of the Pontiacs. Another cow has recently produced 83 pounds of milk per day.

I next stopped to see the N. E. Lewis stock south of Longmont. Here are 60 purebred Poland China hogs and a nice looking registered boar. Mr. Lewis also fancies Herefords. In this herd are six purebreds.

The next ranch south of Lewis is owned by W. P. Forsyth. For a starter he has a good bull and four cows, all purebred Holsteins. He has a dairy herd of high grade milkers.

Burt Hart, four miles south of Longmont, on the Forsyth homestead, breeds Duroc Jersey hogs and Shorthorn cattle. He has 40 head of the former of the Orion Cherry King, Critic and Model breeding. For farrowing purposes he has a warm, well ventilated "A"-shaped house of his own invention and which he has exhibited at fairs and hog shows. There are nine Shorthorn cows, several of them are bred to Warnock's Model Type.

LIVESTOCK FIELD NOTES.

Mr. George LaGrange of Grand Junction is advertising a sale of registered Jerseys for Januaray 28. At that time he will sell 29 head of well bred cows. Mr. LaGrange has at the head of his herd Saydas Interested Owl. Much of the offering is out of this bull or bred to him. The animals found in this herd are of excellent type, large with good capacities. Prospective purchasers will find this an opportunity to get some very fine stock. Look for the ad in this issue.

Mr. E. B. Watkins of Burlington, Colo., announces some fine Registered Shorthorns for sale. He has five fine young heifers all sired by Choice Lad, and three young cows out of Young Donald all safe in calf. Look for the ad in our Livestock Department.

The Nebraska Breeders Sales Co. of Lincoln, Nebr., announce in this issue a fine lot of Poland Chinas for sale. See their ad in our Livestock Department.

If you are looking for some high-grade Holsteins, read the ad of C. W. Curtis & Sons of Sedalia, Colo., in this issue. They have used registered sires for 13 years and have some fine stuff.

On February 10 and 11 there will be a big auction sale of high grade livestock at the Harriman Ranch, 8 miles northwest of Littleton, Colo. Three hundred and ten head of stock will be sold on these two days. This is a fine chance to get some classy Holsteins and fine horses. Read the ad in our Livestock Department of this issue.

The Flowerland Farm at Loretto Heights have eight fine young Hereford bulls for sale. These will make top-notch herd headers, have been bred right and given the proper care. Read their ad in this issue of Western Farm Life.

The Purebred Livestock Associations of Boulder and Larimer counties will hold a Combination sale at the pavilion at Longmont, Colo., on the 19th of February. They are offering a fine lot of animals at this sale, including horses, beef and dairy cattle, and hogs. Read their announcement in this issue.

The Dairy Division at Washington Says:

"As the production of a cow is doubled profits increase three times. As production is trebled profits increase six times.

"The average cow in the United States yields 1823 quarts of milk yielding 207 pounds of butter a year. Average profit per cow $20 over cost of feed."

The average production of all purebred Holsteins that have been officially tested for a year is 629 pounds of butter from more than 7000 quarts of milk.

In yielding more than three times as much as the scrub cow, the purebred Holstein yields six times the profits.

As production is tripled profits increase six times.

Send for free illustrated booklets.

THE HOLSTEIN-FRIESIAN ASS'N,
186 Hudson Street
BRATTLEBORO, VERMONT.

Registered Breeding Bulls and Heifers

HEREFORDS
SHORTHORNS

Young sctock of both sexes for sale at all times. Our sales yard is located within two blocks of The Denver Union Stock Yards. We are pleased to show our stock at all times.

THE LOWELL PUREBRED CATTLE CO.
Union Stock Yards, Denver.

Straight Bates Shorthorns

The True Foundation of the Milking Shorthorns of England and America.

But Straight Bates Shorthorns are as rare as Buffalo.

We breed Straight Bates bulls to head farm herds. A bull from our herd will reconstruct any scrub or grade herd. Our supply is limited and choice is given in order of reservation.

THE CARPENTER CATTLE COMPANY,
Greeley, Colorado.

ShorthornCongress

Make your plans now to attend the Third National Shorthorn Congress at Chicago, International Livestock Pavilion, February 17, 18, 19. $5,000 offered in prizes and all show cattle, 250 head, will be sold at auction at the time. Come and bring your neighbors. No admission charge.

American Shorthorn Breeders' Association
13 Dexter Park Avenue,
Chicago, Ill.

Red, White and Roan Shorthorns

FOR SALE

6---Registered Bulls---6

From 12 to 20 Months Old.

J. F. WELBORN
Boston Building Denver, Colo.

Watch For Our Sale

Of Grade Holsteins
IN MARCH

We have used Registered Sires for Thirteen Years.

No Better Herd in Colorado.

Oaklands Holstein Ranch
C. W. Curtis & Sons,
SEDALIA, COLORADO.

FOR SALE.

Registered Shorthorns

Five fine Heifers, from 6 to 11 months old. All sired by Choice Lad 522193, and from good milking dams.

Three young cows out of Young Donald and Colorado Archer; all safe in calf by my herd bull, Scott Free, out of Bruce Royal, a beautiful roan of pure Scotch Breeding, who won First Premium and Grand Champion at Kit Carson County Fair. Well-Bred Growthy Stock Priced Right.

Upland Shorthorn Farm
E. B. Watkins. Burlington, Colo.

Farmers' and Stockmens' Exchange

Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

PLYMOUTH ROCKS

BARRED PLYMOUTH ROCKS—BOTH LIGHT and dark, winners at State Fair and National Western, excellent layers, a fine bunch of cockerels, at $4 and $5 and up. A few hens and pullets. Chester Blunt, Route 1, Greeley, Colo.

RHODE ISLAND REDS

ROSE COMB RHODE ISLAND RED COCKERELS; prize winning, heavy laying strain. Write your wants. E. A. Miller, Alma, Neb.

BEAUTIFUL ROSE COMB RHODE ISLAND RED cockerels; large and well matured; $2.50, $3, $4, $5. Lucy Ruppenthal, Lucas, Kans.

LOWER'S POULTRY FARM, ARVADA, COLO. is the oldest and largest breeder of thoroughbred S. C. Rhode Island Reds in the West. Our stock is line bred, from selected heavy laying type for seventeen years. Eggs for hatching, $12 per 100, $5 for 30. Send for catalog and price list of stock and baby chicks.

BRAHMAS

WANTED—LIGHT BRAMA AND SPECKLED Sussex pullets, from western breeder. H. A. Bushby, Roswell, Idaho.

FOR SALE—THOROUGHBRED LIGHT BRAHMA Cockerels, from prize winning stock. Best in the west. Prices reasonable. E. Grosser, 2240 Perry, Denver, Colo.

LANGSHANS

FOR SALE—PUREBRED WHITE LANGSHAN Cockerels, $3. T. R. Elliot, Merino, Colo.

BLACK LANGSHANS OF SIZE AND QUALITY. Winter layers, win wherever shown. O. I. Moon, Fort Morgan, Colo., North Star Route.

LEGHORNS

KYFFIN'S BUSINESS BUFFS—EGG BRED S. C. Buff Leghorns, few fine cockerels, $5 each. Mrs. J. W. Kyffin, Route 2, Box 142 B, Pueblo, Colo.

RIVERSIDE POULTRY FARM SINGLE COMB White Leghorns. Heavy winter layers. Today, Jan. 1, we gathered 330 eggs from 450 pullets and 200 yearling hens. We have been breeding our Leghorns for 15 years to lay more eggs than common hens at all times, especially in winter when eggs are high. We breed from nothing but winter layers. Get Walker's strain and get winter layers. Baby chicks and hatching eggs for sale. Prices reasonable. Write for circular and price list. H. D. Walker & Sons, La Junta, Colo.

MINORCAS

SUYDAMS, MINORCAS—SPECIALTY BREEDER of Single Comb Black Minorcas. Cockerels half price in January matings. Baby chix and eggs in season. Write for prices. H. R. Suydam, 4500 Bryant, Denver.

SEVERAL VARIETIES

PULLETS, COCKERELS, YEARLING HENS. Write for prices of extra quality breeding stock; satisfaction, of course. Denver Baby Chick Co., Box 1323, Denver, Colo.

MARVELOUS NEW INVENTION INCREASES your hatches and prevents chicks from dying in the shell. Particulars free. Robert C. Lewis, 1202 Dartmouth Ave., Minneapolis, Minn.

BUFF LEGHORNS, RHODE ISLAND REDS—best layers on earth. Headquarters for cockerels, baby chix; hatching eggs. Write us your wants. Champney, 2057 South Broadway, Denver.

YOU BUY THE BEST CHICKS FOR THE LEAST money, from the Colwell Hatchery, Smith Center, Kansas. 150,000 to be shipped everywhere; 18 cents each, 500 for $89; guaranteed alive or replaced free.

COLUMBIA HATCHERY—ESTABLISHED 1911. Send us your orders for cockerels; 14 different varieties, also Mammoth Bronze turkeys, White turkeys, Pekin and Indian Runner ducks and drakes. Write for price list. P. O. Box 1102, Denver, Colo.

COLUMBINE BABY CHICK CO. WE ARE BOOKing orders for February and March hatchings of all leading breeds. We have increased our capacity for coming season. They live, lay and pay. We ship everywhere, either by mail or express; live delivery guaranteed; every care is taken of your order, whether large or small. Write for price list. 459 So. Gaylord, Denver.

TURKEYS

PURE BOURBON RED TOMS FOR SALE; $6 each. Mrs. B. F. Sharp, Route 3, Fort Morgan, Colo.

IDEAL MAMMOTH BRONZE, GOLD BAND strain. Parent Tom 40 lbs., hens 22 lbs. For sale—18 month toms, $15; May toms, $10; 15-pound pullets, $8. Laura Ullom, Lamar, Colo.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word four or more insertions 4c a word each insertion. No display type or illustrations admitted.

CATTLE

FOR SALE—YEARLING REGISTERED HOLstein bulls. Nels Anderson, Niwot, Colo.

FOR SALE—WELL MARKED, HIGH GRADE heifer calves, $25 each. Satisfaction guaranteed. Art Rasche, Lake Mills, Wis.

FOR SALE—REGISTERED HOLSTEIN BULL calf, beautiful calf; good breeding; $75.00. Geo. S. Turner, Canon City, Colo.

FOR SALE—ABERDEEN-ANGUS CATTLE; 13 registered cows and heifers, 4 registered bulls. A. B. Ashton, Arriba, Colo.

FOR SALE—REGISTERED HOLSTEIN BULL calves from advanced registered dams. Excellent breeding. Priced right. Garmesa Farms, Fruita, Colo.

REGISTERED HEREFORD BULLS; ABOUT forty well grown, rugged Hereford bull calves. Good bone, good markings and the best of anxiety fourth breeding. Not fitted for show purposes, but the kind you will appreciate in your herd. J. O. D. Ranch, Aroya, Colo.

HORSES

FOR SALE—PERCHERON STALLION, DULL black; imported 1912, foaled 1908. Has first premium from state fairs. D. Karlen, Route 3, La Junta, Colo.

MULES

JACK FOR SALE—CHAMP CLARK 6198, BLACK with mealy points, foaled 1912, registered in A. J. & J. R. of A., 15 hands standard, good bone and feet, good body and a breeder. Mules to show. Quitting the business. F. Gilgen, Eaton, Colo.

HOGS

BIG BONE POLAND CHINA, FALL GILTS, $40; yearling sows, $100. J. O. Hendricks, Seibert, Colo.

REGISTERED SPOTTED POLANDS. A FEW choice boars and gilts. John B. Young, Cedaredge, Colo.

FOR SALE—DUROC PIGS, CHEAP, FROM weaning size up, big type (registered). Write F. L. Toliver, Fort Collins, Colo.

FOR SALE—REGISTERED BIG TYPE DUROC-Jersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

ATTENTION, HOG GROWERS—YOU NEED Hog Oiler, $7.50, or Waterer, $18.00, or Self-Feeder, $32.00. Satisfaction Guaranteed. Griswold, 1732 Blake, Denver, Colo.

STOCK HOGS WANTED—WE WANT TO BUY several hundred head of pigs and hogs weighing from 60 pounds up. Let us know what you have for sale. Write Duroc Farms, 412 Cooper Building, Denver, Colo.

BROWN'S POLAND CHINAS—LEADING BIG type strains. Cholera immune. Big bred sow sale February 14, 1920. Descriptive catalog free. Write me. Boars for sale now. J. H. Brown, Route 5, Selden, Kans.

DUROC-JERSEY PIGS—SEPTEMBER PIGS BY Montair Sensation, a son of Great Sensation, and half brother to Great Orion Sensation. Grand Champion at National Swine show. You can get well bred pigs at the price of commoner stuff. Geo. E. Morton & Sons, Fort Collins, Colo.

REGISTERED BIG TYPE DUROC JERSEY boars and gilts, the kind that brings the money at the block. Fashionably and strongly bred by our herd boar, Orion Cherry King 15th, and out of Defender sows. We are sold out on anything up to July farrow. Money back if not satisfied. J. O. D. Ranch, Aroya, Colo.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

AGENTS—WRITE TODAY FOR CATALOG OF our sprayer and autowasher. Do not miss this opportunity. Columbian Mail Crane Co., Columbus, Ohio.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

U. S. GOVERNMENT WANTS HUNDREDS OF railway mail clerks. Beginner's salary, $1,300 year. Men-women, 18 up. List positions free. Write today. Franklin Institute, Dept. 0171, Rochester, N. Y.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—TO HEAR FROM OWNER OF FARM or improved land for sale. O. K. Hawley, Baldwin, Wis.

WILL EXCHANGE CITY LOTS FOR LIVE STOCK or Ford truck. J. H. Panagopulos, Abbott, Colo.

IF YOU WANT TO SELL OR EXCHANGE YOUR property, write me. John J. Black, 33rd St., Chippewa Falls, Wis.

CALIFORNIA FARMS NEAR SACRAMENTO FOR sale. Terms; write for list. E. R. Waite, Shawnee, Okla.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

TRADE RELINQUISHMENT WITH WATER right, for livestock, grocery, Denver residence. Murray, 1858 Lawrenee St., Denver.

JOIN CO-OPERATIVE COLONY—GOVERNMENT land, coming under irrigation, easy cash, work and crop payments; hurry. The Liberty Irrigation Co., 1858 Lawrence St., Denver.

FARM AND CATTLE RANCHES—CHOICE LIST. If interested call or write F. E. Wrockloff, Merchants Bank, Seventeenth and Curtis Streets, Denver, Colo.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description, location and cash price. James P. White, New Franklin, Mo.

REAL ESTATE WANTED—SELL YOUR PROPerty quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., Dept. 11, Lincoln, Neb.

CHOICE BEET LAND NEAR FACTORY, 40-80-160 acres, well improved. Dairy farms and ranches; small tracts and city properties; some places for rent. C. F. Thayer, Fort Morgan, Colo.

FOR SALE—480 ACRES IRRIGATED, BOULDER county, private reservoir; 125 acres Grimm alfalfa, 62 acres wheat, 3 sets of improvements, 1½ miles woven wire. Good terms to good man; sell part or all. L. E. Chenault, 1225 Clarkson, Denver, Colo.

BIG LAND SALE—NEAR DENVER—30,000 acres being closed out by trustee at forced sale under order of court; rich soil; good water rights; good title; your chance to select a good farm on small cash payment and ten yearly payments for balance—all within 10 to 40 miles of Denver, and all near good railway towns. Come or write the Trustee immediately for literature. Chicago Title & Trust Co., Trustee, 701 Ideal Bldg., 17th and Champa Streets, Denver, Colo.

FOR SALE—560 ACRES WHEAT AND STOCK farm; 140 acres in summer fallowed winter wheat; 220 acres in cultivation; 200 acres in pasture. New bungalow house 24x34; good improvements. All fenced and cross-fenced; also have good cane, millet and sudan grass seed for sale. Almost new Fordson tractor and 14-inch plows. Ray Gotfredson, Buckingham, Colo.

AGED WIDOW SELLS 275 ACRES, $4,500, WITH 3 horses and 2 colts; 6 cows, complete farm implements; on improved road, three-fourths mile town; 100 acres tillage, balance pasture, wood, timber, fruit; 8-room house, 100-foot barn, etc. $4,500 gets all; easy terms. Details page 22 Strout's Catalog Farm Bargains 23 States; copy free. E. A. Strout Farm Agency, 831 BA New York Life Bldg., Kansas City, Mo.

FOR SALE BY OWNER, TWO CHOICE HOMES, "Pinehurst," beautifully situated, productive 320 acres, at foot of Grenhorn mountains, 35 miles southwest Pueblo, Colo., one mile west Ryc. Splendid stock and dairy ranch, one-fourth irrigated, no further assessments, $52.50 per acre; liberal terms. Also choice fruit and poultry ranch, 14 acres, highly improved, southwest Idaho. Church, store, high school at door. Net income this year, after hiring everything, $3,800.00. Price, $13,500.00. Possession both tracts in spring. Please don't write unless you mean business. H. A. Bushby, Roswell, Idaho.

ATTENTION STOCKMEN — WE HAVE TWO stock ranch bargains. Just what you are looking for; each ranch comprises 320 acres deeded land with substantial improvements and large acreage under irrigation, and in alfalfa, timothy, clover hay, unlimited outside free range, with 4,000 acres of leased land under fence for fall pasture. These ranches are located three miles apart, 125 miles from Denver. Good shipping point, big money makers. Prices $12,000 and $13,600 on good terms. See us at once for these. Reynolds, Covey & Reynolds, 625 Exchange Bldg., Denver, Colo.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

THE LATEST IDEA IN CANNING FRESH meats, by using an Alexander Home Canner. Address for prices and description, G. W. Alexander & Co., Plattsmouth, Nebraska.

RED CEDAR SPLIT FENCE POSTS—GUARANteed full size and A-1 quality. You pay after unloading. Send for booklet and prices, delivered your station. Kirk Company, Box 1138-S, Tacoma, Wash.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

TYPEWRITER

GOOD TYPEWRITER FOR SALE CHEAP—FREE trial, easy payments if wanted. Write Bertha Payne, Shawnee, Kansas.

TANNING

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

INVENTIONS

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

FURS

SHIP ME YOUR FURS FOR HIGHEST PRICES. Correct grading guaranteed; no shipment too small or too large. E. E. Oliver, Marnel, Colo.

BROOM CORN

BROOMMAKING—A TON OF BROOM CORN made into brooms costs the housewife $12.00. A gallon of pure seed and instructions to make brooms for $2.50 and remain at your service. L. S. Sanders, Atlanta, Kansas.

GROCERIES AND SUPPLIES

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

AUTO AND TRACTOR SCHOOL

DENVER Y. M. C. A. AUTOMOBILE SCHOOL guarantees satisfaction in teaching these trades: Automobile repairing; tractor operation and repair; oxy-acetylene welding; vulcanizing and tire repair; starting, lighting and ignition; machine shop practice 334 students last year. Tuition fees moderate. Practical work under seven practical instructors. Write today for illustrated booklet. The Y. M. C. A. also conducts splendid preparatory and commercial schools for young men.

PIPE

2,500 FEET 10-INCH, 14-GAUGE SPIRAL RIVeted pipe; price, 50c to $1.00 per foot; 3,000 feet 16-inch, 16-gauge riveted pipe slip joints, 75c per foot. Above pipe ideal for irrigational work where low pressure is used. 2,000 feet 18-inch, 14-gauge slip joint new riveted pipe, 50c per foot; 300 feet 12-inch, 14-gauge double riveted flanged joint, $1.00 per foot. Above new pipe, heavily tarred. Above prices F. O. B. Colorado Springs; pipe offered subject to prior sale. The Rebuilt Machinery Co. Present office and salesroom with The Hassell Iron Works Co., Colorado Springs, Colo.

FOR SALE

PUREBRED ABERDEEN-ANGUS CATTLE

Owing to crowded pasture and change of business I am closing out my entire herd of

ANGUS CATTLE AND PERCHERON HORSES

I still have 35 head of females and bull calves of first class quality.

Also a good bunch of registered Percheron mares, all ages, some coming 2-year-olds, and our aged stallion.

This livestock will be priced right if taken at once.

G. F. LUCORE, Arriba, Colo.
On Rock Island Railroad.

POLAND-CHINAS

Extra good bred sows for sale, also growthy open gilts and spring boars. Choice weanling pigs, pairs and trios; no kin.
NEBRASKA BREEDERS SALES CO.
Lincoln, Nebraska.

HOLSTEINS FOR SALE

We have a large number of Holstein Cows and Calves. Also some young registered Champion DeKol Bulls, from $150 to $500 each. These are descendants of the famous Dr. Work herd of Pueblo, Colo.
WOLHURST FARM
Littleton, Colorado.

Sunnyside Shorthorns

Headed by Sunnyside Robert 665749. We have for sale several choice bull calves, also a car of Colorado raised cows and heifers of breeding age. Will sell in lots to suit purchaser.
GLEASON & BLAZER,
Kiowa, Colorado.

DUROC JERSEY BOARS AND GILTS

of March farrow, sired by Big Bone Wonder, First Prize Junior Yearling at Iowa, 1918. September boars and gilts (weaning) for sale NOW—sired by a son of Joe's Orion King, a World's Champion. Dams are prize winners at Denver National. Well grown and smooth individuals.
AUGUST F. BORGMANN
R. F. D. 1, Box 124 Longmont, Colo.

Boar Pigs For Sale

High class individuals of January and March farrow—will make exceptionally good Herd Headers. Prices in accordance with stock.

State Fair Winning Blood is mixed thru our entire herd. Inspection invited, or write
THE DEMING RANCH, Oswego, Kan.

Send for our new illustrated leaflet on
THE FOREST GLEN SHORTHORNS
THE CORNFORTH LIVESTOCK COMPANY
Elbert, Colorado

HOLSTEIN BULL CALVES

We have for sale some mighty good ones with fine advanced registry backing. Prices from $150 to $500. Write us.
PAHGRE VALLEY RANCH
Montrose, Colo.

LA MARIPOSA

The Carr W. Pritchett Ranch, Steamboat Springs, Routt Co., Colo., has for sale at this time 12 fine bulls from 9 to 20 months old. Sired by LOYAL STAMP. Priced right. Great-grandsons of Whitehall Sultan.

DON'T FAIL TO SEE
DALY'S DUROCS
At the Denver Show
We Want to Meet You
DR. F. T. DALY
Cambridge, Nebraska

William Upp
Breeder of
BIG TYPE POLAND CHINA HOGS—HERD HEADED BY BIG JUMBO, Missouri Prince, Cotton Wood King, and others.
Spring Boars and Gilts for sale.
Deer Trail - - Colorado

FLOWERLAND FARM

REGISTERED

HEREFORDS

8 --- Colorado Bred Fairfax Bulls --- 8

Sons of Prime Crusader, grandson of the famous Perfection Fairfax, and of big, smooth young cows of Beau Donald, Beau Mischief, Paladin, Beaumont and Mansel Boy breeding.

Prime Crusader, Son of Crusader Fairfax, Son of Perfection Fairfax.

We offer but eight bulls for sale this year,their ages being 15 to 18 months. Their quality is to insure our reputation, their price with it to insure the buyer's becoming our regular customer.

These bulls are of the choicest, come from a small herd, handled with the greatest care and watchfulness, and raised to bring out the best of their breeding.

DON'T FORGET

that pedigree is but half, while care in the first two years' growth is the other half. We give the best of both

AT FLOWERLAND FARM

BREEDING AND CARE OUR WATCHWORDS.

FLOWERLAND FARM is located on Federal Boulevard just north of Loretto Academy, six miles from our State Capitol at Denver, half hour auto ride from our city stock yards. You can call up Main 1851, or Englewood 151, and make appointment, or drive out.

Western Holstein Farm

HALL BROS., Props.

Breeders of the correct thing in Holsteins. Colantha-Johanna-Ormsby Families. Pedigrees full of great show-ring winnings and world's record milk and butter production. Send for circular.

BULL CALVES $200-$500 EACH

Address Box 2, South Denver Station, Denver, Colo., or visit the Farm, 5½ miles southwest of Denver on the Morrison Road.

SPECIAL SALE OF SPRING PIGS

Big Type Poland China

TO BE SHIPPED AT WEANING TIME. WRITE US, OR COME AND INSPECT OUR HERDS AT

THE HOME OF "BIG SENSATION"

The world's largest Hog—Weight 1204 lbs.

A. J. EHRHART & SONS, NESS CITY, KAN.

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.

C. F. Burke, Mgr. Pueblo, Colo.

Milking Shorthorns

THE OTIS HERD

To Dairymen:

Use a milking Shorthorn bull on your grade dairy cows and produce a good beef animal without loss of milk production.

Prominent winners, Denver Stock Show. Bulls for sale at reasonable prices. Headquarters Willoughby, Ohio.

Write for prices to our branch herd.

S. G. ROSE, Mgr.

Pine Valley Farms

COLORADO SPRINGS, COLO.

COL. H. C. JENNINGS

Pure-bred Livestock

AUCTIONEER

Also conduct Sales of Real Estate

534 17th St. Denver, Colo. Phone M-6870

LaBELLE RANCH

Home of Cherry Chief

Sire of many of Colorado's Prize-winners, has a nice lot of choice spring and fall pigs by this great boar

Also some sows bred to Cherry Chief for sale.

H. G. SQUIBB AURORA, COLO.

PUBLIC SALE

J. H. BROWN'S SIXTH ANNUAL

POLAND-CHINA SALE

Saturday, Feb. 14, Oberlin, Kan.

A great offering from America's leading breed of swine,

35 HEAD OF STRICTLY BIG-TYPE PRIZE-WINNING STRAINS

All cholera-immuned by double treatment. Three grand tried sows, including Superbas Wanted, by the Panama-Pacific Grand Champion, Superba. This is perhaps as large a sow as will be sold in the West this winter. These sows bred to Black Cloverdale 69507s, 259661a for March farrow. The opportunity of a lifetime for the man desiring to establish a great herd.

Twenty-seven big, smooth spring gilts—the 300 to 350-pound kind, bred to Buster Again and Western Giant for March and April farrow. Real brood sow material with many show prospects among them.

Also 5 boars ready for immediate service.

On account of better accommodations, sale will be held in Oberlin, the county seat. Parties from a distance entertained free.

Breeders, Farmers, Pig Club Boys—all interested in good hogs—cordially invited.

WRITE FOR CATALOG, AND PLAN TO ATTEND THE SALE.

J. H. BROWN ROUTE 5 SELDEN, KANS.

THE PLATTE RIVER CATTLE COMPANY

Denver, Colorado

PURE BRED AND REGISTERED

Hereford

BULLS and HEIFERS

1 car 2-year-old bulls.

130 head yearling registered and pure bred bulls.

Several cars yearling heifers, 2-year-old heifers and cows.

Good Bone, Colors and Markings

Write or phone us for prices

715 E. and C. Bldg. Phone Main 3989

406 New Live Stock Exchange Bldg. Phone Champa 4793

Wyoming 4th

L. G. DAVIS HEREFORDS

ANXIETY-BRED

Sires in service:

The great BEAU CARLOS 2D 352001, sire of Wyoming and many other winners.

BONNIE WESTON 558495, son of Bonnie Brae 15th.

WYOMING 4TH 603868, champion senior yearling bull of 1919 Denver show; sired by the grand champion Wyoming.

We have a few highclass yearling bulls for sale. Ranches at Saratoga, Wyo., and Denver, Colorado.

L. G. DAVIS SARATOGA, WYOMING

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS, JOHNSTOWN, COLO.

JAMES PONTIAC DEKOL ORMSBY

JERSEYS

Western Home of The Majesties

We have a yearling bull by Majesty's Oxford Combination, out of an Imported cow, in R. M., solid color, a corking good calf, will make an attractive price on for quick sale.

Also a January calf, sired by a 700-pound butter bull, out of a R. M. daughter of Count Majesty, that is hard to beat; very low price to move at once.

A few good Duroc gilts, either bred or open. Write me your wants, please.

A. M. McCLENAHAN GREELEY, COLORADO

BEAU ASTER

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER

Holyoke, Colo.

Glendale Stock Farm

Irvindale Rowdy Grand Champion Belgian Stallion Chicago, 1917, Denver, 1918 and 1919

Breeders of

BELGIAN HORSES and POLLED HEREFORD CATTLE

Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.

COMBINATION LIVESTOCK PUBLIC SALE

Thursday, Feb. 19

In the Heated Pavilion on the Fairgrounds at

Longmont, Colo.

67 HEAD OF PUREBRED LIVESTOCK

will be offered at Public Auction by the Purebred Livestock Associations of Boulder and Larimer Counties.

8 Horses 7 Percherons—4 mares and filleys; 3 Stallions. 1 Suffolk Stallion.

23 Beef Cattle 21 Shorthorns — 7 bulls and 14 females. 2 Hereford bulls.

15 Dairy Cattle 11 Holseins — 7 bulls, 4 females. 4 Jerseys—1 bull, 3 females.

21 Hogs 13 Poland Chinas; 2 Boars, 11 females. 8 Duroc Jerseys—1 boar, 7 females.

Remember the Date—THURSDAY, FEBRUARY 19—and plan to be at this exceptional sale. This is your opportunity to pick up some excellent animals.

Boulder-Larimer Counties Purebred Livestock Associations

LIST OF CONSIGNORS.

HORSES.

Zang Investment Co., Broomfield, Colo.
A. B. Hamilton, Loveland, Colo.
Clarence Bixler, Boulder, Colo.
David Eisele, Longmont, Colo.

BEEF CATTLE.

Shorthorns.

Henry Harman, Boulder, Colo.
David Warnock & Sons, Loveland, Colo.
W. A. Dickens, Longmont, Colo.
Glen Martin, Boulder, Colo.
Geo. Miller, Lafayette, Colo.
Bert Hart, Longmont, Colo.
R. C. Gilpin, Loveland, Colo.
I. M. Watts, Timnath, Colo.

Herefords.

Chas. C. Stobbe, Ft. Collins, Colo.

DAIRY CATTLE.

Holsteins.

Lohey & Wales, Johnstown, Colo.
Krebble & Van Meter, Loveland, Colo.
Lee Johnson, Longmont, Colo.
E. E. Johnson, Niwot, Colo.
Marcus Harper, Boulder, Colo.
Harry Hankins, Boulder, Colo.

Jerseys.

J. D. Pancake, Loveland, Colo.
Geo. Morton & Sons, Ft. Collins, Colo.

HOGS.

Duroc Jerseys.

Bert Hart, Longmont, Colo...
Godfrey Bros., Fort Collins.

Poland Chinas.

W. R. Reynolds, Longmont, Colo.
J. A. Davidson, Longmont.
A. D. McGillvray, Boulder, Colo.

Will Sell at Public Auction

Feb. 10 and 11

Harriman Ranch

12 Miles southwest of Denver, 4 miles straight west of Ft. Logan, and 8 Miles northwest of Littleton.

310 Head High Grade Stock

45 HEAD HORSES—25 head mares, from 3 to 6 years old, weight from 1400 to 1950 lbs. each. Six head geldings from 1400 to 1600 lbs. each, age from 4 to 5 years. Fifteen head of 1- and 2-year-old colts, all heavy boned. One Percheron stallion 9 years old, weight 2250 pounds.

195 Head of Cattle

60 head of high grade Holstein Milk Cows; fresh and springers. Sixty head 2-year-old Holstein heifers, Thirty-three head red steers, 2-year-olds. Ten head 2-year-old red heifers. Thirty-five head Holstein heifer calves.

60 Head of Hogs

Several good brood sows will be offered. Your chance for some good stuff.

ALL FARM MACHINERY necessary to run a 1400-acre ranch will be sold. Horses and miscellaneous stuff will be sold first day of sale.

Write for further particulars to

J. A. Pearman & Sons, Owners, Littleton, Colo.

Phone Littleton 57-W or Littleton 173-J4.

COL. G. M. BANKS, Auctioneer.

This cow has milked as high as 63 lbs. of milk in one day and is the dam of SAYDA'S INTERESTED OWL 147017

29 Selected Purebred Jerseys

either sired or bred to him, will be offered at

Public Auction

In Grand Junction, Colo., January 28, 1920

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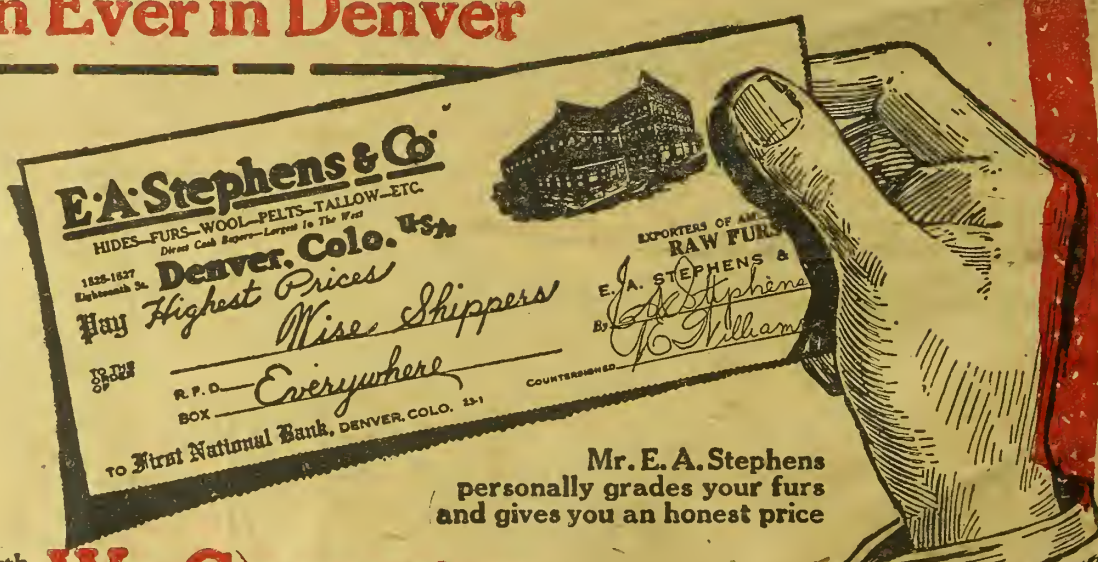

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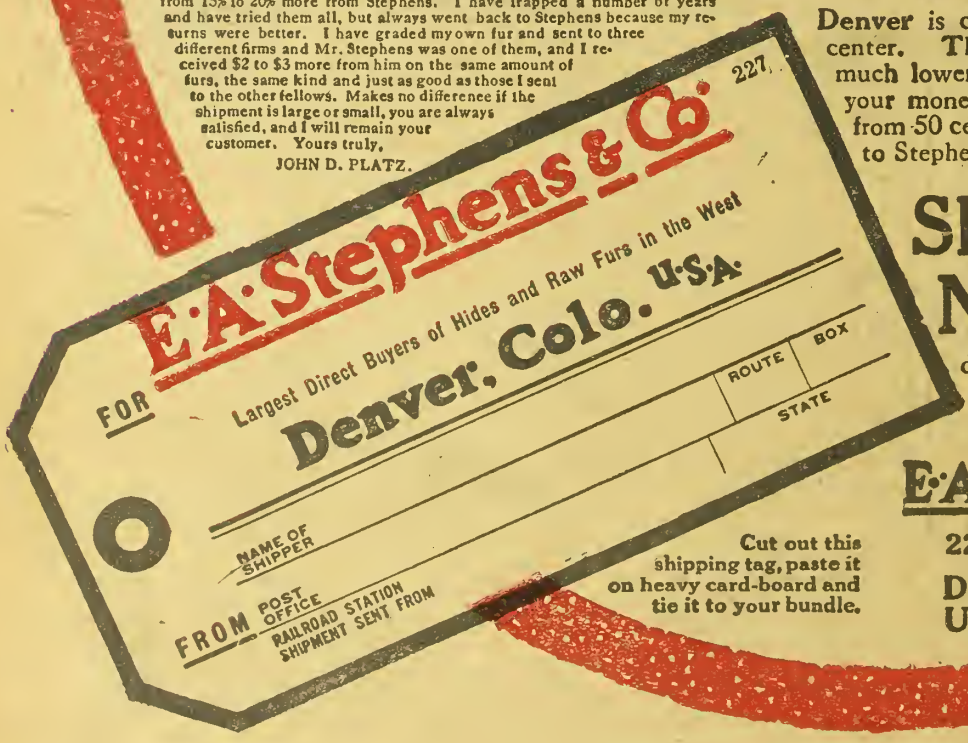

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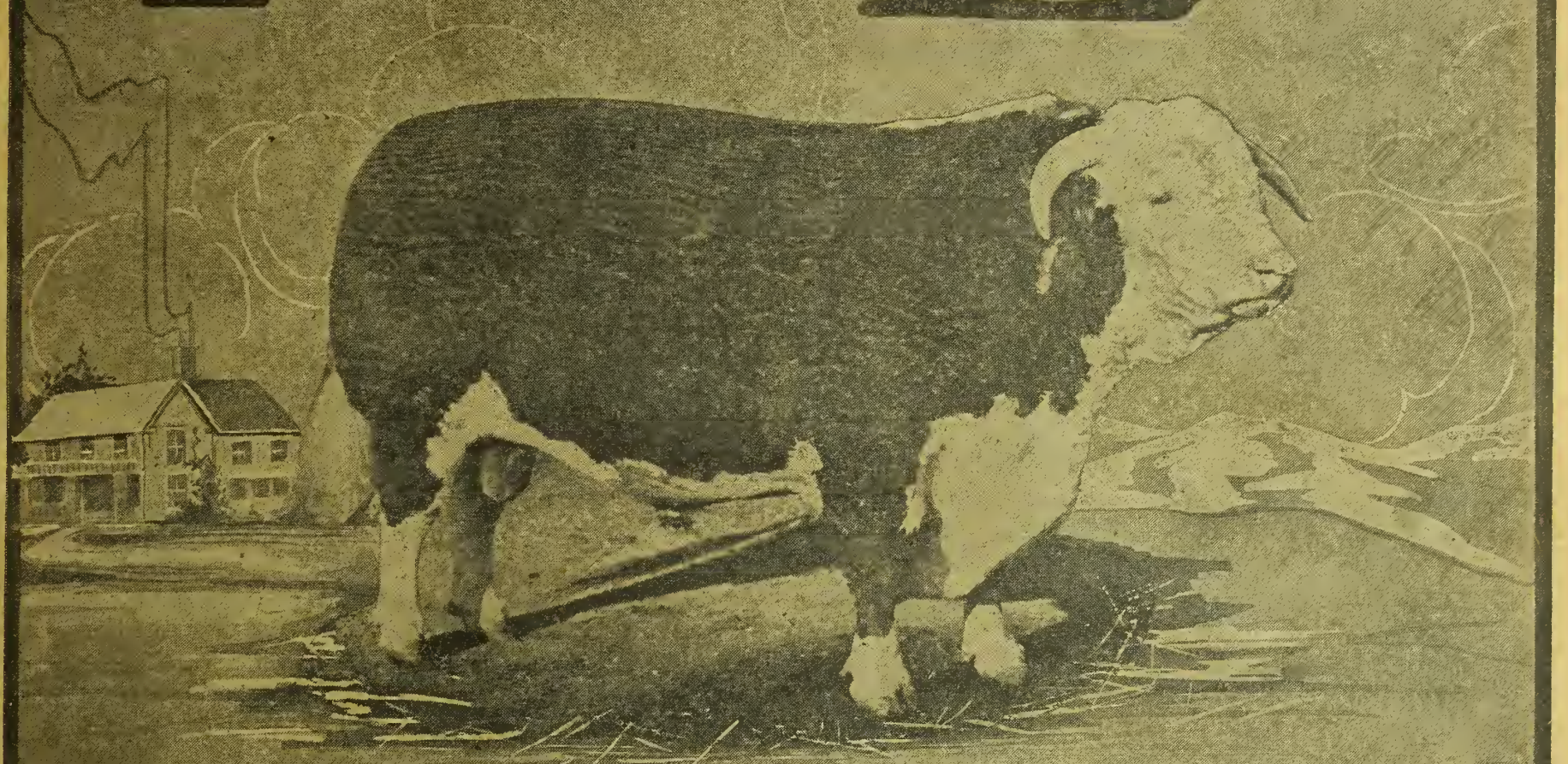
National Western Stock Show Story in This Issue

WESTERN Farm Life



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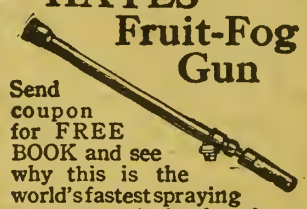

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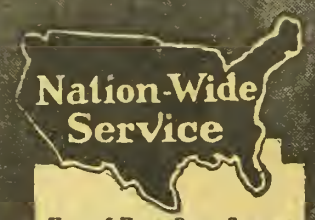

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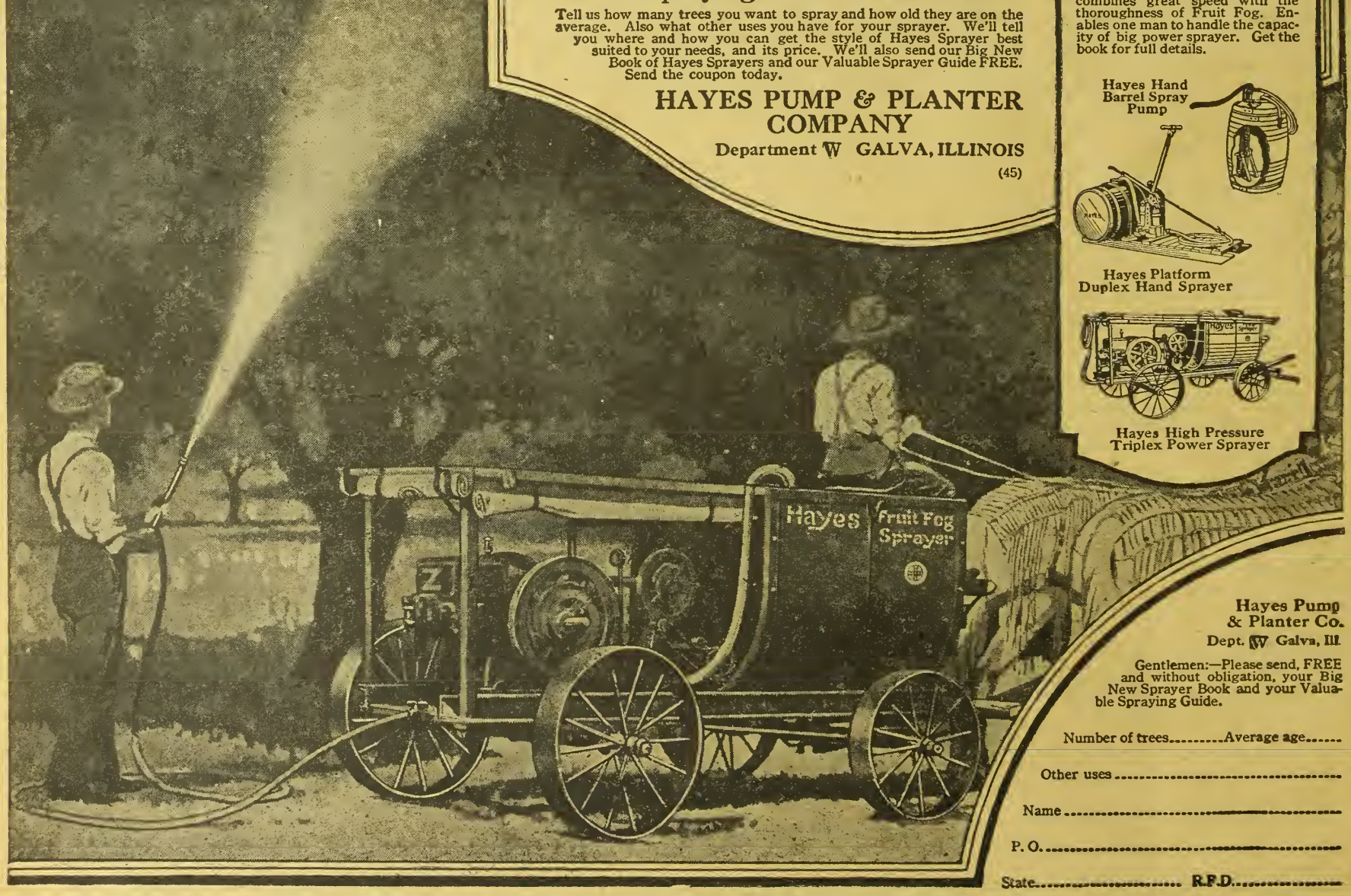

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VOLUME XXII. DENVER, COLORADO, FEBRUARY 1, 1920. Number 3.

Record of Achievement in Livestock Industry

A REVIEW OF THE NINETEEN TWENTY NATIONAL WESTERN SHOW

ALVIN T. STEINEL.

THE nineteen-twenty National Western Stock show is history and the record of it is one of achievement for every breed of farm livestock represented in the exhibits. In beef cattle the outstanding feature was a Hereford show that, for quality, has not been excelled in this country or abroad and has only been equalled in numbers by the International. Again the whitefaces scored, setting new records for Denver in the auction sale of breeding animals when bulls sold as high as $7,500. And it was in this breed that a Colorado man covered himself with glory—found himself famous by winning the female grand championship with a yearling of such rare excellence that she defeated a class of 44 picked from the greatest breeding farms west of the Mississippi.

In Shorthorns the show brought out the same good western herds that were here a year ago, plus a considerable number from Nebraska and Kansas that were new at Denver, and to this breed went the grand championship on carlot feeders.

For the Angus it was a repetition of many victories won in fat steer classes at this show and at the International. Angus blood predominated in the cross-bred that won grand championship of the show and Angus beef brought top prices in the auction sale of fat stock, where choice carcasses for the fine trade were in demand at fancy figures. In dairy cattle the show fulfilled every promise of the biggest ever held in the mountain states, and it included most of the good herds of the leading milk breeds. It brought together a larger number of Milking Shorthorns (the dual purpose cattle) than have been seen at Denver—more in fact than are ordinarily seen at cornbelt state fairs.

In draft horses it presaged a revival of interest in the most dependable and necessary farm motive power, which we have been neglecting for mechanical methods, in the delusion that the day of the horse was declining. In sheep there was a noticeable improvement over 1919 and a promise of a better appreciation of wool and mutton as a part of our husbandry. In swine it was a bigger and better show than any every held at Denver. There was no falling off anywhere along the line, from beef cattle to poultry.

Progress was the dominant note in every breed and class of stock. Weather conditions, the attendance, the interest on the part of city, state and neighboring states, all were favorable.

There were many distinguished visitors, governors, ex-governors, notables in business, leaders in agriculture from the farms and colleges, one farmer who has been mentioned as a possible candidate for the presidency — Lowden of Illinois — representatives of the livestock markets from Missouri river packing centers and Chicago, people from nearby towns and more people from the farms and ranches of this vast western domain of plain and mountain.

They rubbed elbows while admiring the sleek bodies of meat animals and they discussed the show, its worth to the community, its intrinsic value, some venturing the guess that a million dollars' worth of animals had been brought together for competition and sale, when, as a matter of fact, the week's transactions amounted to many millions of dollars on stock that changed hands, while the bulk of the individual entries went back to their homes, to continue production. It is, truly, a big show in every sense of that short but expressive word, a show pregnant with promise of the future of the Rocky Mountain region as the chief source of the nation's meat and milk.

Anyone carefully following the judging became impressed with the magnitude of these kindred industries and had borne in upon him the fact that the farmer requires an unusual fund of knowledge, a broad perception of natural laws, ample capital, all coupled with a robust physical make-up to meet the hardships of outdoor labor. There are many who come to the show year after year sensing the fascination of the game of livestock improvement without being able to define what attracts them, other than a love for animals and pleasure in the company of their fellows. There are others with a professional interest who are there to match their own with the animals of others, to learn or unlearn, to win or lose, doing either with true sportsmanship. The winners have their reward; the losers are relieved of the sting of defeat when it can be said of them that they were good losers. The crowds come and go, some intent on merely seeing the biggest creature, the heaviest bull or horse, or the one with appealing lines and color; others with truer appreciation of what it all means, coming to admire the workmanship and skill of the masters of the breeding art and the knack of feeding to a suitable finish some class of farm animals. It is a great show, a clean game, an honest competition, the sport of gentlemen and gentlewomen from the farms and ranches of the great west.

Blue Coon, Grand Champion Cross Bred Steer at the National Western Show. This Steer was Finished by the University of Nebraska. Angus-Shorthorn Cross Calved September 20, 1917, Weight 1675 Lbs.

THE BEEF CLASSES.

H. A. Lindgren.

The 1920 National Western show of Herefords will go down in history as one of the greatest if not the greatest, Hereford show ever held. The competition was mainly from western herds. Some few herds were shown from the middle western states.

Tom Patterson of Kentucky placed the awards. His decisions were clear-cut and promptly made, which added snap to the show. One of the strongest classes shown was that of aged bulls. Repeater Junior from the Harris & Son herd was the outstanding choice for first and later for grand championship. This bull is exceptionally well covered, exceptional in the loin, deep twisted and hard to fault anywhere.

In the two-year-old class, Romeo Fairfax was the winner of first and was also awarded reserve championship.

One of the strongest classes of bulls was that of junior yearling. There were 50 entries and when the placings were made it was extremely difficult to fault the first eight animals. The entire string showed most excellent quality. Repeater 212th was winner of the class and was also junior champion Hereford bull. Panama 81st was a close second. Unless the unexpected happens, these two young bulls will be lively contenders for the grand champion honors in future shows.

In the junior bull calf classs Colorado breeders were honored when Fulscher & Kepler of Holyoke were awarded first and second respectively on Beau Domino and Princeps Domino, both sired by that great bull, Prince Domino. Princeps Domino sold in the Hereford sale for $7,300. Both of these bulls carry that wonderful quality so characteristic of the Domino breeding.

The showing of females in the Hereford classes was equally as strong as that of bulls. One of the interesting things of the show was that the female grand championship was awarded the junior heifer calf Ruth Domino, from the Fulscher & Kepler herd. The competition for this honor was keen, but this heifer won on her excellent quality.

One of the best classes of the show was that of the Western Hereford Futurity in which there were 175 entries. Champion bull under this classification was won by Panama 100th, owned by A. B. Cook of Montana.

The Hereford breeders are looking to the Denver show to decide the best there is in Hereford breeding. The interest in this breed in the west is surpassing the fondest hopes of the fancier. Strong, vigorous, well meated individuals are leading the breed in the west.

Shorthorn Breeding Cattle.

The Shorthorn show, from the standpoint of its practical application, was extremely successful. While there was not so large a number of the leading breeders of the country as was true with the Herefords, more of the new breeders were entered. The classes were large and close and the general quality was of high standard.

Lawrence Ogden of Maryville, Mo., placed the awards. Breeders from Nebraska, Wyoming, Kansas and Colorado were well represented. While it was not the strongest Shorthorn exhibition seen at a National Western, it was nevertheless a credit to the

Turn to page 22.

Grand Champion Carlot Breeding Heifers, Herefords, Bred By John Painter & Sons, Roggen, Colorado.

Step Saving --- Child Training --- Nutrition Study

WHAT THE WOMEN DID AT THE STATE FARMER'S CONGRESS

ERMA DOUGLASS.

DID the women go to the Farmers' Congress at Fort Collins? Yes, indeed.

While the Dairy Association and the Beemen of the Rural Life Conference were all speechifying and presenting all the thousands of things to be done next year, the women took a little time from helping to manage these "powers that be" and had a program of their own.

We took the first morning for a discussion of what individual women had done toward making an efficiency expert feel absolutely useless and behind the times in their housekeeping affairs. The first report was a collective one of what several women had done in food problems, but the other two were individual reports of problems worked out in the individual's home. But we're keeping you from the program, —here it is!

Miss Mabel Campbell, former home demonstration agent in Denver, but now in charge of the Smith-Hughes vocational work for girls in Colorado schools, started us off with an account of dietary studies, which one of her classes in Denver worked out for themselves.

"These studies we worked out were during conservation times in war and were mostly of temporary rather than educational value. The classes were held last spring with representatives from many groups of women and while we didn't intend them as exactly educational the women who followed them felt as if they had a very strong permanent value.

"Many talks had been given but talks don't go far enough—and are about as valuable in getting results as listening to good music is in making one's hands supple for piano playing. The women who wanted the work knew that the diet of their families was inadequate not in quantity but kind. So we began in the simple old way of measuring, not by appetite, but by what sorts of food we ate. Total calorie value was mentioned and protein, ash, body regulators, bulkiness and vitamines came often into our talk.

"First we talked over the food supply necessary for a family of five and asked these questions: 'Is it enough? How should we spend less, where should we spend more?' After we had worked out an adequate diet for this theoretical family the women criticised as follows: 'We can't afford so much vegetables and fruit!' 'We can't afford so much milk!' 'My husband wants more meat than that!'

Promised to Keep Records.

"Then the real fun began. Three women promised to keep a week's record, weighing the food, and figuring the calories and body building food used, four kept on with the second week and five kept records for a month.

"These were some of the results and stories that came out. An elderly woman said, 'My husband and I eat until we are ashamed and yet we are hungry all the time.' A mother told us, 'I can't get my family to eat what you are recommending. My child is delicate.' I got her to give me the menus of meals and also what the child ate between meals. In the first case the man and his wife ate nearly all vegetables and very little fat. The addition of a little more fat balanced the food and stopped this feeling of hunger. The other case of the youngster revealed the fact that she was eating candy and many cookies between meals. A regulation of this habit removed much of the so-called delicacy of appetite.

"We found several faults in most of the diets brought up for criticism. They lacked cereal or milk or vegetables or all three; they had too much meat; the children went without breakfast or ate very poor ones, and they had too much tea and coffee.

"It was comparatively easy to see the value of the cheaper uncooked cereal and get the idea that long cooking made it more valuable still; but when it came to milk we had many protests. Most of them felt like the milkman who heard a home economics woman talk about the great food value of milk and then said: 'That's all right, Miss, and it helps my business a lot, but you and I know there ain't nuthin' in it. A food's somethin' you can chew!' But they finally saw that less meat and eggs with more of milk did not add to the expense and really balanced up the food better, especially for the children. And then to stop taking off cream for coffee when it could not be afforded separately and let children have the whole milk—using whole milk in coffee, too, was another blow. But they decided that was best too.

1. Mrs. Charles A Lory. 2. Miss Neal Knowles, Home Demonstration Agent Leader for Iowa. 3. Mabel Verne Campbell in charge of Smith-Hughes vocational work for women in Colorado. 4. Miss Mary Collopy, Home Demonstration Agent, El Paso county, Colo.

"In the cases of families who did not like vegetables the reasons were usually found in the fact that they ate much meat and rich highly seasoned foods with very rich desserts. This required both a change in discipline and diet, to extend the meat flavor through the vegetables and simplifying the desserts.

"The one slogan was—'We'll do our changing without calling friend husband's attention to the easy changes we make.' In most cases it worked."

Mrs. McCreary's Story.

Now let's introduce Mrs. McCreary of Fort Collins, the next speaker who gave us such a delightful story of how she learned to "short cut." "Watch Your Step" was her subject:

"Use a pedometer for thirty days and find out which tasks in the daily routine are using up your time and energy. Then after having found out this very important thing, put your head at work to save your heels and start short cutting; by simply finding a shorter and less irritating way of doing the same task.

"The writer found, after wearing a pedometer for thirty days in doing the work for six people in a seven-room house that she had walked 94 3-5 miles. She wore it again for thirty days and did the same tasks in 79 miles by using a little more forethought, by giving it about the same amount of study that it would take to prepare a paper on Chaucer or Italian art. If we can just convince ourselves that our job of running a house and rearing children is just as good a job, just as important, as any other job in the world, then we will feel that it is worth the study and brains necessary to plan it out effectively.

"She found for instance that she was using 200 steps every time the table was gotten ready for a meal, we set the table three times a day, 1095 times a year, just save 10 steps each time and you save 32,850 steps in a year. As an average step for a woman is two feet, you will save in the neighborhood of 13 miles just in that one task of table setting. Drag the dining room table over to the kitchen door, put your dishes on and then push it back again. Find out how many steps you take to the cellar each trip. When you learn it is 50 or 60 each time, you'll stop a minute and think to save yourself a second trip.

"Get that labor saving device you have been wishing for. Of course it costs money but it doesn't cost as much as a funeral, or boarding out the family until your husband has found a second wife!

"So watch your steps, short cut in every possible way you can without lowering your standards, so that we may all have a little more time for the children, for the outside interests every woman needs to make her a more cheerful and inspiring home maker."

Mrs. Lory's Talk.

Mrs. Charles A. Lory finished our morning for us in the most helpful way possible, for her subject was "The Division of Labor in the Home."

"We found in our home that a division of labor was absolutely essential to getting everything done in our home, because we wanted to keep it a real home, and so these are things we really did. We wanted the children to get a certain pleasure and profit out of the training and to learn responsibility and organization of work. The homely, dear little tasks of everyday are the foundation for the dearest of memories in later life.

"It isn't always the easiest thing to stop and teach a child what the mother or father can do much more quickly, but by dividing up work for everybody we wanted to get away from the dangers of selfishness. Unselfish parents make selfish children and vice versa. Children need an appreciation of how much of a parent's time it takes to do all the work, and of how necessary regularity is in work. The companionship of doing the tasks together is worth more than the time value of the few hours could ever be. They learn that each has a load to carry and what the results of shirking are.

"For a long time we have had lessons on the care of individual property. In my family of three boys and one girl this pride has grown to the extent that each child wants to have certain pieces of furniture in bedrooms, his, under his care. They have now through their own request their own sheets, pillow cases and towels each marked with the owner's initial. Then if a pillow fight does arise and a case gets torn that owner is just out a good pillow case. It simplifies matters greatly.

"They earn money by doing extra tasks about the house; they have their own small allowances and are learning how to save and invest small amounts. They have always been taught to keep accounts.

"In dividing the work we always rotate tasks for instructions and interest, and the length of periods depends on the difficulty or monotony of the tasks. We check and grade the work and have as awards certain things the children are very desirous of doing. These rewards are also based upon the value of work done—a small reward for a small task well done, and a big reward for larger ones, or a long series of small ones well done.

"We divided the tasks into several groups—the outside chores such as the care of stock, horses, cows, chicken yard, barn and walks and the inside chores, as making of beds, care of bed rooms, living rooms, sweeping, dusting straightening, keeping clothes in order, cleaning and buying. There are certain weekly or monthly tasks, such as cleaning certain parts of the house and washing and ironing.

"The children are learning to cook and the boys are proud of the accomplishment. The oldest boy can make quite as good biscuits as we older folks. They are getting a good deal of chemistry out of all this work too and that keeps up interest. All this work proves enjoyable in the end and ties the children to parents and home as no other one thing does."

The next morning we had more of the organized work in the counties. Two home demonstration agents, Miss Collopy of El Paso county and Miss Douglass, formerly of Huerfano, and Miss Neal Knowles, state home demonstration agent leader of Iowa, told how some women had worked out problems together or individually.

Miss Collopy's Work.

These were some of the interesting things Miss Colopy told us:

"We had a number of poultry culling demonstrations and after one of them, Mrs. Francis Rooney of Colorado Springs gave us this report. Out of a flock of 34 hens, 20 were culled out leaving 14 hens. Before culling we were getting seven to ten eggs a day and after culling the number of eggs gotten each day was seven to ten. We no longer fed those twenty hens."

Mr. and Mrs. W. H. Lauck of Colorado Springs reported on some work with trees tried on their dry land farm east of Colorado Springs. The ground was broken in the fall to catch the snow and seedlings were planted the next spring. Seedlings have proven best in this dry land country, and were purchased from the state forester very reasonably.

These tiny trees were planted 10 to 12 inches in depth and were given no water at any time. They tried the following varieties— black locust, honey locust, Russian olive, American elm, cottonless cottonwood and boxelder.

During the summer there were forty-five days of drouth. The Russian olive stood the test better than any other, honey locust was third. In addition Mrs. Lauck set out twenty-four year old seedlings of yellow pine, Douglas fir, blue spruce, and Engleman spruce. These were all living when the last observation was made this fall.

One community wanted a library of some sort and this was the way it was worked. Mrs. Charles Phillips of Tacony, Colorado, was appointed community chairman in the farm bureau work on "Better Reading Material in the Home." Then they had a social and spent the money for books to start a permanent library. The home demonstration agent aided in making out the suggestive list. The next step was to order a circulating library from the state librarian in Denver. They got 50 books for six months at a cost of 69 cents for freight charges from Denver to Pueblo. Several more volumes were secured through the county superintendents office in Colorado Springs and Tacony had some good reading matter.

Many other interesting points were given but space doesn't permit putting them in.

Miss Knowles came next. Her subject was "Woman's Responsibility in Community Work."

"Community work includes in its program all the points which go to make the community a better one to live in. Just as a sample, is your community doing all it can toward bringing about the best conditions in health, thrift, improved schools, food study for economy and nutrition, clothing, value of dairy products, home equipment, social welfare, recreation or marketing? The vital needs of the homes in the community formulate this program of work. Teachers, preachers and home makers all need to help; women must help to make it a power."

She told us how to present these subjects through club study programs, fair and exhibits and that many other agencies were ready to co-operate with us such as State Board of Health, School Superintendents, Red Cross nurses and the Federal Department of Agriculture, through their various bureaus and extension workers. The work of the farm bureau with its committees and county agents was given particular stress.

She summed up as follows: "Real success can only depend upon intelligent knowledge of community conditions, in school affairs, recreation, roads, or homes, and the opinions of the people as related to vital subjects of the day. No one succeeds who does not have a genuine interest in the welfare of the community and that absolute interest in folks, and faith in folks that can come only with thorough unselfish acquaintance. This is the first step in establishing the thorough team work which must exist as the essential element in developing a progressive blue ribbon community."

On our last morning two people whose business it has been to go into the scientific detail of things that the great majority of us never get to see told us how research people go about their interesting but, to us, difficult work.

Dr. C. P. Gillette of the experiment station at the college told of the very intensive work done by experiment stations in increasing the food supply of the nation, through trying out the best food crops to grow in certain localities.

He told us also of work done by southern experiment stations in growing and testing flax and cotton as textile fibres for use in clothing. He told us how tests were made to determine the strength and wearing qualities of

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Timnath Puts on the Finishing Touch of Progress

ROUNDS OUT HALF CENTURY WITH SCHOOL CONSOLIDATION

C. G. SARGENT, Department of Rural Education, Colorado Agricultural College.

Mrs. F. W. Sherwood who taught the first term of school in the Timnath district, beginning April 1869. Fifty years later, she spoke at the dedication of the new Timnath Consolidated school.

TIMNATH! What is it? A patent medicine, or a breakfast food? It is neither. It is a prosperous and progressive rural community. Then where is it, in the Holy Land of Israel, in the Celestial Empire, or the islands of the sea? It is not so remote as that, although until recently comparatively unknown. It is located in the famous Cache La Poudre valley, scarcely six miles east of the city of Fort Collins, Colo. And, although it has just rounded out a half century of its existence, and that in comparative seclusion, henceforth its virtues will be known and its praises will be sung wherever there are people interested in the education of country children.

A little over fifty years ago a fleet of "prairie schooners" arrived in this vicinity, unfurled the Stars and Stripes, pitched camp for the night and the next morning they began the erection of homes, organized a school district and thus took possession of this part of the Great West in the name of Anglo-Saxon civilization. Mrs. F. W. Sherwood, one of the pioneers and still one of the honored citizens of the county taught the first school, in a little log cabin on the south side of the river fifty-one years ago. This community, like hundreds of others in the west, passed through the pioneer stage where things were done on a small scale and with a restricted vision.

As time went on the Poudre river and its tributaries furnished abundant water which was stored in dozens of large reservoirs and finally brought to the thirsty land through a vast system of canals and ditches. The land has prospered abundantly and is justly famous for its large crops and fine livestock. The farms are all in a high state of cultivation and the district is fairly covered with fine homes.

About four years ago the people of this district saw a new light. They caught a new vision. At this time they took an inventory of their achievements and their possessions. They discovered that they had made phenomenal progress in the cultivation of their farms, possessed modern farming implements, used the latest and best methods of irrigation and cultivation, had bred up their livestock until it compared favorably with the best, had builded for themselves comfortable homes equipped with many of the conveniences made possible by twentieth century progress and invention; the auto had replaced the horse on the road and the "buggy shed" became the "garage" in many a barn. And after this survey they were just about to pat themselves on the back in deserved commendation for their accomplishments in thus completing their tasks, when they discovered that they had all but overlooked one of the most important institutions in their neighborhood, their public school.

Yes, the log school had given place to a better building, the one room had increased to two, then three, and at this time to a four-teacher school. But they still had the antiquated district system with which they had started out a half century earlier, and they had forgotten and neglected to lay aside this pioneer school system as they had done at successive stages of their advancement with the ox-cart, the grain cradle, the hand seeder, the walking plow, the "broncho," "scrub" cattle, log houses and pole barns thatched with straw. To their surprise they found that they had dragged their pioneer school system over into the twentieth century.

Girls in the home making classes and their teacher, Miss Estelle Griswold, a graduate of Colorado Agricultural College.

The four teachers were struggling with an old piece of machinery. It was a one-room system, greatly overgrown and unable to function properly in educating children for twentieth century conditions. They hastily diagnosed the case, agreed upon a new course of procedure and applied the remedy. Co-operation was the watchword and they invited their neighbors in adjoining school districts to unite with them in forming a new community to meet new conditions, so that all working together they could build adequately and properly equip a new school with more, and if possible, better teachers, so that all of the children in this large district might have a good school with twelve grades within daily reach of the home of each child in the district.

The first effort to consolidate these districts was not successful. One or two districts voted adversely on consolidation, and this was not so much a reflection on the people who opposed the movement as it was an indication that the leaders had blundered and that the preliminary work had not been well done. However, the campaign was continued quietly for a year and then actively for another year. The second election carried for consolidation by an overwhelming majority. At last the victory was won. The re-organization was perfected. The new school board was composed of men of vision and they in turn were supported in their efforts by other patrons equally desirous of providing the best possible opportunities for the children. Another year was spent in perfecting their plans, in the erection of a fine modern school building, and in organizing their new school. The fourth year has been spent in the enjoyment of the fruits of their labors.

Today the school house is the most conspicuous building in the district, as it should be. It is a commodious and beautiful structure both without and within, and stands as a monument to the wisdom and forethought of the fathers and mothers of the district. Timnath is now known and located by its fine school. It has ten class rooms, a large study hall, office and library rooms, water fountains, lavatories, toilets, shower baths, a gymnasium and a fine school and community auditorium that will seat 350 people. The new school has an efficient superintendent assisted by nine other teachers, thus giving them a graded school with a complete high school. The school is organized on the six-six plan, and although this is the first year under the new system, still forty-two students are now enrolled in the high school department. The old brick building formerly used has been converted into a domestic science laboratory, and the home making classes conducted therein have already been approved for state and federal aid under the national vocational education act. The school is already a conspicuous success in every department.

Five auto busses are used to transport the children from the abandoned schools, and these have been a complete success notwithstanding severe weather, lots of snow and difficult road conditions. Not a bus has failed to make its trip and on only one occasion has a bus even been late, and that was on account of drifted snow. This time it reached the school house at 10:00 a. m. with all of the pupils in good condition and no damage done.

The cars are kept on the school grounds in the school garage and are kept in repair by one of the drivers; trusty pupils drive three other cars while the local minister drives the fifth. Each driver is paid $40 per month. This is another challenge to the objection that children cannot be successfully transported to consolidated schools over ordinary country roads. In the severe weather conditions above referred to, the only children that suffered from the cold were those who lived so close to the school that they were required to walk, and during the coldest days, even these were transported to protect them from the cold and snow.

Here is a twentieth century institution, dedicated to the education of many successive generations of school children and to the general upbuilding of the community. And it is doing a good job of it. Hereafter if any one should ask: "Can any good thing come out of Timnath?" the appropriate answer will be: "Come and see!"

Ninety Consolidated Schools.

Although the first consolidated school building in Colorado was not dedicated until November, 1912, still in the few years that have passed since that time ninety consolidations and centralizations have been effected. Ninety new and modern consolidated school buildings have replaced nearly three hundred old style and out-of-date school houses built by the pioneers and reminding one of the days of the ox-cart, the spinning wheel, the cradle and the flail.

Thirty-five counties have one or more of these schools and we find them in all sections of the state; north, south, east and west, in the mountains, the valley and on the plains; in high altitudes and in low altitudes; in the irrigated valleys and in the dry farming sections of the great plains, and wherever found they mark the beginning of a new chapter in the education of country children.

Weld is the banner county in the number of consolidated schools, having seventeen. El Paso and Pueblo counties come next with seven or eight each. Rio Grande county leads all others in the extent to which it has gone in the consolidation of its schools. It has already consolidated all of its rural schools except four and has centered its educational interests in four consolidated schools with the exception noted. More than 95 per cent of the children of this county now live in consolidated districts and are transported to and from their homes in fine auto busses to the finest grade and high schools to be found anywhere in the state. Let us call the roll for these four consolidated schools.

The first one established was the Sargent school, in the open country north of Monte Vista. A ten-acre site, a magnificent school house and community center, a separate gymnasium and garage, a superintendent's home with nine rooms, another teacherage with eleven rooms and an eight-room parsonage, together with the school equipment, including ten auto busses,

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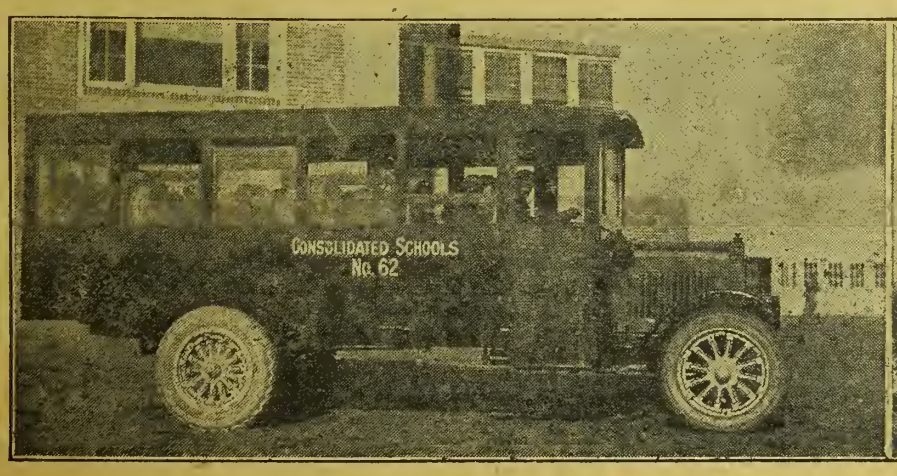

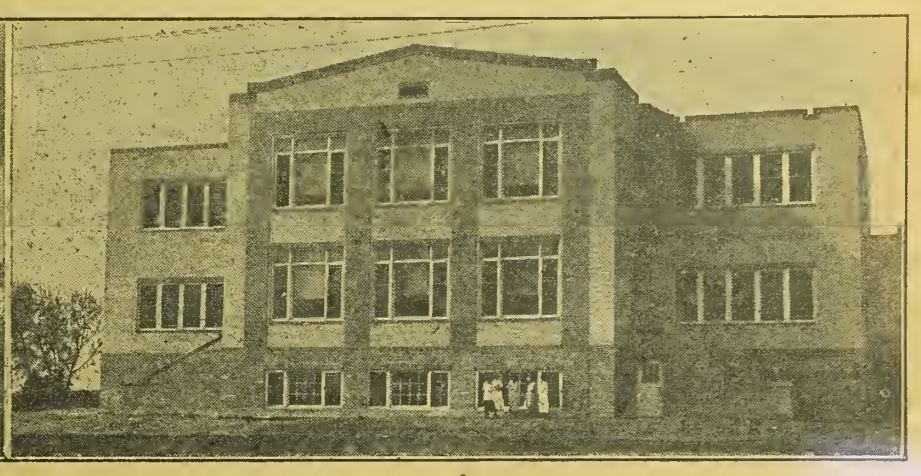

At left: A fine Kissel Car bus, one of the five used by the Timnath district.
At right: The Timnath Consolidated School. Cost of building and equipment, site, garage, busses and domestic science laboratory, $80,000.

Grange Speaks Out on the Japanese Question

THIS AND OTHER PROBLEMS DISCUSSED AT STATE SESSION

STRONG resolutions were adopted by the Colorado State Grange in recent annual session calling upon the Colorado legislature to pass stringent laws to prevent the leasing, buying, or acquiring of land by the Japanese. Discussion of the question at the annual session held in Denver indicated that the Grange has organized the danger that confronts Colorado farmers in a number of sections where Japanese have been leasing lands and farming in their own peculiar way. The resolutions set forth that the states of California, Oregon and Washington expect to drive the Japanese farmers over their borders within the next two years and that such action naturally would cause the Japanese to come to Colorado in greater numbers. "In self protection it behooves us to beat them to it," is the language of the resolution.

It is further set forth that there is no reason why the state should harbor these people, "as they are not loyal to her institutions, they establish unbearable moral conditions and living standards and develop absolutely no new industries or methods, neither do they maintain the natural fertility of the soil."

Many other matters of importance to the Patrons of Husbandry and to the farmers in general were acted upon in the report of the resolutions committee which was composed of L. F. Brammier, O. M. Burks, Harriet L. Bond and W. S. Post. State Master Morris was commended for his strong and courageous stand on the question of the high cost of living. The resolutions embodied the ideas brought out by Master Morris and the Grange emphatically denied charges of profiteering and stated that, "we have been profiteered against on every hand, have had no voice in regard to prices we get for our products and still less in regard to what we have to buy." To quote the resolutions again, "let us do some price fixing ourselves."

The Colorado railroad tunnel commission was commended for its splendid work and special commendation was given to Purchasing Agent Otis Scruggs for his part in the work. The resolutions urge that plans for tunnel building be furthered by initiated bills to be presented at the next general election and that the work include not only the Moffat tunnel but also the Marshall Pass and Cumbres

The schedule of sugar beet prices adopted by the Mountain States Beet Growers' Association was endorsed. This endorsement was based on the conclusion that 11 tons per acre is the average yield of beets and with sugar selling at 13 cents a pound wholesale, the manufacturer gets $200 per acre from beets against the farmer's net of $22 per acre.

Underhanded methods on the part of certain loan companies and certain bankers in seeking to nullify the beneficial features of the federal farm loan act, were strongly condemned.

The Grange went on record as heartily endorsing movements for strict enforcement of national prohibition. Efforts of Senators Kendrick and Kenyon, "to regulate by federal supervision the meat packing industry of America," were heartily commended.

Amendments to the state dairy laws calculated to protect producers and consumers against food frauds and fraudulent testing of cream and milk were urged in the resolutions.

Subordinate granges were urged to co-operate with the federated farm bureaus in constructive agricultural matters.

Passage of the county library bill, which has been pending before the state legislature during several sessions, was urged.

Americanization plans and enforcement of compulsory school laws were heartily approved. It was urged also that the laws be amended so that applicants for citizenship be required to read and write the English language before being admitted.

In his annual address State Master Morris laid particular stress upon the necessity for having as Secretary of Agriculture a man who should be by training, vocation and ideas recognized by American farmers as one of themselves. He urged that self-styled leadership of city farmers, political farmers and near farmers be deposed. He also called attention to the necessity for heavier and more permanent road construction, but pointed out that the farmers do not require boulevards. He uttered a warning to contractors that the farmer was tired of putting up with fraud and extravagance in road building and that hereafter it would be incumbent upon contractors and officials to see that money derived from taxation is put into the highways and not into the pockets of contractors or high salaried officials.

He asked that Colorado Agricultural College erect a small plant for testing sugar beets, so that beet growers could obtain tests from unbiased sources to act as a check upon factory test.

On the subject of taxation he stated that we would never see a time again in Colorado when taxes would be lower but that increases might be expected as the years go on. Such increases would be used for better schools, better highways and other good purposes for which the farmer is willing to pay his share, if the money be well spent.

Many other important problems were touched upon in the state master's address, among them the question of transportation regarding which he urged farmers to be on the lookout and oppose any efforts to increase freight rates. He said that "the farmer pays the freight" and that it is, therefore, up to him to protect his interests.

The election of officers for the State Grange resulted as follows:

Master, John Morris, Golden; overseer, R. J. Altig, Boulder; lecturer, C. W. Swayze, Denver; steward, J. F. Girardo, Aurora; assistant steward, B. U. Sheldon, La Junta; chaplain, Philander Ricketts, Fort Collins; treasurer, K. S. Rhea, Golden; secretary, Rudolph Johnson, Boulder; gatekeeper, J. J. Adams, Capitol Hill station; Ceres, Mrs. S. J. Morris, Golden; Pomona, Mrs. Lena Everett, Edgewater; Flora, Mrs. Ila Westwood, Burlington; lady assistant steward, Mrs. Florence Bullard, Wray; executive committeeman for three years, T. M. Reynolds, Montrose.

First Annual Corn Show Held in Logan County

IMPROVEMENT OF TYPE AND STANDARDIZATION OF VARIETIES

H. A. LINDGREN.

THAT Colorado is rapidly being recognized as a corn producing state, is indicated by the fact that in many counties shows are being held, at which, corn of excellent yielding quality and good type is exhibited. Some of the best of this is being produced on dry land. These shows are not only interesting as exhibitions, but are of tremendous importance in improving the type best suited to the various sections. It is interesting to note that the varieties produced in every section are usually those that have been developed there for a considerable length of time.

The latest corn show held in the state was that of the Logan county farmers at Sterling, January 9 and 10. Although the weather conditions were against a large attendance, some 45 entries of corn were brought in.

The largest number of entries was of a yellow dent bearing no special variety name and which has been developed in the county for several years. The Iowa Silver Mine and calico varieties were also represented. A very good showing of Minnesota No. 13 attracted considerable attention. This has been grown in the county but one year, the seed being brought in from Boulder county. County Agriculturist Morrison stated that Logan county produced 100,000 acres of corn last year, mostly under dry land conditions, with a yield in many cases of 40 to 50 bushels. In view of this there can be no doubt as to the standing of Colorado as a prospective corn producing state.

A variety test was conducted under the direction of County Agriculturist Morrison last year which brought out the fact that Minnesota, No. 13 proved the best in the largest number of tests, both for grain and silage. The Iowa Silver Mine showed up well for forage but did not mature in all cases. The Rustler variety made good results in some cases and matured early. These three varieties are considered best for Logan county conditions of all the varieties tried.

The county agriculturist sent two semples, one of white and the other yellow, of Logan county corn to the grain show held in connection with the International Livestock Show at Chicago in December and won third on each class for the southwestern states division.

Prof. Alvin Kezer of Colorado Agricultural College, judged the exhibits. The awards were as follows:

Ten Ears Yellow—
- First: George R. Mock, Darby.
- Second: R. H. Bruce, Sterling.
- Third: R. H. Bruce, Sterling.
- Fourth: Geo. Kohler, Sterling.
- Fifth: Lippet Bros., Fleming.

Ten Ears White—
- First: Adolph Gregor, Peetz.
- Second: Stanley Mitchell, Iliff.
- Third: Marian Applegate, Crook.
- Fourth: Henry Werth, Peetz.
- Fifth: Robert Wood, Peetz.

Ten Ears Minnesota No. 13—
- First: T. W. Higgins, Padroni.
- Second: T. W. Higgins, Padroni.
- Third: John Grant, Sterling.

Ten Ears Calico—
- Second: P. P. Ballentine, Crooks.

Best Single Ear Any Variety—
- First: Chas. Green, Fleming.
- Second: R. H. Bruce, Sterling.
- Third: T. W. Higgins, Padroni.
- Fourth: L. Linder, Willard.
- Fifth: Geo. Kohler, Sterling.

Sweepstakes on 10-ear sample was awarded Geo. R. Mock. This was a silver cup which is to be held for one year by him.

One point was quite noticeable at the show and that was that the community has not standardized the type of corn they grow. This however will come as more such shows are held and the more successful types determined. Logan county farmers are to be congratulated on their first annual corn show and the fact that they produce so large an acreage of corn. Mr. Morrison stated that the greater part of the corn raised is sent to market outside the county. This condition should be reversed and more livestock grown to consume the corn at larger profit.

One of the interesting features of the show was a judging contest. The farmers took part in this. They placed 20 ears of corn of the yellow and white varieties, making a record of the order in which they were placed. Prof. Kezer then scored the ears and the contestants were scored on their placings. Mr. J. A. August made sixteen points out of a possible 20. His ten-year-old son, Perry, made 14 points out of a possible 20. A neat pendant was the premium given Mr. August.

A farmers' institute was held in connection with the show. Prof. Kezer spoke of the proper methods to employ in the raising of corn. He pointed out the need for each locality to determine the best variety for the section. He emphasized the need for an early maturing corn in most sections of the state, and that the smooth types were usually associated with early maturity which was also more or less true with the shallow kernel.

Mr. C. L. Hover of Longmont, an officer of the Boulder County Farm Bureau, spoke on the farm bureau program covering two main points, namely, "what is the scope of farm bureau work?" and "is there any other organization now in existance that can do the work?" In his discussion of the scope of farm bureau work, he related the history of the movement in Boulder county and showed how the farm bureau program was to encourage well-balanced agriculture and economic production. In answer to the second point in his talk, he brought out that no other existing organization can handle the work in so broad a way as the farm bureau organization under its present policy.

Mr. A. E. McClymonds, extension agronomist of the Colorado Agricultural College, and Prof. C. R. Jones, of the same school, W. F. Heppe of the Colorado Bureau of Markets, and W. G. Jamison, president of the State Farm Bureau, were the other speakers on the program.

The women had a special session under the direction of Miss Susanne Thompson, Home Demonstration Agent for Logan county and Miss Erma Douglass, of Western Farm Life, specialist in Home Demonstration work. Both sessions were well attended, considering the condition of the weather.

This is one of several corn shows that plan on annual exhibitions. With these various community shows a central state corn show should be held. This would enable the county shows to select the best of their exhibits and bring them in for competition with other sections. This would assist greatly in improving the corn grown in the state, by standardization of varieties and discussions regarding methods of growing and utilizing the crop.

A State Corn Show.

In the opinion of the Colorado State Farm Bureau the time has come for the inauguration of a State corn show. This project was one of the things agreed on at the recent session of the bureau as being a legitimate and necessary enterprise. A committee has been named to take the matter under advisement and seek to work out plans for holding the state show in connection with the 1921 National Western Stock show. Some are of the opinion that the corn show should be held separately, but against that contention is the argument that farmers will come from all sections to only one big gathering during the winter at Denver, and that is the Stock show, hence it would be unwise to hold the corn show at any other time. The state fair has been suggested, but that is held before the corn is sufficiently matured. Boulder, Logan, Delta, Otero, Adams and Larimer counties now have county corn shows, and a state round-up of their best exhibits would be desirable and of great educational value in improvement of the crop.

The old saying about two heads being better than one holds good from the show judges point of view when explaining to ringside critics. You will recall a noted Dickens character who was always telling how he wanted to do this and that but could not on account of "my partner, Mr. Jorkins." Many people think that what the old lady said about man children, when she wanted the wood box filled might be applied to judges: "One boy's a boy, two boys are half a boy, and three boys are no boy at all." There are those who like three judges better than two, because in the latter case it is too hard to fix the responsibility. With three, in the event of a difference it takes a pair to decide. In nine cases out of ten whether there be two or three, the one strong man usually has his way and therefore time would be saved by having one strong man in the first place.—The Shorthorn World.

Witch's Island

BY W-T-NICHOLS

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LOUNGING in a cafe in a drowsy West Indian town a health seeking tourist finds himself protected from the wrath of a drunken sailor by an adventurer in white duck who calls the tourist by name: "I might as well be honest with you. The cards couldn't have fallen more to my liking. For I wanted a chance to talk with you—Scott!"

"That's my name, but you have the advantage of me." This from Robert Harden Scott, the tourist. Explanations, comparison of notes and the two are soon on a footing of mutual confidence, the adventurer proving to be Grayson, a forgotten college mate, who has knocked about the world in search of excitement and who has before him the prospect of the greatest adventure of his life if—if his new found friend Scott will advance the capital needed for an expedition of exploration to the wreck of the Zenobia, and will agree to accompany him, to share in the search for a mysterious cargo.

The Zenobia, Grayson explains, was a three-masted yacht; a big boat, close to four hundred tons, seaworthy, owned by a man named Perham, who made long cruises in her, practically lived aboard, solitary chap, not given to taking company along. A year ago he was up the Mediterranean; called at Egyptian ports. Then he returned to American waters showing up at Havana; then sailed supposedly for New York, but never got there. Wrecked? Yes, the Zenobia was wrecked, but in waters where no northbound boat ought to be. There Grayson, taking passage in a little schooner whose skipper was his friend, found the wreck, two dead men aboard and another dying from a broken head.

Little beyond details concerning ownership of the Zenobia was learned from the dying man who soon shuffled off, but Grayson and the skipper made a partial exploration and found—Egyptian mummies in the hold! The skipper could not hold his crew of superstitious negroes after the discovery of the mysterious cargo and Grayson was obliged to return to civilization, to look for a partner. His fortunate meeting with Scott solved the problem and we find them now en route for the island.

We Make Port.

I rubbed my eyes and peered ahead, and then rubbed my eyes again, not as if I questioned the vision they beheld, but merely in the hope of seeing more clearly. For there, dead over our bow, lay the isles among which rested the wreck of the Zenobia. Grayson had promised we should raise them on the third day, and there they were; and the eyes with which I scanned them were the eyes of faith. For in the three days I had come to believe in Grayson and all he told me. At first, though I had made the pact with him, there lingered doubts, but these had vanished, and in their stead was a sort of unreasoned, unreasoning acceptance. Sometimes I had thought him a little touched with madness, but now, if he were mad, I shared his madness. The islands would be there on the third day; among them would be found the hulk; in the forehold would be the cases of the mummies, and in the sand would rest the bodies of the owner and master and steward of the ill-fated yacht, the secret of whose destruction we were to penetrate. Of all these things I was certain long before the lookout raised his cry of "Land ho!" and the tall palms began to lift like slender wands far beyond the slow rise and fall of our bowsprit.

It was our third day at sea, as I have said, in the Pera, the tiniest, craziest, and dirtiest of ancient schooners, leaky of hull and patched of sail. So small was she that her master and owner might have sailed her single-handed; so cramped in cabin that when one man tried to move below decks aft, the others must press back to give him space. There Grayson and I were supposed to berth, the skipper sharing quarters with Jose in a dark recess in the bow, but in those latitudes deck passages were the rule. We lived on deck, ate there, slept there, lounged there; and there I listened to Grayson's talk of the wreck, until the tale had laid upon me a hold almost as potent as it had upon the narrator.

We drew in towards the islands, and they began to take distinct shape. There were five in all, the largest to the north being, as I judged, of an area of several acres, and rising at one end to a height of fifty or sixty feet. The others were much smaller and appeared to be, in fact, coral keys. Two to the eastward were close together, while the third lay due south of the principal island, with the remaining one to the southwest. Thus the group formed a sort of ring hardly more than a quarter-mile in diameter, and offering a harbor more or less protected on all sides. I said as much to Grayson, but he shook his head.

"Fair weather port, Scott, and fair weather only," said he. "No holding ground to speak of, and as full of reefs as a shark's mouth is full of teeth. Even the Pera will have to run for it, if it comes on to blow. Watch me when I take her in, and you'll see the sort of trap that caught the Zenobia."

Landsman though I was, I could understand the skill with which he guided our light-draft craft through a tortuous channel between the two eastern islands. Again and again I caught glimpses of jagged rock rising almost to the surface of the clear water, and more than once my heart came into my mouth as the little schooner, turning on her heel, barely grazed by the ugly ledges. But the breeze was steady, the old boat handy in her own peculiar fashion, and before I realized that the worst of the passage was over, Grayson brought her into the wind, the anchor was dropped, and the skipper and Jose were furling her canvas.

"Clever work, old man!" said I.

Grayson was staring over the rail. "There's what's left of the Zenobia," he told me curtly.

Midway between us and the largest island a broken black line showed the little of the hulk that was still above water. In a way, the sight was disappointing. Such pictures of wrecks as I could recall had usually presented the vessels high on the sands or rolling heavily among huge waves; but there was something which might have been a ledge breaking the surface of a tranquil lake.

"There—there's little left of her," said I; and doubtless there was disappointment in the tone, for Grayson spoke sharply:

"There's still her undiscovered secret. And the less of her that remains in sight, the smaller the chance that we'll find somebody has been before us. But we'll have a closer look."

The diminutive yawl of the Pera was dropped overboard, and Grayson took the oars, nodding me to the stern sheets. He rowed across the narrow space dividing us from the wreck, and laid the boat across her bow, from which point of vantage the eye could sweep the hulk.

As she lay, the Zenobia's deck was practically awash, the bow being in somewhat deeper water than the stern. Where the after house had been she showed perhaps a couple of feet of the side, but her forecastle, in spite of a sharp spring in her build, was under rather than above the water. Amidships the water was several inches deep on the deck. Of the three masts nothing remained but stumps, jagged and blackened, as were such parts of the bulwarks as still stood.

"She's settled since I saw her last," Grayson observed critically. "Slipped forward. Maybe she's caught the tail end of a blow."

"But it looks to me as she'd been on fire," I suggested.

"Right!" said he. "She'll have had visitors off and on, and they'll mostly have had the low-down human fancy for needless destruction. She's stripped bare as a bone above decks, and somebody who wasn't satisfied with the yield of loot has tried to burn her. Not that it matters—for our purposes. It merely goes to show the primitive notions of the folk of these regions."

"I hope none of them happens along to interfere with us," said I.

He dipped an oar, and the yawl glided nearer the wreck. "I'm with you in the hope, Scott. Of course, though, that's one of the inevitable chances of the game, but the Zenobia's sure bad medicine among the sea-cattle of these parts. You see, with a cargo of dead men aboard—that was the essential feature of the mummies to impress upon 'em and I impressed it deep enough, believe me—with dead men for freight, I say, and ghostly voices sounding in the forehold—why, desire for reallly close acquaintance with the Zenobia is what you might call an acquired taste."

"I can believe that" said I with a shiver, for on closer view there surely was something uncannily ominous in the picture of destruction and desolation presented. Grayson hooked on to the yacht's side well forward, and we scrambled on board, perching for a moment on what had been the heel of the bowsprit. There we had a new and even more revealing view of the havoc wrought by the elements and the wreckers. A few stanchions marked where the bridges had been; one could still trace the lines of the chartroom which had been beneath it, though here the fire had made thorough work; the after house, too, was gone, as has been said, and from one to the other the ship had been stripped of rigging, deck fittings, and equipment.

The forehatch cover was missing, and within the combing the water now rose to within a few inches of the top. There was no trace of the mummy case which the discoverers had hoisted to the deck; but Grayson reported after a hasty inspection of the depths that none of the other cases appeared to have been removed.

"So far, so good," was his conclusion. "At least, it looks that way. There'll have to be a diving job done, though, before we can be sure."

"The man-of-war may have been inquisitive," I suggested.

"Hardly to the extent of exploring the hold. The diving wouldn't be a cinch. Besides, a boat like this wouldn't be expected to carry a cargo. The navy men would be satisfied with the evident facts of the case, and let it go at that—report of the wreck and loss of crew verified, you know."

It seemed to be a reasonable opinion, and having thus disposed of the matter, we wasted no time in further conjectures. There was, indeed, too much work to do, and none too many to do it.

Scanty as our equipment was for the task before us, ferrying it from the Pera to the Zenobia was a slow and tedious business. Then came a trip to the largest island, on which I was bidden to accompany Grayson.

"We might as well live ashore," he explained. "I'm not finicky or overly fastidious, but I make it a point to keep out of cockroach paradises, so far as possible. Besides, if it should breeze up, the schooner might have to seek elbow-room. So, altogether, I'm for establishing headquarters on dry land, or what will be comparatively dry."

"Then you look for bad weather?" I queried.

He shrugged his shoulders. "This isn't the hurricane season, but a very moderate gale might cook our goose. Ordinarily, you can count on the trades holding reasonably steady." He paused an instant, cocking an eye to windward. "Still, the old saw holds—about the wind blowing where it listeth, you know—even when you're dealing with the trades. I've seen it whip about—Lord, though, there's no profit in going into that sort of thing. We're making the gamble, and we can't make the conditions. We've got to take 'em as they come."

The bow of the yawl grated on the sandy beach of a little cove, and Grayson, hopping into the shallows, drew her farther in. I stepped ashore, dry shod.

"Well," I said. "What do you call this place? It'll have a name, of course?"

"Several," he answered, smiling oddly. "Oh, yes, it has names enough and to spare among the natives. There's a common underlying idea for all of them, and—well, it isn't a cheerful idea, either. As for me, I am content with perhaps the pleasantest of the lot."

"And what may that be?" said I.

"Witch's Island," said he, and led the way up the sloping shore.

CHAPTER IV.

Witch's Island.

At first glimpse the island hardly deserved the title Grayson had given it. Here, seemingly, was a little patch of commonplace tropic earth, as like a hundred other islets of the Caribbean as one pea is like its neighbor in the pod. The beach was white and glistening in the sun; the interior was wooded; the undergrowth appeared to be neither denser nor thinner than was the rule with most of the islands I had visited. There were no signs of human habitation near the beach, but a half-obliterated path led inland. Grayson took it, and I followed close at his heels. For perhaps a hundred yards we advanced, the ground rising gradually. Then the path swerved to the left. My guide stepped aside, and pointed to an open space.

"The heart of Witch's Island," he said.

A tiny stream, flowing from a hidden spring, spread into a pool a couple of yards in diameter and several inches in depth. On one side of the clearing stood a rough shack, crude but stoutly built, and about it the brush formed an encircling ring of verdure.

"The metropolis of the kingdom," quoth Grayson. "The capital and the capitol. The best and only hotel, and always open for the wayfarer. No need of the protruding latchstring here, old man."

"Precisely!" said I, and stepping to the doorway peered within. There was little to see—sagging roof, with many cracks through which the light poured; crazy walls, out of plumb and yawning widely in places; a dirt floor; a little pile of empty tins in one corner; a broken bottle or two; a rough bench opposite the entrance.

"A house, but a house out of commission," I commented.

"Its normal condition," Grayson told me. "It has been like this, more or less, ever since I've had knowledge of it. Who built it? I don't know. Some castaway? Perhaps. As likely, though, it was somebody playing settler. If it was, the fellow soon had enough of the bower. There's a bad luck reputation hovering about, you know."

"Why?"

He smiled his curious smile. "Honestly, I am as much in the dark as you are. They tell a dozen tales, but all of one sort. Things happen here, and happen weirdly. That helped me, by the way, when I was striving to point out the folly of focling with the freight of the Zenobia. All the island skippers and their crews have heard the yarns, and believe 'em implicitly. They put in now and then for water, and of course they've their eyes open for anything that may have piled up on the reefs—that's part of their regular trade—but as for staying here—ashore, you understand—why, that's out of their calculations. As for the squatters—well, it's my notion that game has been tried more than once. A man could scrape a good living, good, that is, as things go down this way, with no trouble, but whoever may have tried it has been gladto quit the job. That's the tradition, I can't call it the record. I dare say it's close enough to the facts."

(Turn to Page 26.)

Farm Bureau Work in Wyoming

WHAT PLATTE COUNTY FARMERS ARE DOING.

WALTER C. HAWES.

Mixing poisoned grain for prairie dogs in Platte county, Wyoming.

COOPERATIVE effort among farmers for business and social purposes as well seems to be an almost-realized ideal in at least one county of Wyoming, if the successful organization meeting held at Wheatland recently may be taken as indicative of future results.

Projects relating to almost every aspect of farm life have been planned by the different Platte county community bureaus for the coming year, and the preliminary work is already begun under the direction of well-selected project leaders. Principal emphasis is being placed on child welfare work, silage production as a basis for improvement of dairy stock, poultry improvement, good roads, and cooperative marketing. The child welfare work under the direction of County Demonstrator Laura I. Winter is already a well established project, 229 rural school children being enrolled in the movement.

A project for corn production and silo building, with the ultimate idea of importing improved strains of dairy stock, has also received county-wide sanction. The leaders of this movement are given the responsibility of determining the best varieties of corn for this locality. Increased corn acreage and better attention for the crop are also to be encouraged in every way possible. Silo excursions are planned for trips to farms where silage has been fed with success. Farmers who wish to build are to be divided into groups, which will cooperate in the construction work. These same groups are to own jointly the cutters, binders, planters and other machinery necessary to handle the crop, and they will also cooperate in putting the corn in the silo.

Local bankers have manifested a willingness to furnish credits for the purchase of improved dairy stock to anyone who can show sufficient feed and equipment to carry them properly. As soon as the season is advanced to the point where the amount of feed available can be determined, the project leaders will check up on the various bureau members and submit their findings to the banks. As soon as the amount of backing available is apparent, as much improved dairy stock as possible will be bought with the assistance of County Agricultural Agent Burckhalter.

As the end of the open range has come in many parts of the county, the question of pasture improvement is coming to be a vital one in relation to the dairy movement. The farm bureau is devoting some attention to this matter. A committee has been appointed to investigate the suitability of different pasture mixtures, and if possible several cooperators are to be found who will test out these combinations. Later reports will be made on these experiments which should be of value in determining a suitable pasture policy for this region.

The community bureaus have appointed marketing agents who are to list the wants and the marketable products of their respective communities. These agents will keep in touch with each other and facilitate advantageous exchanges ober the county. At a later date a county marketing organization will probably be effected to handle cooperative marketing operations on a considerable scale.

This organization is due primarily to intensive effort on the part of Messrs. Geo. Burckhalter, Thomas O'Hara and Mrs. Laura I. Winter, of the county extension force. Several hard-working organizations have been in operation over the county during the past year and a number more are now in course of formation. The county organization had a representative attendance of over thirty delegates from all parts of the district, in spite of the fact that the meeting date coincided with one of the worst storms ever known here. At the morning business session the following were selected as county leaders for 1920: President, C. J. Hauf; vice-president, Mrs. Nannie K. Clark; secretary, H. T. Fish; treasurer, Osgood Johnson.

A most interesting session was also held in the afternoon, at which the general public were welcomed. Addresses were made by F. P. Lane, state leader of county agents; Miss Mary Rokahr, state leader of county demonstrators; Earle G. Reed, agriculturist for the Burlington and Colorado & Southern Railways, and H. S. Kirk, president of the Goshen county farm bureau.

Building a pit silo in Platte county, Wyoming.

Shorthorn Breeders Organize.

Shorthorn breeders of Minidoka and Cassia counties, Idaho, at a recent meeting in the Cassia county Farm Bureau office at Burley, organized the Minidoka-Cassia Shorthorn Breeders' association. Dean Sullivan of the firm of Frank Sullivan & Sons, Rupert, was elected president; Chas. Uhlig, Churchill, vice president; Leon Gillette, Burley, secretary and treasurer; Grover Rich, Burley, and T. S. Eastwood, Rupert, directors. Rich Brothers, of Burley, recently took into the Minidoka project 70 head of Scotch and Scotch topped Shorthorns. Sullivan Brothers in the last year have imported three cars of Shorthorns from eastern states. The plans of the association are to develop further the calf clubs, to encourage importation of Shorthorns to induce the raising of better individual animals and to do everything in a community way that will benefit the Shorthorn breed and breeders of the two counties.

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Control of the Alfalfa Weevil

EXPERIMENTS HAVE DEVELOPED EFFECTIVE METHODS.

CLAUDE L. WAKELAND.

ARTICLE II.

SOON after the discovery of the alfalfa weevil in the United States, experimental control work was undertaken by the government and the State of Utah. These experiments have been extensive, varied and continued over a period of many years. Some of the chief experiments have been: Pasturing; cutting the first crop and burning it in the field; brush dragging the field after the removal of the first crop; collecting weevils by means of gathering machines; burning the field over with gasoline torches; spring cultivation; introduction of parasites; spraying. Under general conditions only spring cultivation, introduction of of parasites and spraying have proven practical methods of control.

Brush Drag.

Under special and limited conditions the use of the brush drag may be of benefit and is advocated quite strongly by the state of Utah. If conditions are favorable a dust mulch may be created by use of the brush drag immediately after the removal of the first crop. Many weevils are killed directly by this treatment. Those remaining alive are forced to crawl about in search of food and a large percentage is killed by the heat and dust. A dry field is necessary in order that brush dragging be a success and this requisite is not within the control of man. Brush dragging if thoroughly done is an expensive process and at best cannot prevent injury to the first crop of alfalfa.

Spring Cultivation.

Early spring cultivation, by covering them up, may kill a small number of weevil eggs laid within dead grass stems but the greatest benefit derived from such cultivation is its stimulating effect upon the growth of the alfalfa. A field thoroughly cultivated and subsequently properly irrigated will produce more abundantly and the crop will mature earlier. Early maturity of the first crop is of vital importance in securing a yield when the attack of larvae in June make early cutting necessary. The spring tooth harrow is a good implement to use. Thoroughness is necessary, which means setting the harrow teeth deeply and having sufficient horsepower.

Parasites.

Through efforts of the Bureau of Entomology, U. S. Department of Agriculture, a number of different kinds of parasites were brought from their native home in Europe and liberated in Utah. Of these, only one, a small ichneumon fly (Bathyplectes curculionis), is known to have become established. It has increased and spread rapidly in that state and is very active in destroying weevil larvae. The State Department of Entomology has secured a number of the parasites from the Bureau of Entomology which have been liberated in the weevil infested portion of this state and have become well established.

The parasite passes the winter in the pupal stage emerging in the spring at about the time the earliest weevil eggs are hatching. It "stings" a weevil larva, laying an egg within its body but does not cause its death until after it (the weevil larva) reaches maturity, and spins its cocoon. These natural enemies will undoubtedly be an important factor in helping control the weevil but their work can be considered only as an aid to man's own effort to protect his crop. They increase rapidly and spread great distances and it is probable that any dissemination of the weevil that occurs naturally will be accompanied by these parasites.

Spraying.

Without doubt spraying to control the alfalfa weevil is the most practical and economical method which has yet been discovered. For many years the Bureau of Entomology has been conducting spray experiments in Utah and the results have, on the whole been good. Spray experiments in Colorado have been based largely upon the pioneer work done by the Bureau of Entomology before the weevil was known to exist in this state. By its co-operation and generosity the Bureau has made it possible for Colorado to avoid much unnecessary and fruitless experimentation.

For two years the State Department of Entomology has been carrying on a series of spray experiments in weevil infested fields in Delta county. The original plan, which has been adhered to as closely as weather and irrigation conditions would permit, was to make spray applications at stated intervals during the period of growth of the first crop and to test the effect of poison on the weevil when applied to the second crop. Fields were divided into plots, one of which in each field was left unsprayed to serve as a check. In no instance was a plot sprayed more than once during a single season. Results of experiments the first year were verified quite closely by those of the succeeding year.

The poison materials used have been various standard brands of arsenical compounds. Zinc arsenite has been used most extensively, two pounds of the powder to each 100 gallons of water appearing to be an effective strength.

Spray application is made by a common orchard power sprayer to which an attachment is added. This attachment is simple, of low cost, can be constructed by any man and can be readily adapted to use with any type of spray machine. By its use the spray mist is made to cover a width of twenty feet and is applied as fast as a team can pull the machine steadily and continuously. Under ordinary working conditions an acre of alfalfa is sprayed in about thirty minutes.

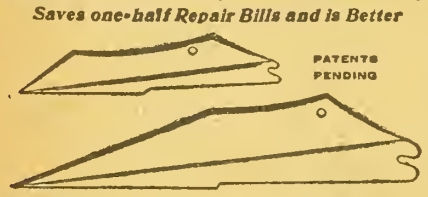
What Experiments Show.

Results of experiments lead to the belief that one spray applied to the first crop at the critical time is capable of controlling the weevil on all crops for the season. When applied at the best time the destructive ravages of the larvae on the first crop are checked and the numbers so greatly reduced that the second crop starts growth immediately upon the removal of the first cutting. The contrast between a sprayed and an unsprayed plot in a heavily infested field is marked and reminds one of certain parts of our state where he has but to stand on the bank of an irrigation canal to feast his eyes upon a veritable garden of beauty, or have them blurred by a barren waste, according to the direction of his gaze.

It appears that sprays applied to the stubble after the removal of the first crop are not practical. At that time weevil larvae are protected so that a heavy drenching of liquid would be required to reach them, there is little or no foliage to hold the poison and an application at this time affords no protection to the first crop.

Poison is applied so lightly that sprayed hay is not rendered unfit for feeding. Chemical analyses and feeding tests extending over two years are the basis for this assertion.

At first thought the farmer is likely to reject even the suggestion of spraying of alfalfa. When he understands the practicability of spraying, the economy of operation and the gain to be derived he will be more tolerant in his views. Should the weevil become a direct menace to him and he sees his crop being surely destroyed he will unhesitatingly resort to spraying unless some more effective method of controlling the weevil is discovered. It must be remembered that alfalfa hay will continue to be produced in spite of the weevil. If it costs more and requires better farming to produce it the careless farmer will be the loser and he will turn his attention to the production of other crops. The careful farmer who tries intelligently to combat the pest will succeed. His will be the reward, for decrease in production will mean an advance in the unit price of hay.



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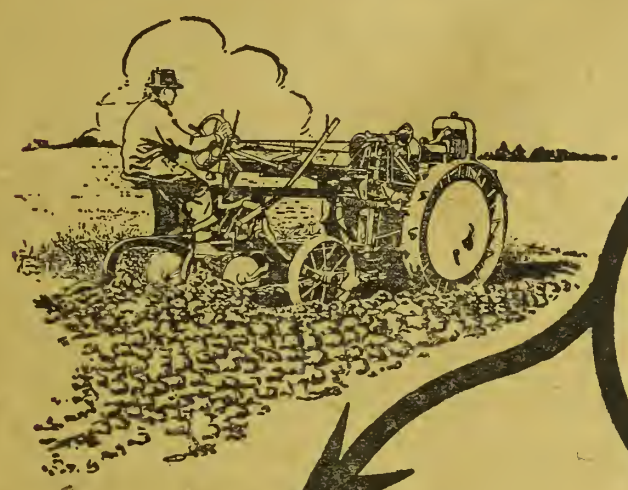

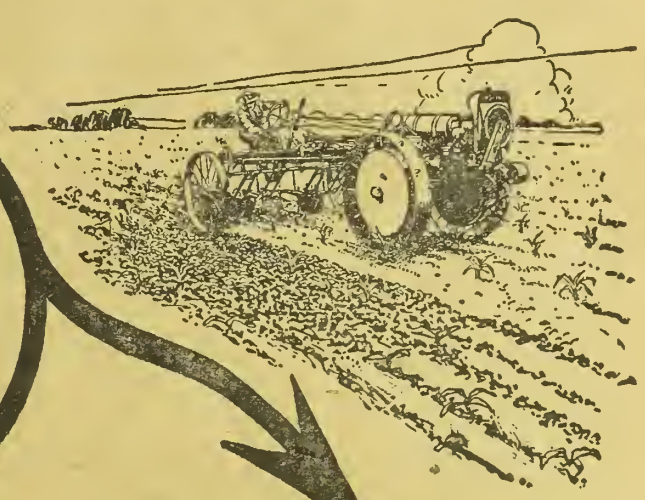

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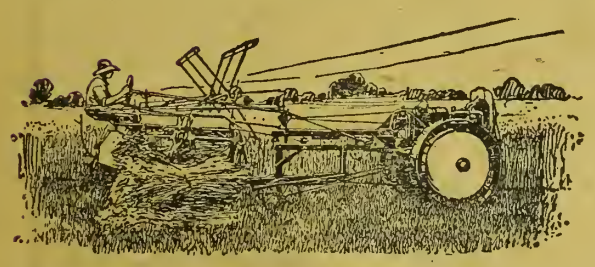

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The Japanese Question.

The Colorado State Grange has brought to the attention of the public the serious question of Japanese farm tenancy and ownership in Colorado. People of this race have come into the state in increasing numbers during the last five years. At first only men came, but lately the women have followed, and now there are Japanese children in considerable numbers being added to our school population in certain districts. There is here no question of racial animosity, but one of economics, one of competition between a farmer living according to the meager standards of the Orient, and the American farmer whose standards are high and whose ideals differ from those of the oriental as does the day from the night. There can be no fair competition between two races that live on different planes. They should not be forced to live side by side.

California has attempted to deal with the question of Japanese land ownership, in a forceful way, but the question is still in abeyance; sidetracked somewhere in a diplomatic pigeonhole. Land ownership is, moreover, not the whole question. In Colorado the Japanese is a tenant. His methods are declared to be ruthless and regardless of soil fertility. He is not readily assimilable, in fact, seems to evince no desire for citizenship, or anything else save to make as much money out of rented land as possible.

This nation is passing through a bitter experience as a result of leaving the doors wide open to the undesirable immigrant from European countries; the illiterate, the unfit, the ungovernable. While we are wasting words at Washington about the closing of the eastern gateway, are we to leave our western shores open to the continued influx of the oriental, whose civilization has far less fellowship with American ideals than that of the southern European? The question demands the broadest vision of statesmanship, a clear view of what the America of today IS and what we desire to be as a nation in the future.

We cannot live elbow to elbow with all the races and peoples of the earth. We realize now the folly of expecting the melting pot to level all distinctions and standards. We know now that democracy means one thing to the Anglo-Saxon, and another to the Teuton or the Slav, and that it has no meaning at all to the average Mongol. What are we going to do about it? That is the question raised by the Colorado State Grange which we dare not dodge.

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Who Helps Farmer Most?

What extension agency helps the farmer most? Is it the county agent and the farm bureau? Is it the agricultural paper? Is it the bulletin service of the Department of Agriculture or the state colleges? Or does he get most help from general farm organizations? These questions were put to 2,300 farmers by the Department of Agriculture and a summary of the answers disclosed some interesting results favorable to both the county agent work and to the farm press. The county agent is closest to the farmer in point of contact and if he is efficient can render him the greatest service. Next in order should be the farm press, and the answers indicate that the press fills its place well as an educational and service agency.

Thirty-eight per cent said they received most help from the county agent and the farm bureau. The agricultural press was given first place by 31 per cent. Only three per cent of the 2,300 farmers interviewed said they received most help from farmers' organizations other than the farm bureau, and 3 per cent said they received most help from bulletins and agricultural reports. Twenty-two per cent had no definite opinion as to which agency was most helpful to them.

These opinions were gathered by officials of the States Relations Service in a number of northern and western states. The purpose of the survey was to get the viewpoint of the farmers themselves as to the relative efficiency of various phases of agricultural extension work and to learn the outstanding problems of rural districts as viewed by the farmers of those districts.

An indication of the efficiency of farm bureau work is found by contrasting the replies in states where the farm bureau is organized and in those where it is not. In the former, 66 per cent of the farmers interviewed placed the county agent and farm bureau first among the agencies that are of service to them, and only 13 per cent placed the agricultural press first. In states that have no farm bureaus, 26 per cent placed the county agent first, and 39 per cent placed the agricultural press first.

One of the questions asked was: "What is the biggest problem of farmers in your community today?" The farmers who answered this question were divided as follows: Labor, 682; improved farm practices, 637; marketing, 309; better organization of farmers, 55; financial assistance, 21; roads, 14; repeal of the daylight saving law, 9; schools, 1.

Of the farmers visited, two out of every three were acquainted with the county agent and his work, and 90 per cent of them were favorable to it. One farmer out of every three was receiving the bulletins of the United States Department of Agriculture, and two out of every five the bulletins of the state college of agriculture. Four farm families out of every five were taking both a daily and an agricultural paper, and one out of every two a magazine, usually a woman's magazine. One farmer in every three visited was a member of the farm bureau and one of every four was a member of some other organization.

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The New Cabinet Member.

The agricultural interests of the nation approve the action of President Wilson in naming Mr. E. T. Meredith to succeed Mr. Houston as Secretary of Agriculture. The new Secretary has earned a place in the cabinet by many years of untiring effort in behalf of agriculture. As publisher of Successful Farming, one of the most influential farm journals of America, Mr. Meredith has been in position to sense the desires of the farm people and aid them in bringing about a better recognition on the part of the general public, of the part the farmer plays in keeping the world moving. His counsel was valuable to the President during the war emergency, and no doubt the honor is in recognition of services unselfishly performed during those days of stress, plus the knowledge gained by the President of Mr. Meredith's standing in the agricultural world. Mr. Houston becomes Secretary of the Treasury to succeed Carter Glass, whose election to the United States Senate was the occasion for the cabinet changes.

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Stock Show Comment.

Comment on the main features of the National Western Stock Show appears in this issue, together with full reports on the auction sales of breeding stock. Complete awards in all classes of breeding cattle, horses, sheep and swine will be published in the February 15 number. Readers are urged to preserve these two issues, as they will contain information which is published in no other journal in such a comprehensive way. Every possible effort has been made for accuracy, both in names and placings.

The importance of the show to the livestock industry of the west cannot be overestimated. It has added millions of dollars to the assets of farmers and rangemen in these mountain states by teaching the value of producing from purebred ancestry the type that means economy and profit to breeder and feeder. A history of each successive show appears in the columns of Western Farm Life and this history is worth preserving as a guide to the farmer who may wish to invest in better stock and to the breeder who is directly interested in the competition. Therefore again the hint—put this and the next issue of the magazine away where you can lay your hands on it when you need it as an aid to buying livestock, or as a work of reference on the west's great exhibition.

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THE AGENT'S WEEK.

His Life is Joy, His Years Are Play,
His Week a Happy Roundelay.

THE COUNTY Agent's life is joy,
His year is filled with play,
His months are fun without alloy,
His weeks a happy roundelay—
But just to keep himself in trim
He works a bit each day.

MONDAY he tells what plans are good
To make a fertile farm;
He tries to make it understood
What keeps the crops from harm;
He holds three meetings in the fields—
But finds life all a charm.

TUESDAY he helped to drain a field,
Showed where the tiles are led;
Gave suggestions for increased yield
And told how stock is fed;
Organized a breeding club—
But spent some time in bed.

WEDNESDAY he brought a specialist
To help a man with sheep;
Got figures for a census list;
Arranged to purchase cheap
A lot of lime in carload lots—
But got a chance to sleep.

THURSDAY he gave some blueprints out
For a barn from ridge to floor;
Showed how to ring a porker's snout
And how to keep a score
Of points in judging purebred stock—
Then slept a little more.

FRIDAY he helped to spray some trees;
He told which spuds are best;
He showed the way to hive some bees,
And how to kill a pest,
He warned against three wildcat schemes—
But got a bit of rest.

SATURDAY, like the rest of the week,
He made an early call;
He planned the use of a rapid creek
For power from its fall
To light farm homes for miles around—
But did no work at all.

SUNDAY he washed the flivver clean,
Then sat within his pew,
Thankful that on this day serene
He'd rest, like me and you—
Except to write reports and such
He had no work to do!
—Bristow Adams in New York Extension Service News.

Champion Ear Sells for $13.00

"The champion ear of corn, meaning the one picked out by the judge as being the best of the show, sold to J. D. Long Seed Co., of Boulder, for $13.00. It was a Minn. No. 13 ear from the ten-ear exhibit of Bernard Buster. This is probably the highest price ever paid in Colorado for one ear of corn."—Farmers' Exchange Bulletin.

Colorado's Agricultural Land.

Reports of county assessors for 1919, as tabulated by the Colorado Immigration Department, show that 26,620,094 acres, or 40.13 per cent of the total area of the state, is assessed as agricultural land. This includes a very large area that has never been broken and much that will never be broken, being valuable only for grazing purposes. It includes more than 10,000,000 acres classed as "dry farming" land, most of which ultimately will be cultivated. Reports of county assessors made to the Immigration Department in 1919 showed that there was approximately 5,500,000 acres in cultivation last year, the largest ever cultivated in one year. These figures give a fair idea of the possibilities for agricultural development in the state.

Learn This By Heart.

In the shade of the old apple tree
Where the snow and the rain blow so free,
Is no place to store
The binder and mower
And implements there that you see;
For the rust and the rot you'll agree,
Are worse than hard usage would be,
And the paint that they wore
Is a shade, nothing more—
Just the shade of the old apple tree.

The Branding Iron

The American farmer wants the right to collective bargaining, but he is unalterably opposed to the closed shop, as un-American in principle. This is the declaration of Newton C. Dougherty of Weld county, made before the Denver Civic and Commercial association, on a recent occasion. This sentiment will find echo among farmers everywhere. Why should not the farmer have a legal right to sell his product at his own instead of the other fellow's price?

* * *

The Colorado State Grange has gone on record as favoring construction, with state backing, of three public transportation enterprises, the tunnels through James peak, Marshall pass and Cumbres pass. It is a favorable sign when the membership of such an organization, called together from all parts of the state, can agree on a question from the broad standpoint of "the greatest good to the greatest number." This is the spirit we need in order to build the tunnels and provide better transportation to remote sections that are held back in their development by natural barriers.

* * *

Visitors to the National Western Stock show were, as usual, reminded of that fact that although Denver is always "pointing with pride" to a beautiful civic center, many miles of fine boulevards, acres and acres of mountain parks and city parks, its transportation line to the stock show arena and the yards is comparable only to the sinuous and snail-like course followed by the D. & R. G. in spanning the distance between Alamosa and Durango. Why does not Denver wake up to the fact that the stock show brings many thousands of home folks to town who deserve as good tramway service as her summer tourist friends?

* * *

Eggs for hatching laid by prize-winning fowls at the stock show sold at $20 a dozen; heifer calves for breeding sold at $1,000; some bulls as high as $7,500. One breeder sold a bull that has 351 living calves and 91 cows in calf to him. It isn't hard to see the value of an investment in purebred stock on that basis, although the scrubs used to be just about as prolific. It's quality that counts, and nowhere more than in the livestock game.

* * *

Not long ago at a Chicago sale an Iowa breeder paid $35,000 for a Poland China boar, establishing a new world's record for prices on swine. And still some people are foolish enough to believe that a man can go to farming without capital!

* * *

Without previous planning or announcement General Pershing, on his recent western trip, made a stop at Strasburg, Colo., and the folks have been wondering ever since how he came to do it. Doubtless the name of the place had a familiar ring and he had a natural curiosity to see what the American Strasburg looked like. He found it a live burg.

* * *

Whale meat has been officiallly classified as fish and not meat. Since the only man who really had inside information on the subject has been dead a long time the question has been the subject of considerable controversy; therefore the decision of the tariff appraisers is welcome.

* * *

The total value of farm products of the country for 1919 is estimated at $24,982,000,000. If that figure doesn't seem right, add another string of noughts; nobody'll know the difference. When you get beyond nine figures Branding Iron gets dizzy.

"feb. 20"

If the label on your magazine reads "feb. 20" your subscription expires this month. You, no doubt, intend to renew. By doing so at once you not only extend us a big favor, but will make sure that you will not miss a single issue of Western Farm Life.

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WESTEN FARM LIFE,
Denver, Colo.

Comment by Farmer Putnam

OUR MISSOURI FRIEND HAS A FINE TIME AT THE NATIONAL WESTERN STOCK SHOW.

WHAT a week I been a havin'! I was to the Stock Show and as luck would have it Josephine couldn't go. She's been ailin' a little this winter. It ain't nothin' serious—just ordinary complaints enough to furnish a little gossip but not enough to call a doctor. Anyhow she couldn't go so I had to come alone. She sez when I left the ranch, "Now, Tom, do behave; don't act the fool. My I'm so glad Denver's dry now," and a lot more of them kind of remarks. I wonder where she got the notion that Denver was dry! Well, what she don't know won't hurt her. I reckon I'll take her along next Stock show; two kin live cheaper then one in Denver, if the one is a foolish spender. This week set me back about a ton of alfalfa—and hay's tolerable high now. I was a-countin' on gittin' in free because I've knowed Fred Johnson so long. Right thar I made a miscalculation. I went up to Fred's office and sez:

"Howdy Mr. Johnson, I'm here ag'in."

"So I see. Glad of it. We need the money."

"Well," I sez, "don't I git a badge to pass me in?"

"No, everybody pays, even the exhibitors."

"Well, couldn't I go in as a exhibit?"

"No, the entries in the jack classes closed three weeks ago."

Seein' that I couldn't git no pass I went downtown ag'in and got two blankets, paid my room rent at the lodgin' house and then paid my way in to the gate Tuesday a. m. and I seen the show without ever spendin' another cent fur tickets. One night I slept in the Hereford barn, the next in with the Holsteins and the next with the Shorthorns. I had a nice bundle of straw for a pillow. Durin' the day I mixed around with them stockmen. I enjoyed it but about the third day I run awful short of things to say about the cattle, because you got to say more or less the same thing about all of 'em and it gits stale. A feller sizes up one of them bull classes in the areny and sez:

"Now look at that smooth youngster. He's a low-down, thick set individual of beautiful conformation'"—that's about the way it runs on, everybody a-boostin' everybody else's cattle. That keeps on till the sales begin and then the dollars and cents tells the story.

I was a standin' around in the areny when a big red faced feller come up and we got to talkin'. I sized him up for a hossman, because he was watchin' the judgin' in the draft hoss classes and I sez:

"Well, it's a great show."

The remark was so original that he looked at me and grinned and sez: "Now you've said a mouthful neighbor. My name's Allen. I started this show sixteen years ago."

"Then you're the famous B. Allen?" sez I.

"That's me," sez he, a wipin' his brow with a red bandana. "What do you think of my show?"

"Well," sez I, "I don't know what to compare it to; it's so big. I reckon old Noah in the Ark might a had more animals, but he couldn't a beat this fur quality."

That kind-a tickled Mr. Allen and he sez:

"Where was this show held you speak of, and when?"

"Oh, it was long ago, over in Syria."

"Oh, one of them European countries; well I don't know much about them foreign shows, but they gotta go some to beat the Western."

Just then up comes my old friend Charley Weeks from Hays, Kansas. He runs the Kansas State Livestock experiment farm, but it's different from them other experiment farms. Them kind of government farms usually has little patches of 57 kinds of grains a growin' fur 5 years to find out which kind is the poorest, but Mr. Weeks has got a real stock farm and he's carryin' 1,600 head of beef stuff this winter. He's got a system fur beatin' the Western Kansas drouth and it's got to be good to beat that, because they is only one place drier then western Kansas in a dry year and that's Topeky, the year round.

I just kept a-bumpin' into old timers every minut. Nuthin' done me so much good—I hope—as seein' all them folks from the Divide—Charley Melburn, Mr. Evans, Mr. Gleason, Allen Carnahan, Clint Whittier from Cherry, Spud Steppler from Monument, the Cornforths, the Joneses, shucks I couldn't remember 'em all. I was shakin' hands every minut with somebody and when me and Lindgren went to the chuck house who should we meet but Will Paul and the Mrs. I was sure glad to see 'em. You know they sold their ranch up to Eastonville last fall and traveled around in Kansas, Missouri and Illinois a while and now they are livin' in the Springs along with the millionaires and retired farmers. A fine idee struck me when I seen 'em and I ast Will and Mrs. Paul to come over to our table. What do they do but come, and what do I do but ask the waiter to give me the checks fur all of us. Well I wish you could-a seen the look of surprise on Will Paul's face. He was thunderstruck. He'd been used to feedin' me and he thought he was in fur it ag'in, but I showed him that when they come to Denver he and Mrs. Paul was my guests and I ast both of 'em to have another "hot dog" with us. So's they won't be no misunderstandin' I want to say right here that if the Pauls go back to ranchin' in El Paso county I'll be open to dinner engagements ag'in next summer, (chicken preferred).

I told Mr. Paul about it and he sez: "We'll certainly try to accommodate you. I believe in increasin' the consumption of poultry and I don't know how we'd git a bigger per capita increase then by invitin' you to eat chicken with us."

I thanked him fur the compliment.

Well I went on makin' the rounds and I met Harry Youngerman and sez, "You got a great show this year Harry."

"Yes," he sez, "that's what some other fellow told me a while ago, in them very same words. They all say it's great, but to me it looks like a lot of hard work. I cain't enjoy the scenery like you loafers that write about it. I wisht I didn't have nuthin' to do but shake hands with people, make a few marks in a note book now and then and draw pay fur it. You fellers has gota snap."

I reckon Harry does have to work hard, but it's worth it when the public is pleased. I only heard one kick on the show and it was from a Denver woman. She was sayin' to her friends: "Well now this show's a fraud. I hain't seen nothin' but cows, sheep, pigs and chickens. Where's the dog show? Sue told me they had some fine Boston bulls out here."

"I didn't say Boston bulls, I said Hereford bulls," sez Sue.

"Well Hereford bulls then, show me the bull pups, I just love dogs."

I kept right on goin' the rounds and up in the industrial building I seen my old friend Mr. Liebers. I hain't run acrost him since last spring in the good old days when Cheyenne was still the gay capital of Wyoming. (We went up on business.) Now it's nuthing but the junction between the U. P and the C. & S.

Liebers was in his milkin' machine booth and I got him to tell me all about it. It's a wonderful machine. He explained it all to me, sayin': "The farmer that buys one of our machines kin take life easy. He don't need to go near the barn at milkin' time. It's a self adjustin' milker with automatic calling device, set on a combination time lock like a bank safe. Inside of this little brass plate is a jigger that moves forward a sixteenth of an inch at whatever hour it's set for milking. It releases the phonograph needle and starts the calling disk to revolving. The disk is inscribed with the names of the owner's cows. We have the names put in free with all orders. When the disk

(Turn to Page 15.)

Karo

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

On Irrigating Potatoes.

there any special time to water poes to make them set on heavily?—E. ., Eagle county Colo.

Ve would direct your attention to advice given by Dr. Wm. Stuart a government bulletin which we te as follows:

There is considerable diversity of nion regarding the proper time at ich to make the first application of ter, some growers contending that should be withheld until the plants ve set their tubers; others say that is better not to apply water until leaves of the plants show a decided dark blue-green color, which is conered a satisfactory indication of a k of sufficient moisture; still others im that the soil should not be irrited until the foliage begins to wilt. years of normal winter precipitan, if the land has been properly ndled prior to planting the crop, ere is sufficient moisture to carry the ants well along to the blooming stage. the other hand, if winter rains and ows have been light and the ground es not possess sufficient moisture to sure good germination of the seed, should receive an irrigation prior to e last fitting operation. If it should ppen that unusual weather condions should so sap the moisture from e soil after the crop is planted as to pair the vigor of the seed, the grow should not hesitate to apply water. his is usually called 'irrigating up' e crop. Should the weather be very t and the irrigation water warm, the rower runs some risk from decay of ed pieces by attempting to irrigate n. There is less danger from the aplication of water under such condions if the land is irrigated at night.

"The more general practice is to aply water whenever the crop appears to equire it. If by careful conservation f the soil moisture through proper ultural methods the potato plants can e kept in a thrifty growing condition ntil the tubers are set, the withholdng of water until after that period is robably to be commended. It does ot seem possible that any good purose can be served by delaying the aplication of water until the plants have egun to wilt.

"After irrigation is once begun it hould be continued at sufficiently frequent intervals to insure a continuous rowth of the plants."

Left Wife With the Mortgage.

A husband mortgaged the property and eserted his wife, leaving her penniless. he mortgage is not due for two years. an she sub-rent the land and remain n the place until the mortgage is paid? —S. B. F., Morgan county, Colo.

There is not sufficient data here upn which to give advice. Your corresondent does not state anything about n whose name the land contract is, he nature of the mortgages, how givn, by what authority and the like. I an say, however, that I see no obection to her doing what she suggests f she has possession of the land. Hamet J. Barry, Attorney, Equitable ldg., Denver, Colorado.

Dry Land Pasture Crops.

Please give me some information bout buckwheat as a hay crop for altiudes of about 6,000 feet. Will it make ood hog feed either green or cured as ay?

What are chufas?

I can raise plenty of corn on my dry and, but alfalfa will not stand pasturng. What would you advise instead of lfalfa for hog pasture?

What do you think of beans as a feed rop for cows in a rotation with fall heat?—R. H. B., Montezuma county, olo.

We are asking the Department of griculture to mail you a copy of a ulletin on buckwheat. This crop is ot extensively grown in the west but t will do well even as high as six thouand feet. We do not consider it of any articular value, however, as a hay rop, as there are other plants which erve much more satisfactorily.

Chufas are a southern plant and will ot mature under our conditions in Colrado. The chufa is an edible tuber hat makes a fine hog food, producing ne hundred to one hundred fifty bushls per acre in Georgia, Alabama, and ther southern states. The crop is also rown to some extent on the Pacific oast.

We would not recommend growing beans for cow feed. They can be used for hogs when cooked, if fed with equal parts of corn meal, with plenty of salt added to the beans when cooking.

We would suggest that if you can raise plenty of corn, the only thing you seem to be in need of is a safe hay and pasture crop on your dry land. We would suggest that you try sweet clover. The plant is drouth resistant and it is very serviceable for pasture as well as for hay, answering every purpose of alfalfa. We will mail you copy of Western Farm Life for March 15th, 1919. It contains a complete article on sweet clover, written for us by Dr. V. T. Cooke. This will give you information about preparation of ground and rate of seeding, time of planting, etc.

A mixture of brome and orchard grass has proven quite successful for non-irrigated pasture purposes in some parts of Colorado at five to six thousand feet. Another good crop for pasture is fall rye. It will stand about as much rough handling as any crop we could recommend for dry land planting. In eastern Colorado many dairy farmers are using rye successfully for pasture purposes, sowing it in the fall and pasturing it early in the winter and during the following spring and summer.

Wants To Buy Bees.

Can you give me the names of any dealers in bees in this part of the state? What should a good hive be worth?—J. P., Pueblo county, Colo.

As far as we know there are no dealers in bees in the state at present. Our season coming on rather late does not make it profitable for beekeepers to specialize in the production of bees and sell them in competition with localities where colonies of bees will build up much quicker, owing to their advanced season. By consulting the advertising pages of bee journals you will find that beekeepers from the southern states, Texas principally, are offering bees by the pound with or without queen, f. o. b. shipping point. There is, of course, some risk connected with having them arrive safely, and generally it is not as profitable to buy bees that way than to pick up colonies of bees from farmers in nearby localities, which can generally be secured at from $5.00 to $7.00 per hive. These will usually contain from 3 to 5 lbs of bees, besides the brood, the combs and the queen.—F. Rauschfuss, Secretary, Colorado Honey Producers' Association.

Tonnage of Hay In Stack.

Please tell me how many cubic feet there are in a ton of hay in the stack? —A. G., Huerfano county, Colo.

The number of cubic feet per ton of hay will vary according to the length of time the hay has been put up, but usually we figure native hay in large, well settled stacks to contain 430 cubic feet per ton. Alfalfa is figured about 512 cubic feet per ton after the hay has been put up about three months; when just put up it will run about 560 cubic feet; after 60 days it will be about 540 cubic feet. After alfalfa has been up five or six months the measurement will be about 450 cubic feet to the ton.

Damaging B's Crops.

A. has about 35 horses and as many cattle that he lets run in the road. He has his place all fenced. There is no free range here, nearly everything being farmed. If these cattle get on B.'s land and damage his crops, breaking through a three-wire fence, does A. have to stand the loss?

B. is driving along the road in his auto and he hits and hurts one of A.'s horses running in the road, damaging the car, who pays?—Reader, Washington county, Colo

1. If B's three wire fence conforms to the legal requirements then A must pay for damage done by his horses or cattle breaking through such fence.

2. Section 8 of the fence law provides: "It shall be unlawful for the owner or owners of any animal or animals knowingly to cause or permit said animal or animals to graze or run at large in any road, lane, or public highway that is fenced on both sides with a legal fence, and in case any animal or animals while running at large shall be killed or injured by any vehicle of whatever nature the owner or driver, or person in charge of the said vehicle, shall not be liable for damages, provided that said killing or injury shall not be wilful or malicious."

The New Roller-Bearing Tight-Bottom

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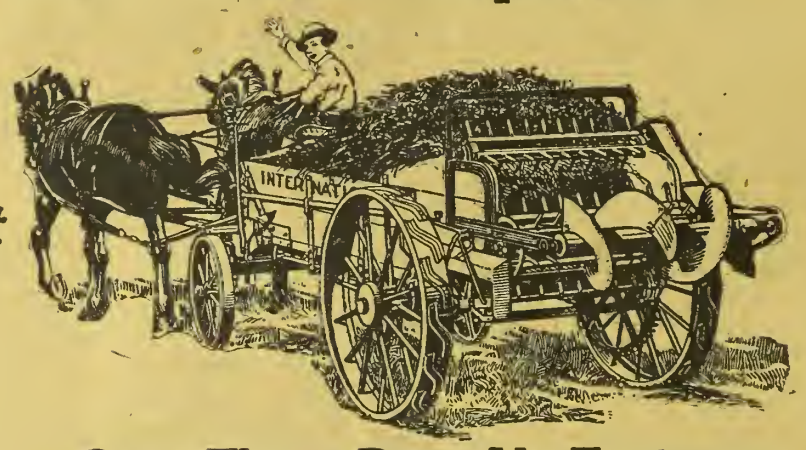

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2. Walking beam transmission from main axle eccentric and extra large ratchet wheel give easy, strong steady feed. Box tapered to eliminate friction on box sides. Six feed speeds.

Center-Pivot Axle

3. Oscillating front axle, auto-type, permitting short turn. No pole whipping.

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4. Power is transmitted from both ends of the rear axle—beaters and wide-spread driven from one wheel and the manure feed from the other.

Wheels Track

5. Rear wheels track with the front wheels, lightening draft.

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6. There is no clogging, jamming apron, because the spreader has a tight bottom. Spreads anything.

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7. Handles good substantial loads easily, because two all-steel beaters with chisel-pointed square teeth work from both top and bottom of the load.

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9. An all-steel main frame—wood box sides hold only the load.

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VETERINARY ADVICE.
Questions in this department, answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Lameness Will Disappear.

I have a horse that had a very bad barbed wire cut on his front leg which was done last September. The cut seems to be perfectly healed, but there is still some swelling in the leg which runs down to the knee, the cut being on the upper part of the forearm. Can you tell me how to reduce this swelling? The horse is eight years old, in fairly good flesh and weighs about 1,100 pounds.—L. E. S., Pueblo county, Colo.

There has probably been some new connective tissue formed as a result of the inflammation, that will never entirely disappear. Blisters would only add to the difficulty. The lameness should entirely disappear although he may swing the leg awkwardly. Massaging with mild liniments, combined with mild exercise, should get him in shape for spring's work.—G. H. G.

Calves Have Pink Eye.

What can be done for calves having the pink eye. Also, what can be done for pneumonia among cattle? I wrote you about a year ago about poll evil. I just want to tell you that we cured the bad case I spoke of by rubbing with coal oil and washing with carbolic acid solution. It took a long time; about nine months of constant care and treatment, but it certainly did the work.—L. C., Las Animas county, Colo.

Infectious keratitis (pink eye) represents a sore-eyes condition of cattle that, if neglected frequently results in total blindness. It is more commonly seen during the late summer and fall, probably transmitted largely by flies. Animals affected should be kept in a dark stable, and with those that are gentle enough to handle easily, a dark cloth might be used to shade the eyes. Sop the eyes several times a day with a 3 per cent solution of boracic acid. By all means do not be tempted to treat the eyes with anything that is irritating. The "scum" over the eyes cannot be removed until the inflammation subsides, when it will disappear without special treatment. Animals not yet affected might well be removed to other quarters. It is caused by an infection the specific nature of which has not been determined.—G. H. G.

Probably Cowpox.

My cow has lumps from the upper part of teats to the udder. After a few days a scab forms on outside and in three to four days the swelling goes away and a lump will form on another teat until all have been affected No lumpy or stringy milk so far. Lumps are about the size of the end of a man's thumb.—R. A. N., Idaho.

The cows are apparently affected with an exanthema of some kind, the nature of which is uncertain. It probably is cowpox which runs a very mild course and only exceptionally is treatment necessary. The eruptions occasionally become infected in a way that results in sores that need attention. The immunity against small-pox that was acquired by milkers of cows affected with cow-pox, was the beginning of small-pox vaccination. It probably will run through the entire herd but need cause no apprehension.—G. H. G.

Comment by Farmer Putnam.

(Continued from Page 13.)

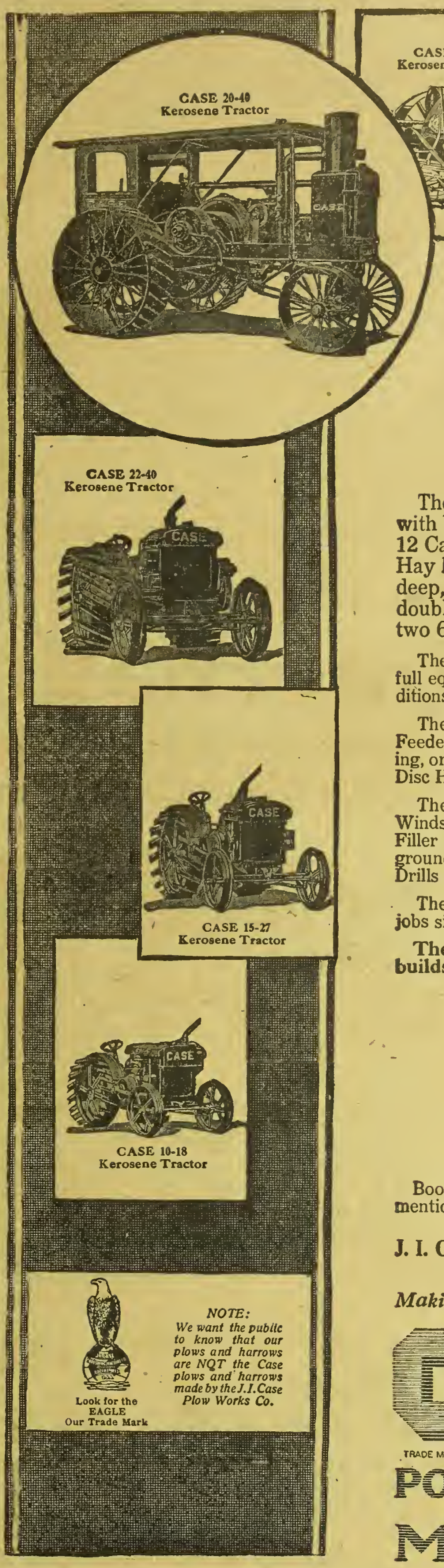
starts around, the needle strikes these little grooves and calls the cows up for milking."

"Wonderful," sez I, "but what do you do about them Holstein cows like Pietertetje Johanna de Kol Rosalie Milkmaid 367387?"

"Oh, we just abbreviate it and call her Pete. Yes and that ain't all. After the cows are called to the stanchions and step on the floor of the stalls it raises the teat cups and they spring into place. When the cow has been milked dry the cup opens, releasing a valve that is connected with a system of fine platinum microphone wires that give the farmer the signal. He presses another button and that lets the milk out of the container directly by a flexible pipe line into the milk house for pasteurizing, or into the separator for skimming, whichever is desired. Yes sir, our machine does away with all manual labor and makes the life of the dairy farmer one continual round of pleasure. It only leaves one disagreeable duty on his hands and that is counting his money, but we're thinking of putting in a line of adding machines to take care of that."

And to think that the feller used to be nuthin' but a poor but honest county agent!

Thos Jefferson Putnam.



To avoid confusion, the J. I. CASE THRESHING MACHINE COMPANY desires to have it known that it is not now and never has been interested in, or in any way connected or affiliated with the J. I. Case Plow Works, or the Wallis Tractor Company, or the J. I. Case Plow Works Co.

The Case Line Offers Choice of Required Power and Capacity

KEROSENE TRACTORS

The Case 10-18 Tractor drives 20 x 28 Thresher with Windstacker, Feeder and Grain Handler; No. 12 Case Silo Filler with 40-ft. blower pipe; 17 x 22 Hay Baler; will pull 2-bottom plow, 6 to 8 inches deep, depending on soil and field conditions; 8 ft. double-action Disc Harrow; 22 shoe Grain Drill; two 6 ft. Binders.

The Case 10-20 Tractor drives 22 x 36 Thresher and full equipment; pulls 3-bottom plow, under favorable conditions; other machinery requiring similar power.

The Case 15-27 Tractor drives 26 x 46 Thresher with Feeder and Windstacker; three 14 in. plows in hard plowing, or four under favorable conditions; 10 ft. double-action Disc Harrow; two 7 ft. Binders, etc.

The Case 22-40 Tractor drives 32 x 54 Thresher with Windstacker, Feeder and Grain Handler; No. 20 Case Silo Filler with 40 ft. blower pipe; four 14 in. plows in hard ground, or five under favorable conditions; battery of Grain Drills or Harrows.

The Case 20-40 Tractor will handle belt and drawbar jobs similar to 22-40.

The J. I. Case Threshing Machine Company also builds:

- **Grand Detour Plows, all sizes and for all soils and conditions.**
- **Double Disc Harrows for use with tractors.**
- **Threshing Machines,—six sizes**
- **Hay Balers,—two sizes**
- **Silo Fillers,—three sizes**
- **Road Graders,—three sizes**
- **Steam Tractors,—eight sizes**
- **Rock Crushers,—two sizes**
- **Steam Road Rollers,—two sizes**

Booklets, describing and illustrating any products above mentioned, furnished on request.

J. I. CASE THRESHING MACHINE COMPANY, Inc.
Dept. W-2, Racine, Wis., U. S. A.

Making Superior Farm Machinery Since 1842

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TRADE MARKS REG. U. S. PAT. OFF. AND IN FOREIGN COUNTRIES
POWER FARMING MACHINERY

Shorthorn Breeders' Sale.

Conservatism marked the auction sale of Shorthorn breeding cattle at the National Western show. It has been the policy of the Shorthorn men to keep their cattle within reach of the average farmer and no effort is made for sensational prices. Prof. W. A. Cochel, formerly head of the animal husbandry department of Kansas Agricultural college, now expert adviser employed by the American Shorthorn Breeder's association, in the opening announcement called attention to the fact that the winning of the carlot feeder classes by the Shorthorns shows the advisability of using purebred bulls of size and scale on the range and that Shorthorns were now also being demanded by the western farmer, who finds the range disappearing and needs a beef breed that fits the new conditions. Announcement was made of the fact that Colorado breeders would be represented at the Chicago Shorthorn Congress in February with 15 outstanding animals, picked from the best herds.

Top figures in the sale were $1,010 on a Gawthorp & Son heifer, and $1,000 on an imported white bull owned by Hauf & Son, Glendo, Wyo., and the same figure on a sale of H. M. Erwin of Loveland to an Idaho breeder. Mr. Hauf was the buyer of the Gawthorp heifer, as classy a youngster as has ever been brought into the auction ring at Denver and worth every cent of the price paid for him by the Wyoming breeder. Hauf's top bull also was an outstanding individual. He sold to B. K. Mansfield of Cain, Wyo. Carey M. Jones, who specializes in Shorthorns, was the auctioneer. A list of sales follows:

Bulls.

Superior Thought 710707, Allen Cattle Co., Colorado Springs, to Dike Smith, Sterling, $275.

Choice Thought 803297, Allen Cattle Co., Colorado Springs, to Harry Hopley, Atlantic, Ia., $500.

Good Star 803304, Allen Cattle Co., Colorado Springs, to A. L. Dotson, Nepesta, $275.

Royal Whitehall 795321, Cornforth Live Stock Co., Elbert, to Frank Gettle, Goodland, Kan., $300.

Forest Glen Goods, Cornforth Live Stock Co., Elbert, to W. B. Olsen, Cokeville, Wyo., $425.

Scotch Victor 674326, State Agri. College, Ft. Collins, to Geo. Beard, Leroy, Kan., $200.

Model Renown, H. M. Erwin, Loveland, to L. H. Fink, Blackfoot, Idaho, $1,000.

Montezuma Sultan 815119, C. G. Gawthrop, Mancos, to Conrad Peterson, Elbert, $400.

King Albin 789227, George L. Foxton, Glendo, Wyo., to Allen Laughlin, Glendo, Wyo., $250.

Northern Light 707586, C. A. Hauf & Son, Glendo, Wyo., to B. K. Mansfield, Cain, Wyo., $1,000.

Memorial Monarch 832057, C. A. Hauf, Glendo, Wyo., to W. F. Torhmolen, Ft. Morgan, $225.

Burwood 750282, Jennings & Stamy, Council Bluffs, Ia., to G. W. Beard, $255.

Double Baron 776362, A. S. Klopping, Underwood, Ia., to G. W. Beard, $250.

Glenwood Gloster 820768, Geo. L. Foxton to W. B. Olsen, Cokeville, Wyo., $175.

Type's Model 5th 714057, C. Hauf to Geo. L. Foxton, $500.

Rosedale's Best 836548, A. L. Klopping, Underwood, Ia., to Frank Gettle, $250.

Stamp's Commander 713029, C. A. Melburn, Elbert, to G. W. Beard, $235.

Gloster's Choice 822686, C. A. Melburn to Oldfather & Long, Brady, Nebr., $300.

Sultan Junior 723356, R. G. Maxwell & Sons, Ft. Collins, to O. W. Mossburg, Longmont, $310.

Priscilla's Pride 857972, Maxwell-Miller Cattle Co., Steamboat Springs, to H. E. Mann, Berthoud, $500.

Venus King 77342, Chas. Plageman, Eckley, to Frank Gettle, $200.

Victoria's Hero 770343, Chas. Plageman, Eckley, to Frank Gettle, $250.

Frederick 818649, Carr W. Pritchett, Steamboat Springs, to L. B. Crawford, Steambot Springs, $350.

Agamemnon 740062, Carr W. Pritchett, Steamboat Springs, to J. T. Wilkinson, Monte Vista, $350.

Silver Cup 739493, W. F. Rapp, St. Edward, Nebr., to D. E. Perkins, Kremmling, $400.

Maxwalton Conqueror 564161, Hugh Smith, Elk, Wyo., to G. O. Carpenter, Scotts Bluff, Nebr., $325.

Royal Star 759942, J. M. Steward & Son, Red Cloud, Nebr., to H. H. Schaffer, Weldona, $350.

Barmpton Model 690453, D. Warnock & Sons, Loveland, to Oldfather & Long, $410.

Model Reserve, D. Warnock & Sons, Loveland, to Allen Laughlin, Glendo, Wyo., $450.

Royal Model, D. Warnock & Sons, Loveland, to O. L. Klopping, Neola, $500.

Cows.

Countess Victoria 7th 96660, Allen Cattle Co., Colorado Springs, to Jay & Allen, Boulder, $800, with bull calf at foot.

Royal Queen 489769, Allen Cattle Co., Colo. Springs, to A. L. Dotson, Nepesta, $375.

Divide Lass 820152, Allen Cattle Co., Colo. Springs, to C. G. Gawthrop, Mancos, $310.

King's Heiress 758299, Allen Cattle Co., Colo. Springs, to C. O. Peterson, Elbert, $200.

Glendale Addie 2nd 716617, Cornforth Live Stock Co., Elbert, to L. H. Fink, $450.

Golden Diamond, Cornforth Live Stock Co., Elbert, to J. B. Easton, Cambridge, Nebr., $400.

Ruby Goods 504000, George L. Foxton, Glendo, Wyo., to Oldfather & Long, $400.

Primo Princess 793764, George L. Foxton, Glendo, to Allen Laughlin, $250.

Douglas Rose 717473, George L. Foxton, Glendo, to L. H. Fink, $610.

Gloster Snowball 836949, George L. Foxton to W. A. Dickens, Longmont, $300.

Gloster Princess 820770, George L. Foxton to C. A. Hauf, Glendo, Wyo., $275.

San Juan Victoria 4th 815124, C. G. Gawthorp, Mancos, to C. A. Hauf, $1,010.

Monarch's Lady 712962, C. A. Hauf to Allen Laughlin, $600.

Lady Hedgewood 832581, Clinton Whittier, Cherry, to F. J. Coyle, Henning, Nebr., $200.

Primrose A. 704929, Maxwell-Miller Cattle Co., Steamboat Springs, to Oldfather & Long, $350.

White Rose 704931, Maxwell-Miller Cattle Co., Steambot Springs, to W. A. Dickens, Longmont, $300.

Red Butterfly 857988, Maxwell-Miller Cattle Co., Steamboat Springs, to W. A. Dickens, Longmont, $285.

Boulder Creek Pet, J. E. Rothrock & Son, Denver, to H. M. Paul, Pierce, $180.

Dode 52nd 679483, J. M. Steward & Son, Red Cloud, Nebr., to Allen Carnahan, Elbert, $700.

Hereford Breeder's Sale.

The sale of Hereford cattle held at the stock show was by far the most successful ever held at Denver. It was a fitting climax to the wonderful Hereford showing and was attended by a large number of stockmen from all over the nation. When over 100 animals are nominated in a sale and then closely sorted down to 50, a strong offering is to be expected. This was the condition in this sale. Every animal offered was fit to grace any herd. The top price of the sale was $7,500, paid for Panama 76th, consigned by A. B. Cook of Townsend, Mont. He was sold to W. H. Donald of Bellville, Mont. Princeps Domino, from the herd of Fulscher & Kepler of Holyoke, Colo., was a close second, with a price of $7,300. This bull was bought by Senator E. M. Cochran of Kentucky. Gay Agnes, from the herd of Johnson Brothers of Eagle, Colo., brought $6,550, and was sold into the herd of Harris & Son of Harris, Mo. The average price for bulls was $1,711 and for cows $1,140. The average for the sale was $1,405. John Painter of Roggen, Colo., was the sale manager and the success was largely due to his efforts.

Bulls.

Prince of Hermost 17th 735102, T. F. DeWitt, Parshall, to J. M. Howe, Clementine, N. M., $1,500.

Prince of Hermosa 18th 735103, T. F. DeWitt, Parshall, to H. A. Buffington, Malvern, Iowa, $2,150.

Prince of Hermosa 20th 735105, T. F. DeWitt, Parshall, to J. W. Shoin, Eagle, $1,100.

Prince Crusader 858881, Geo. Chandler, Baker, Ore., to Earl D. Haggerty, Cokeville, Wyo., $775.

Beau Gomez Jr. 745206, S. J. Gabbert, Dearborn, Mo., to Wm. Henn, Kansas City, Mo., $1,000.

Panama 76th 692677, A. B. Cook, Townsend, Mont., to W. H. Donald, Bellville, Mont., $7,500.

Gay Boy 100th 765642, Johnson Bros., Eagle, to M. T. Eberhardt, Pueblo, $1,050.

Gay Boy 116th 797660, Johnson Bros., Eagle, to E. H. Kohman, Nasor, Texas, $700.

Gay Boy 80th 706574, Johnson Bros., Eagle, to American Ranch Co., Wallace, Mont., $2,000.

Mac Stanway 790174, David Firm & Sons, La Veta, to J. H. Ambrose, Ft. Collins, $750.

Don Stanway 701018, David Firm & Sons, La Veta, to Andrew Christensen, Eagle, $3,500.

Don Jose 2d 790156, David Firm & Sons, La Veta, to C. H. Harris, Carbondale, $575.

Carlos 155th 683253, L. G. Davis, Saratoga, Wyo., to J. H. Thatcher, Pueblo, $1,025.

Carlos 157th 683255, L. G. Davis, Saratoga, Wyo., to R. C. Jacks, Monterey, Calif., $525.

Junior Domino 706075, Fulscher & Kepler, Holyoke, to Ellis Sheridan, Sugar City, Colo., $800.

Beau 22d 743341, A. Christensen, Eagle, to S. P. Sloss, Sloss, $800.

Beau 4th 624312, A. Christensen, Eagle, to R. C. Jacks, $450.

Beau 29th, 792254, A. Christensen, to E. H. Sanderson, Monte Vista, $500.

Beau 1st 624309, A. Christensen, Eagle, to Wm. Henn, Kansas City, Mo., $700.

Princeps Domino 793463, Fulscher & Kepler to Senator E. M. Cochran, Kentucky, $7,300.

Real Domino 812381, Fulscher & Keppler to A. B. Cook, Townsend, Mon., $2,100.

Mansel Boy 2nd, John E. Painter, Roggen, to C. A. Tow, Norway, Iowa, $875.

Director Domino, Fulscher & Kepler to American Ranch Co., Wallace, Mont., $2,000.

Armontnot, Fulscher & Kepler, to R. C. Jacks, $4,000.

Chesney Lad 49th 635607, Chesney Stock Farm, Evanston, Wyo., to R. C. Jacks, $575.

Beau Domino, Fulscher & Kepler, to R. P. Lamont, Jr., Larkspur, $1,900.

Peerless Domino 818453, Fulscher & Kepler, to Frank P. Fox, Indianapolis, $3,550.

Cows.

Elizabeth Mischief 707872, S. L. W. Ranch, Kersey, to Earl D. Haggerty, Cokeville, Wyo., $700.

Miss Carrie 706596, Johnson Bros., Eagle, to J. D. Canary & Son, Denver, $1,050.

Gay Agnes 625639, Johnson Bros., Eagle, to Harris & Son, Harris, Mo., $6,550.

Miss Anna 706215, Johnson Bros. to Canary & Son, Denver, $1,200.

Lady May 790173, David Firm & Sons, La Veta, to Fulscher & Kepler, Holyoke, $1,000.

Lena 760233, W. H. Shryack & Sons, Eagle, to Frank A. Fox, Indianapolis, $675.

Miss Blanchard 12th 792262, A. Christensen, Eagle, to R. C. Jacks, $700.

Lucy Blanchard 2d 696952, A. Christensen, Eagle, to Earl D. Haggerty, $800.

Virtue Domino 814904, Fulscher & Kepler, Holyoke, to Frank Fox, Indianapolis, $950.

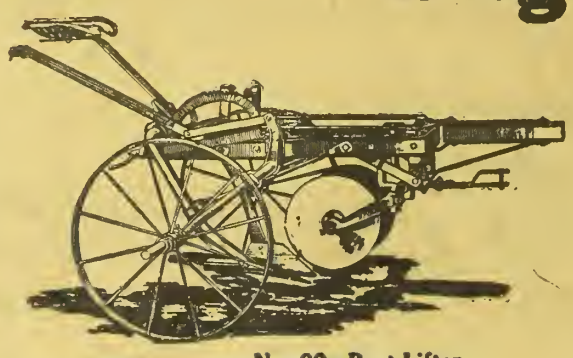
Golden Lass 18th 788214, Hereford Corporation of Wyoming, Cheyenne, to Frank Fox, $575.

Golden Lass 10th 750541, Hereford Corporation of Wyoming, Cheyenne, to R. C. Jacks, Monterey, Cal., $875.

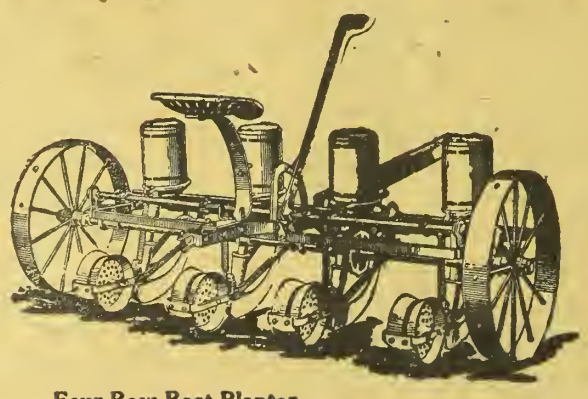
Bonnie Lady 15th 788200, Hereford Corporation of Wyoming, Cheyenne, to Earl D. Haggerty, $800.

Belle Grove 828217, Geo. Chandler, Baker, Ore., to R. C. Jacks, $625.

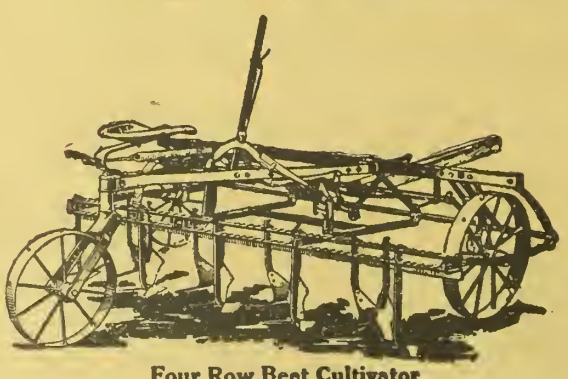
Two Profitable Crops
Beans and Sugar Beets



No. 20—Beet Lifter



Four Row Beet Planter



Four Row Beet Cultivator

THESE crops command high prices. Get bigger profits from them by using tools especially designed for their production. Plant, cultivate and harvest with John Deere Beet and Bean Tools—special implements that have a long-established reputation for thorough work.

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BEET AND BEAN TOOLS

John Deere No. 20 Beet Lifter is the riding two-wheel lifter with special shaped lifting blades that do not damage the beets. Instead they pulverize the soil, loosen the beets, lift them a short distance and leave them upright and easy to handle.

Only two wheels—as easy to turn and back as a two-wheel cart—no tongue truck required.

John Deere Four-Row Beet Planter—easily converted into a three-row bean planter. Equipped with John Deere "Natural Cell Fill", Edge Delivery Seed Plates—the acccurate seed-dropping mechanism that plants seeds at equal distances apart over the entire field.

John Deere Four-Row Beet Cultivator can quickly be converted into a three-row bean cultivator. Equipped with quick adjusting tool bars, the most simple construction ever devised for enabling operator to change styles of tools to suit field conditions.

The John Deere Line of Sugar Beet and Bean Tools also includes plows and harrows, all standard sizes and types; two row beet cultivators; two row bean planters; walking beet pullers; sugar beet gear and elevators.

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Princess Belle 689873, Geo. Chandler, Baker, Ore., to Chas. Bull, $1,050.
Peaceful Princess 789680, Geo. Chandler, Baker, Ore., to Cyrus Tow, Norway, Iowa, $625.
Rosalia 743389, L. C. Grant, Avondale, to H. B. Means, Saguache, $700.
Nettie Mischief 703161, S. L. W. Ranch Co., Kersey, Colo., to Frank B. Fox, $650.
Maude Mischief 791234, S. L. W. Ranch Co., Kersey, Colo.,to L. G. Davis, Saratoga, Wyo., $575.
Lady Domino 814899, Fulscher & Kepler to George Gross & Son, Walnut, Ia., $1,400.
Chesney Lass 76th 736666, Chesney Stock Farm, Evanston, Wyo., to Harris & Son, $650.
Lady Sewal 726770, David Firm & Sons to Frank B. Fox, $650.
Bonnie Lee 713886, Hereford Corporation to E. D. Haggerty, $575.

Draft Horse Sale.

The first sale held under the auspices of the Colorado Purebred Draft Horse association at the stock show, proved to the satisfaction of the breeders that a revival in the draft horse business is on the way. While no big prices were paid there was nevertheless a demand for the type of drafters that the market wants. A number of the sales were made to farmers who were after pulling power combined with the ability to produce offspring of good quality. Some of the offerings were distinctly of the show type and these sold well, top on both Belgians and Percherons being $1,000. In opening the sale Carey M. Jones, the auctioneer in charge, called on Prof. R. W. Clark for a talk on draft horse conditions. Prof. Clark emphasized that western farmers had not been breeding the right type, and that an apparent overstock of horses was of a class too light for the service now demanded of them. Breed and raise nothing under 1,700 to 1,800 pounds, he advised, as the tractor is teaching us the lesson that we need weight and power.

Carey Jones remarked thereat that the tractor was like a society girl as the wife of a farmer, all right in her place in the parlor, but needing a dependable hired girl in the kitchen to do the work.

The Belgians in the sale were offered by J. D. Brunton of Aspen and H. Bert Cave of Littleton. Mr. Cave showed his appreciation of Irvindale Rowdy's value when he bid Patsy 5744 up to $1,000 and got her. She is bred to the famous $25,000 stallion that died at Aspen last Thanksgiving day. Mr. Brunton created a sensation in horse circles shortly thereafter by offering Charles Irvine $60,000 for Alfred de Bree Eyck, but the owner refused to sell.

Sergeant & Son of Fort Morgan evidenced their faith in the Percherons by paying $1,000 for Mlle. de Valois, a mare of Zang's breeding.

R. A. Chace of Fort Morgan was in the sale with several offerings of the farmer type of Percheron mares which sold low considering their quality and dependability as a source of farm power.

The sale was managed by Richard Jay, who has lately come to Colorado from Iowa, and is interested in the purebred game with a special fondness for Shorthorn cattle, in which line he made a reputation before coming west.

A list of the horse sales follows:

Belgian Mares.

Glendale Pet 7718, J. D. Brunton, Aspen, to Lester Beveridge, Arapahoe, $225.
Glendale Princess 7065, J. D. Brunton, Aspen, to Lester Beveridge, Arapahoe, $205.
Glendale Queen 7064, J. D. Brunton, Aspen, to Lester Beveridge, Arapahoe, $500.
Patsy 5744, J. D. Brunton, Aspen, to H. Bert Cave, Littleton, $1,000.
Ottilie 3999, H. Bert Cave, Littleton, to Archie Anderson, Encampment, Wyo., $700.

Belgian Stallion.

Gaston 10527, J. D. Brunton to C. E. Burnham, St. Francis, Kan., $400.

Percheron Mares.

Betty 129391, Clarence Bixler, Boulder, to Geo. Cramer, Kanorado, Kan., $550.
Hulda 115956, Clarence Bixler, Boulder, to Frank Penfold, Ft. Lupton, $500.
Charmille 57639, Chas. Holland, Springfield, Mo., to W. A. Sergeant & Son, Ft. Morgan, $435.
Mlle. de Valois 139806, A. J. Zang, Denver, to W. A. Sergant & Son, $1,000.
Lusace 101815. A. J. Zang, Denver, to Geo. Cramer, Kanorado, $700.
Leota 124890, James Loonan & Son, Waterloo, Ia., to Sergeant & Son, $500.
Beauty 90257, R. A. Chace, Ft. Morgan, to C. E. Burnham, St. Francis, Kan., $410.
Alice 73173, R. A. Chace, Ft. Morgan, to C. W. Henry, Greeley, $250.
Fannie 118386, R. A. Chace, Ft. Morgan, to W. D. Lewis, Morrison, $535.
Belle 145175, R. A. Chace, Ft. Morgan, to S. L. W. Ranch Co., Greeley, $250.
Allie 145178, R. A. Chace, Ft. Morgan, to Dave Scott, Johnstown, $240.
Queen 145176, R. A. Chace, Ft. Morgan, to Fred Beltner, Bayard, Nebr., $250.
Patsy 103226, R. A. Chace, Ft. Morgan, to Wm. Bush, Lincoln, Nebr., $425.
Pansy 66319, R. A. Chace, Ft. Morgan, to W. D. Lewis, Morrison, $250.
Betsy 152803, R. A. Chace, Ft. Morgan, to Fred Beltner, $265.
Mame 152800, R. A. Chace, Ft. Morgan, to Frank Penfold, Ft. Lupton, $260.
Babe 152802, R. A. Chace, Ft. Morgan, to S. L. W. Ranch Co., $275.
Minnie 152804, R. A. Chace, Ft. Morgan, to Geo. Cramer, $250.
Myra 152805, R. A. Chace, Ft. Morgan, to Geo. Cramer, $365.

Percheron Stallions.

Elmwood Rebespierre 148402, Adolph J. Zang to H. H. Schaffer, Weldona, $500.
Colonel 140684, R. A. Chace, Ft. Morgan, to Wm. Bush, Lincoln, Nebr., $260.
Cal 152801, R. A. Chace, Ft. Morgan, to C. E. Burnham, St. Francis, Kan., $165.
Ben (colt), R. A. Chace, Ft. Morgan, to Wm. Bush, Lincoln, Nebr., $110.

Annual Holstein Sale.

The Holstein sale held during stock show week was conducted on January 22. There were 40 animals sold. The average price on bulls was $210 and on cows $343. The top price of the sale was on a cow, Fleta Hangerveld Korndyke, from the M. E. Penrose consignment of Denver. She sold for $1,000 to E. Lindquist of Denver. List of sales follows:

Bulls.

Western Kuperus Sir Ormsby 260970, Hall Brothers, Denver, to F. O. Walker, Keenesburg, $180.
Western Leeuwarder Sir Koopman 274991, Hall Brothers, Denver, to Luther Freeman, La Bonte, Wyo., $150.
Bull, M. E. Penrose, Denver, to W. G. Foster, Denver, $125.
Sir Hengerveld Lakeside 166841, L. C. Donley, Mt. Morrison, to J. A. McCoy, Aurora, $160.
Collins Farm Pontiac Korndyke 255975, L. C. Donley, Mt. Morrison, to Chas. A. Rossiter, Broomfield, $325.
Bull, Spencer Penrose, Colo. Springs, to Albert Kennicott, Edgewater, $160.
Bull, American Beet Sugar Co., Rocky Ford, to A. M. Smith, Logan, $200.
Bull, M. E. Penrose to John Cramer, Brighton, $400.
Bull, L. C. Donley, to L. L. Rogers, Golden, $100.
Colantha Chief 205078, L. C. Donley to E. Lindquist, Denver, $300.

Females.

Western Johanna Darkness 511506, Hall Brothers, Denver, to John C. Hughy, Idalia, $250.
Western Johanna Ormsby 511505, Hall Brothers, Denver, to Chas. A. Rossiter, Broomfield, $290.
Western Sally Colantha 528949, Hall Brothers to Frank Markley, Platteville, $270.
Western Hengerveld Day Beauty 528950, Hall Brothers, Denver, to John C. Hughey, Idalia, $310.
Hilda Pontiac Pleiades 311128, H. Squibb, Aurora, to Arthur L. Pugh, Stratton, $400.
No. 7½ Heifer, H. Squibb to Cruse & Son, $140.
Hazel Segus Fayne 297493, M. E. Penrose to E. Lindquist, Denver, $300.
Leeuwarder Day Break 141488, M. E. Penrose to Mrs. P. O. Dobson, Denver, $275.
Fleta Hengerveld Korndyke 258886, M. E. Penrose to E. Lindquist, Denver, $1,000.
Ourvilla Creamelle Olive 2d 230411, M. E. Penrose to Hereford Corporation of Wyoming, $325.
Lena Inka Fayne 297494, A. Ponsford, Mt. Morrison, to Henry C. Warren, Eagle, $500.
Indianola Rag Apple 514636, L. C. Donley to Cruse & Son, Mt. Morrison, $275.
Duchess Pietertje Johanna 371667, L. C. Donley to L. Larson, Littleton, $275.
Belle Jolie Pontiac Rag Apple 518547, L. C. Donley to John C. Hughey, Idalia, $300.
Miss Neeltje Black 429627, L. C. Donley to Frank Markley, Platteville, $250.
Colantha of Crowe Roost 469751, L. C. Donley to Chas E. Ingalls, Kurtz, $350.
Francis Hartog Dekol 276486, L. C. Donley to Gillette Hill, Denver, $410.
Lucy Clyde Dekol 467626, L. C. Donleyto John C. Hughey, $400.
Lilith Ormsby Beets Mechthilde 455052, L. C. Donley to Cruse & Sons, $300.
Aaggie May Laura, L. C. Donley to Cruse & Sons, $375.
Female, James Gibson, Greeley to R. Eggleston, Mt. Morrison, $150.
Female, James Gibson, Greeley, to R. Eggleston, Mt. Morrison, $175.
Rubertdale Rofina Oatka 291387, American Beet Sugar Co. to Colorado State Home, Denver, $450.
Colorado Dekol Mutual, American Beet Sugar Co. to O. W. Murphy, Arvada, $175.
Little Betsy Gougher 489207, B. F. Simpson, Denver, to J. C. Hughey, $400.
Avoca Lodge Jennie Johanna 409203, B. F. Simpson, Denver, to E. Lindquist, Denver, $600.
Denver Japonica Valve 504899, M. E. Penrose to John E. Hughey, $300.
Female, L. C. Donley to Sam Warren, $225.
Twin heifers, L. C. Donley to Cruse & Son, each, $250.

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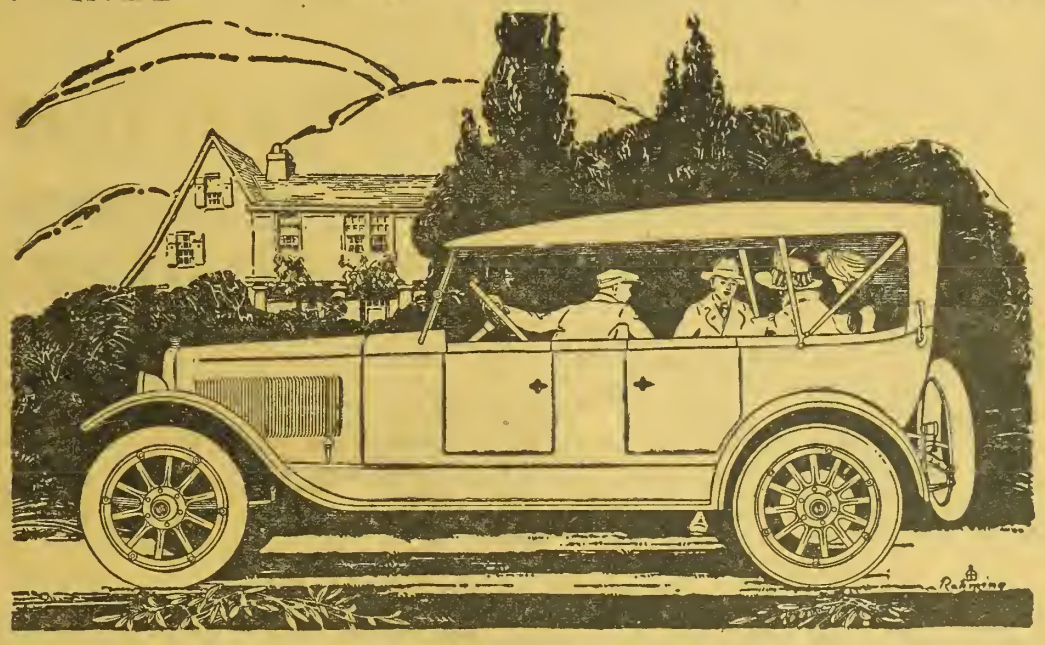

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H. A. LINDGREN

All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, WESTERN FARM LIFE, Denver, Colorado.

Dairy Heifers Often Neglected.

"Raising dairy heifers from weaning time until ready to calve is generally considered easy—so easy in fact that they are often neglected," says Chas. W. Turner, of the dairy department of the University of Missouri, College of Agriculture. "A heifer stunted by the lack of suitable feed will never develop into as good a cow as one kept growing from birth to maturity. During summer while the young animals are on pasture not much attention is needed, as pasture grass furnishes the best and cheapest feed available. Shade and an abundance of fresh water are two essentials which the careful herdsman always provides. In the winter it is not necessary that a heavy grain ration be fed if suitable roughages are at hand. Corn silage and legume hay make an excellent combination. With this combination of roughage and succulence, satisfactory results can be obtained with a minimum amount of grain."

The most satisfactory ration of all used in a recent experiment at the Missouri Station was silage at will, legume hay—clover or alfalfa—limited to about six pounds daily and two pounds of ground corn daily. On this ration heifers of all ages thrived and made gains above normal.

When the well-grown heifers are from 16 to 20 months old they should be bred to the best purebred dairy sire available. A winning combination for dairy improvement and success lies in a bred-for-production bull being mated with home-grown heifers. As the time for calving approaches, the heifers should be brought in and conditioned for the strenuous lactation period to follow. It has been shown repeatedly that fat on a heifer is soon milked off. Professor Eckles was first to show that a cow in good condition will test higher during the first part of her lactation period than one in thin flesh. The breeder can use this fact to advantage in preparing the heifer.

Cheese Industry Growing.

That the factory system of cheese making developed in the United States has greatly stimulated cheese production in practically every country of the globe is indicated in a survey of the cheese industry of this country and abroad, recently completed by the Dairy Division of the United States Department of Agriculture. One interesting feature of the survey is that relating to the effect of the "filled" cheese production, which was developed to a limited degree in the United States between 1870 and 1905. This cheese sold as genuine cheese and practically destroyed the confidence of European purchasers in the quality of cheese from the United States. Only now are European buyers beginning to regain confidence in the American product, so badly was their faith shaken by the short-sighted policy of a relatively small number of producers who exported the "filled" variety.

In 1880 the United States was the greatest cheese exporting country in the world. In 1918 five countries exceeded the United States in exports. The cheese exported from Europe is of special types, while that from Canada, United States, Argentina, New Zealand, and Australia, is largely of the Cheddar type. Countries exporting those varieties of cheese which are used for savory purposes appear to have enjoyed a continuous export demand. The variations in their exports are not so marked as the variations of the exports of those countries, including the United States, that have made the Cheddar type of cheese.

In the last half century the annual consumption of cheese in the United States has been less than 4 pounds per capita, and has never reached 5 pounds per capita as a national average. Speaking generally, the per capita consumption has been less in countries using only a few varieties than those were numerous varieties are used.

In the last half century the production of farm-made cheese in this country has practically ceased, while factory cheese, which has taken its place, now exceeds 300,000,000 pounds annually, about three times the highest figure ever reached by cheese made on the farm. The United States Department of Agriculture has prepared for free distribution Department Circular No. 71, which contains simple charts, together with interpretive comment, setting forth in detail these and many other facts about cheese.

Handling Pigs in Winter.

When the fall pig crop has been weaned the future management of the hogs becomes of paramount interest to the grower. Specialists of the United States Department of Agriculture report two general methods for the profitable handling of fall pigs during the winter. One system is to push the hogs as rapidly as possible in order to sell them on the market before the hot weather of the following summer. This really is the "hothouse" method of producing pork, as the animals are given extra care and feed in rushing them toward rapid maturity. This method involves particularly good housing for the hogs as protection from the severe weather of winter in the colder locations is essential. One of the most important factors is clean bedding. Above all things fall pigs should never be allowed to sleep in damp bedding as it is a prolific source of colds and pneumonia.

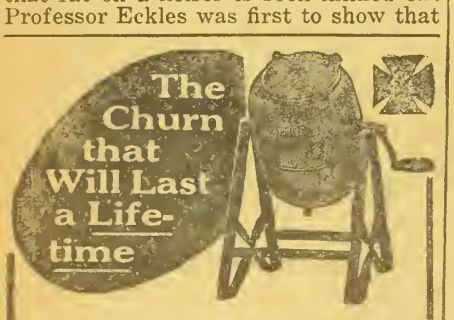
Another method of carrying fall pigs through the winter is to maintain the animals on a good growing ration which is relatively rich in protein-carrying materials. These are prerequisite for the making of a large, bony framework. The idea is to prime the hogs into good condition so that they may be turned out on grass the next spring with a well-developed framework on which they can store a surplus of fat. These animals can then be carried through the summer on good pasture with the addition of a little grain, thereby making some gain in weight and considerable gain in size, and be in splendid condition the following fall to fatten rapidly on the new corn crop. This system involves maintaining the hogs on the farm in some instances until the animals are 15 to 16 months of age, but often the porkers can be fed more cheaply where this method is practiced than where the hogs are pushed rapidly to market maturity.

Many herdsmen neglect to provide a sufficient amount of drinking water for the hogs during the winter months.

How to Prevent Thumps.

Don't let pigs die with thumps. Dr. Glover's reply to W. C., Wyoming, as to thumps in pigs was good. But the average farmer wants a preventive. When the pigs show the thumps knock them in the head. Thumps occur in pigs from three to six weeks old, and invariably in bad weather, and while the mother is giving a heavy flow of milk, which the pigs need.

Remedy: Shut the pigs away from mother in the morning; let them nurse



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at noon and shut away till evening, and you will have no thumpy pigs, providing you commence this in time. With some experience one can tell when pigs are getting too fat.—(From a Farmer Who Has Raised Pigs 30 Years.)

Western Dairy Progress.

J. E. DORMAN, U. S. D. A.

That the dairy industry in the western states is making progress is indicated by the reports of dairy fieldmen given below. While production has not increased to the extent that would be expected in normal times, there has been a steady improvement, particularly along the lines of breeding as shown by the interest taken in securing better bulls. Ten bull associations are now in operation, which include 39 bulls of the best to be found and whose dams have records of production of not less than 400 pounds of fat per year. In addition many excellent females have been brought to this section from the east and middle west.

Another indication of progress is the building of over 9,000 silos in the western states during the year. Better stock and better feeding tend to make the dairy industry a permanent branch of agriculture.

(Reports follow on Idaho and Wyoming only.—Editor.)

Idaho.

The dairy industry in Idaho is in a very thriving condition as indicated by the developments and interest shown. Although the price of hay and other feed stuffs has been high, the price received for dairy products has kept pace with them.

During the summer, exceptionally high prices were asked for alfalfa hay, the principal feed fed to dairy cows, but later conditions did not substantiate the belief that the prices would be maintained. Hay has been selling at $15 to $20 per ton in most instances and unless a long severe winter follows, the price is likely to advance very little. The wholesale price of butterfat has ranged from 50c to 90c per pound, depending upon markets, form marketed in, etc. Market milk and cream sells from 12c to 15c and 30c to 40c per quart, respectively.

Good dairy cows have sold high and although there has been considerable shifting around of dairy cows for various reasons, the tendency has been toward dairying and not away from it.

The co-operative creamery and co-operative cheese factory were organized. The organization of one co-operative lbul association was completed and the nucleus of two others started. Assistance was given to ten calf clubs organized by club leaders and champions selected at their achievement day meetings. A state dairy calf judging contest was held and state champions selected from the reports handed in. Three cow testing associations were kept going (one other discontinuing because of sale of herds). Eight breeders were encouraged to begin official testing and assistance given in keeping them and six others supplied with official testers. Two cow testing associations were interested in buying feed co-operatively and will complete arrangements soon for purchase of car lots. Judging demonstrations of dairy products and cattle at seven county fairs were given and assistance given at the State fair, Northwest Live Stock Show and National Dairy Show, judging contests, etc. Seven high schools were encouraged in starting record keeping of cows, etc., in the agricultural departments, and Babcock testing outfits introduced into three schools. Assistance was given breeders in the purchase of twenty-six head of purebred dairy cattle. Reports were received from the silo excursions held the preceding six months, showing over 100 silos were built in one county (Ada) and over 300 in the state. A total of 515 calls were made and 67 meetings attended with 1,775 persons addressed. Five dairy products manufacturing demonstrations were held. Over 400 letters of inquiry of dairy information were answered. Assistance was given to strengthen local breeders' associations and plans made for holding a state dairy meeting. Fifteen dairymen were encouraged to start individual record keeping of their cows. Eight men were located in dairy, creamery, or cheese factory positions.

Wyoming.

Mr. G. D. Turnbow, agent in Wyoming, has laid the foundation for what appears to be a permanent organization at Casper which will benefit not only the producers of dairy products, but will result in a lower price to the consumer. This organization, which is composed of dairymen only, will handle cooperatively the buying of feed and livestock, the marketing of their product, the buying of material for silos and machinery. They will also own bulls under the rules of co-operative bull associations.

Marketing: At the present time each man sells his own milk, several travel up the same streets. This is to be eliminated by all bringing their milk to a common distributing point. This is a milk plant, ice cream plant and small creamery combined. They are buying this and making it co-operative. Two wagons will supply all of Casper instead of fourteen. They figure on this reduction lowering the price of milk. Milk is 24c per quart at present and only half enough to supply the demand.

Silos: Some educational work was done along this line, as to the type of silo suitable for this section and the crops that promise the best returns. Sunflowers were recommended. The necessary machinery and material for silo building will be purchased through the organization.

Live Stock Improvement: They expect to buy several purebred bulls shortly (Holstein), and import four or five cars of dairy cattle in the spring.

Feeds: They are going to ship in alfalfa, hay, corn, chopped alfalfa and molasses mixed, and bran, co-operatively. They can save $5 a ton on hay and corresponding figures on other feeds. They elected from their group some one man to head each of these projects and they have already begun buying feeds.

All fourteen dairymen around Casper own milking machines. They say they are all working 100 per cent efficient and are solving their labor problems to a great extent.

A recent report states that under this plan the dairymen have reduced the price of milk 2c a quart to the consumer and further reductions are anticipated. This seems to be co-operation that brings results and this plan might well be emulated by other communities.

Hog Growers Organize.

The hog growers of the Center, Colo., section in the San Luis Valley recently organized a Hog Growers' association similar to the one at Monte Vista. Up to this time the hog growers at Center have been a part of the association at Monte Vista. The new association will employ a veterinarian whose headquarters will be at Center. The membership fee was set at $25 annuallly. The following officers were elected for the first year: J. P. Burns president; Frank Bowers, vice president; Bert Turner, treasurer; Adam Deitrich and Lewis Sharp, directors. C. W. Ikes was appointed secretary. Fifty-four members have joined the new association.

Tailor's Tricks Taught.

Ninety-five Canyon county, Idaho, women attended a nine-day series of meetings held in Marble Front, Lone Star, Notus, Wilder and Roswell, at which Miss Esther Wold, extension division clothing specialist, gave them some new points on the making of clothing. Savings of $367.05 were estimated. At the first meeting in each place coats were planned and cut out and the work on them was begun. At the second meeting, the making of bound and tailored button holes, crow's feet, arrowheads, trimming stitches and slit pockets was demonstrated, and instructions were given for cutting collars to fit any neck line, and also for cutting cuffs. Children's clothing was made from men's shirts, flour sacks, sugar sacks and old underwear. At the third meeting, the making of hats was demonstrated.

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Witch's Island.

(Continued from Page 7.)

Umph!" said I, doubtfully. "Yet re to camp here?"

We are. Here's the only fresh wa- to be found in the group. And re's shelter, of a sort. I don't need ut you're not acclimated and it'll be er to have a roof over your head o' nts. I've brought along a couple of mocks, and we'll swing 'em inside. at's more, I'll fetch some provisions, le you can busy yourself in the ching line. Take anything that es handy, and never mind the looks he job. We'll have to count on an sional shower, and a dry spot will welcome."

But Jose and the skipper?" said I. They'll bunk aboard the schooner— 'll prefer it. And it'll be the bet- way, all around. Two's company, four'd be a crowd in this instance."

n glad to quit the job. That's the elf to the task assigned me.

everal hours must have passed be- the roof met my not too exacting irements. I had cut boughs and en them into a rude covering, patch- and filling in until chinks of light onger showed, and then binding half ozen poles upon the mass to hold it lace in case of a stiff wind. Grayson red a few suggestions, as he came went, but nodded approval of the pleted work. While it was doing, had brought ashore food sufficient a fortnight, which he stored away carefully and neatly in the hut.

Best be amply provided," he ex- ned. "Never can tell what'll be the d. Suppose the schooner has to cut run—may be a week before she ks her way back."

Aye, aye," said I. "I notice you've ght along the artillery."

rayson picked up a long-barreled gun, which had graced the cabin of Pera.

Yes, I borrowed this of the skipper. e old weapon in its day, and still able of noise if not of great range. 'll find a stock of powder and shot some caps on that shelf yonder."

I hope there'll be no need of 'em," I, emphatically.

With you in the hope," said Gray-

And the expectation?"

expect nothing, that's the safer . There may be nothing to disturb hen again, there may be something. course, the sight of a gang at work he wreck might rouse the cupidity still the fears of any hardy mari- who chanced upon us. And in this ewhat lonely corner of the world is a trifle vague; the fellow with er takes, and the one who holds on is discoveries is the one who can. there's no harm in having firearms in reach."

Well, we've a revolver apiece," I re- ded him.

And Jose is a clever performer with achete. The skipper's a problemat- quantity in a scrap. There's our call completed."

t don't take long," I commented.

No, it doesn't. Still"—Grayson's was gently meditative—"still, there advantages in knowing where we d. Not that I'm courting trouble! I ask is to let alone and be let alone. if trouble should force itself upon we'll be prepared to do our modest to make the other fellow sorry. ve got the gun and pistols and the amite—oh, yes, I've just cached a sticks a little way down the path. ught it along on the chance that we ht have to rip open the hulk."

Why didn't you tell me before?"

e laughed lightly. "I didn't tell any- , Scott. You wouldn't have been pier, would you, to know that in one the lockers of that sweatbox of a n the Pera was carrying enough explosive to send her and all ard her to a very swift and untime- ate?"

No, I wouldn't," I confessed drily, I fancy my look moved him to more my words.

Don't think I'm keeping you out of y secrets," he told me. "We're tners in this thing, and I'm not rting mysteries between us. As for main undertaking, you see how I'm g about it, deliberately, preparing what may be a protracted job. If ould have been rushed through in a or two, I'd never have bothered ut this shore excursion or setting housekeeping in the hut. But we en't the force or the apparatus for work. As it is, the prospect is as d as we could hope. We're here, on ground; there's nobody else in t; the Zenobia has been hacked to bone above decks, but there's every t on that what was down below when she sailed from Havana is down below yet. Frankly, with conditions as they are, have we any cause to complain?"

"I'm not complaining."

He put out his hand. "Old man, I shouldn't blame you if you did protest—a little. All this makes a queer layout for a fellow used to a real bed and three square meals a day, to say nothing of bath-tubs and electric lights. There's an unescapable difficulty of adjustment, but you're fitting yourself to what twenty years ago we'd have called a new environment; and you're doing it very creditably, for one caught late in life in the adventure trap. The bones begin to set after thirty, you know, and the habits stiffen with the bones. All of which means that I recognize your right to kick——"

"But I don't insist upon it, Grayson," said I, and took the hand he offered me.

He gave me a hearty grip. "Then all's working well," he declared. "We're pulling together, and we'll keep on pulling together; and if we do, it's little more we'll have to fear from human enemies than from ghosts ashore or under water."

CHAPTER V.

The Forehold.

If Grayson's preparations had been deliberate, as he himself had said, that comment could not be applied to his course, once the attack upon the secret of the Zenobia's forehold had begun. He toiled like a Trojan, and, what is more, infused a degree of his energy in his helpers.

Truth to tell, the work was bitter hard. In my case this was due to ineptitude, but for all of us there were the handicaps of scanty equipment. We had, to be sure, a diver's outfit—such as it was—but other material was principally lacking. To build a sort of platform for the air pump—the yacht's deck abreast the forehatch being inches under water—was a task of trouble enough, but the rigging of a derrick for hoisting the cases from the hold involved a deal of ingenuity, simple as the job might have seemed. The wreckers had left nothing like a spar on the hulk—I had almost said they had overlooked no stick bigger than a toothpick—and while there were bits of driftwood on the beach, there was very little to serve our present purpose. It was not until Grayson had stripped the Pera of her fore-boom and pressed into service a plank dug from the sand and the trunk of a young tree, that we were able to set up a clumsy tripod over the hatch. A block being lashed to this contrivance, a line was dropped into the black depths we hoped to explore.

I had supposed that, these preliminaries being arranged, Grayson would be in hot haste to don the helmet and descend, but though he made another test of the air pump he contented himself with the inspection.

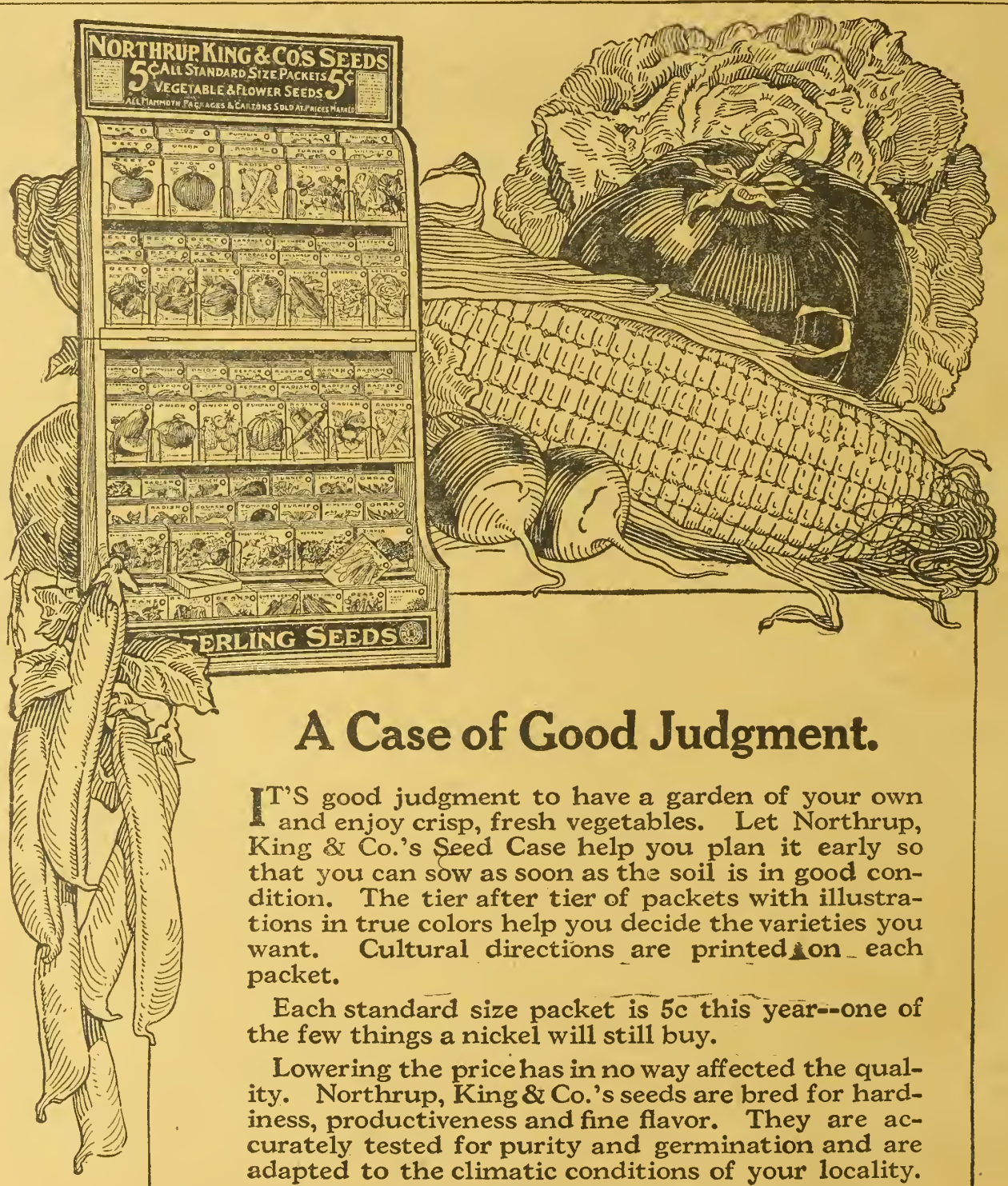
"We'll knock off for the day, Scott," he said. "The sun's getting too close to the sea-line. Besides, when I'm down below I want men above who are wide-awake. No reflection on your zeal, understand. Only, to put it plainly, you look done up. Don't believe me? Here, you Jose! Lend me that glass of yours, will you?"

The swarthy Jose drew from his pocket a little, round mirror, tarnished and cracked, but still capable of reflecting the human countenance.

"Take a peek first, Scott," Grayson advised. "Break it to yourself gradually."

"Nonsense!" said I rather testily. "I'm all right. I—I——"

There I paused; for in the cracked glass was a face at once strangely familiar and grotesquely strange. I am a fair man and sunburn readily—so much summer holiday experiences at home had taught me. Yet there had been no warning of what the tropics might do when one toiled in forgetfulness of perils of sunstroke, hatless, open-shirted, sweating. As a tourist I had been of mind to cultivate a tan—not too rapidly—and had not been dis-



A Case of Good Judgment.

IT'S good judgment to have a garden of your own and enjoy crisp, fresh vegetables. Let Northrup, King & Co.'s Seed Case help you plan it early so that you can sow as soon as the soil is in good condition. The tier after tier of packets with illustrations in true colors help you decide the varieties you want. Cultural directions are printed on each packet.

Each standard size packet is 5c this year--one of the few things a nickel will still buy.

Lowering the price has in no way affected the quality. Northrup, King & Co.'s seeds are bred for hardiness, productiveness and fine flavor. They are accurately tested for purity and germination and are adapted to the climatic conditions of your locality.

For the best assurance of a good garden select your vegetables and flower seeds from The Northrup, King & Co. Seed Case displayed by dealers near you.

NORTHRUP, KING & CO.'S SEEDS

MINNEAPOLIS MINNESOTA

pleased with the results. As a navvy, or longshoreman, or deckhand, I had lost all tan in a new and furiously fiery red, which ranged from forehead to neck. More, the flesh was puffed and swollen in places, above which the skin was cracked or peeling, so that distortion was added to distressful discoloration.

For a moment I stared at my image, dumbfounded. Then I laid down the glass and found tongue.

"Heavens, but I look the most ruffianly scoundrel that ever cruised the seas!" said I. "I'd be afraid to meet myself in the dark, and as for meeting anybody else—Lord, if there were light enough to be seen, I'd be entitled to be shot on sight!"

Grayson nodded. "I've seldom seen the sun to take hold so, even with a far northerner. After all, though, I merely meant to use you as an object lesson for yourself. No profit in needless overdriving of a willing horse, you know. And if we quit early today, it'll only be to make up for it in the morning."

I have dwelt upon this little incident and matter of sunburn because it was to play a more important part in our affairs than either of us dreamed. For the present, however, it merely spelled high discomfort for me, and I don't doubt strained Grayson's politeness, for though I must have been a sufficient ludicrous object, he never cracked a smile or a jest at my expense. To be sure, that night he made it a text for a brief sermon, which like any other sermon was serious enough.

As an economy of labor the four of us messed together, with the skipper serving as cook, and by choice we messed ashore, the skipper and Jose putting off to the Pera after supper, and Grayson and I stretching ourselves on the sand for a leisurely smoke. Then, his eyes resting thoughtfully on the spot where the wreck lay, our leader spoke slowly and gravely. The job before us was likely to prove more toilsome than he had had reason to hope it might be. Since his last visit the position of the Zenobia had changed. There was reason to believe that with the shift of berth had been disturbance of the contents of the hold, and that a quantity of stuff of no account now blocked the way to the mysterious packing cases. All of which meant—and here he found application of his text—that being neither a strong-handed crew nor expert, we might well exercise caution and self-restraint.

"I don't mean loafing on the job," he explained, "but I do mean reason. Take yourself now. You're not in training. You're a convalescent——"

"I'm better than that," I protested.

"Well, I hope you are," said he. "We can't very well have anybody in this crowd sick or hurt. And today, while we worked, we worked hard. I drove all hands!"

"Including yourself," said I.

"Including myself," he agreed. "And I'm as tired as a dog."

"With you there," said I.

He was silent for a moment. Then he spoke half-absently: "It was a chance, one of the chances of war; no dodging it, no preventing it."

"Meaning the shift of berth?"

"Yes. Odd in its way, too."

"Work of a storm?"

"Perhaps, ought, maybe, to say probably. It's the readiest explanation."

"Yet you accept it with reservations?"

"Well, I maintain an open mind on the subject," said he. "Too many weird twists in this affair to take anything for granted. That's the fascination of it, though. If it were all charted and plain sailing, we wouldn't be here, you and I."

"I suppose not," said I.

He bent nearer me. "I want to know what brought the yacht here. I want to know what became of her crew. I want to know why Perham and his master died. I know how they died—from gunshot wounds. I want to know why they were shot, or shot themselves. I want to know the twentieth-century secret that's packed away with Egyptian mummies."

"I'm with you in all those wishes," said I, "or I'd not be here. Still, I own I'd not object to some substantial profit as well as appeased curiosity from this venture."

Grayson shrugged his shoulders. "Oh, there'll be some rakeoff," he said, carelessly. "I don't know the selling price of mummies, but they'll fetch something, no doubt. Even failing that, there's the chance of a yarn to be sold to the newspapers. There's the making of a sensation here fast enough, if we can come at it."

"Oh, certainly," I agreed.

He sprang to his feet, and strode out upon the beach, where he stood, peering to windward.

"Nothing to indicate a break in the weather," he said, as he came back. "Trades ought to hold steady at this season. Give us that and non-interference, and we'll see this thing through to the end, be it bitter or sweet."

Somehow the closing word jarred on my ear. "Sweet?" said I. "Honey from a wreck, that'd beat bread from a stone. You're o'er hopeful, Grayson. There's a romance in this, maybe, but it's an unsentimental romance. The game's all a man's game, there's no place for a woman in it."

He turned on me like a shot. "Since when, Scott, was there a game of mortal man that woman hasn't broken into, if she so willed?"

"True—given fair woman knows the game's afoot," said I. "But in this case how's she to know."

Grayson dropped into his old place on the sand. "I've seen some queer corners of the earth," he remarked, leisurely. "Way back corners, out of sight, forgotten, all that sort of thing. And I've had more or less hand in what might be doing in them. And—well, to put it plainly—none of 'em was quite an Eveless Eden. So now in this matter—perhaps I'm a bit of a fatalist, anyway."

"Meaning that if there should be a woman, we couldn't help ourselves," I queried.

"Meaning that you can't sidetrack Fate."

"Fate being a woman herself, eh?"

"Just as Fortune is, my boy," he retorted. "Fortune and Fate! I believe in 'em both. But, most of all, I believe we're fated to be fortunate in this adventure."

"Whether or not the woman intervenes?"

"Yes; woman or no woman," he said, soberly.

CHAPTER VI.
The Skipper.

I have said less of the skipper of the Pera than that worthy deserved, for he was, in truth, an important member of the expedition.

He was a little fellow of uncertain age and equally uncertain descent, with more than a trace of negro blood and hints of more than one of the white strains common in the Antilles. He called himself a Barbadian, spoke English by preference, and any one of half a dozen other tongues on necessity, sailed his craft by a rudimentary knowledge of navigation and a highly developed instinct, was a good seaman, according to his lights, and had a sailor's handiness at odd jobs. On first acquaintance he seemed lazy, good natured, and stupid, except in matters pertaining to his vocation. Finally, his name was Moses Brown. Whether or not it was come by honestly I do not know.

In the division of labor he was told off to tend the air pump, while Jose and I were particularly charged with the duty of manning the line rove through the blocks attached to the tripod previously described. Grayson himself chose the diver's role,there being good and sufficient reasons for the choice. His was the master mind of the expedition, he alone of us knew anything of the manner in which the cargo was stored. Besides, there were possibilities of discoveries below, of a sort to warrant prudence in passing them on to our assistants. Accordingly, Grayson donned the diver's dress, was duly sealed in the big helmet, and was lowered through the hatch. A rough ladder had been contrived and made fast to the combing to aid in the descent; and there was, too, the line and tackle upon which he could depend in case of need.

That he had seen divers at work was quite certain, but of his practical knowledge of under-water labors I had more than doubts, which were not lessened by his reticence on the subject. It was but natural, therefore, that I watched his venture into the depths with a deal of apprehension, and felt it grow because of the difficulty of following his movements. The water had appeared to be clear enough, and mostly was as smooth as a well within the sheltering walls of the hull, but even directly below the hatch there were tricky shadows which now hid, now distorted, the slow-moving figure. For a professional, of course, the job would have been easy and the depth a trifle, but for an amateur with an old and worn outfit it was another question. Still, Grayson was as prudent as might be, of that I soon had comforting assurance.

There came a sharp double tug on the line—a simple system of signals had been agreed upon—and we drew him up like some clumsy sea monster, hoisted him over the combing of the hatch, unscrewed his helmet, and freed him of its weight. At first he drew in great breaths of fresh air eagerly.

"You're all right" I demanded.

He nodded. "No harm done. I'll—I'll manage it." He spoke brokenly but cheerily. "Skipper, you're a good man on the job—worked the pump very neatly."

The captain grinned. Grayson, dragging his weighted feet along the deck, drew me a little apart from the others.

"There's the devil to pay down below," he said, lowering his voice. "Something's happened, I don't yet know what. It's as if the old hooker'd been ripped and torn and twisted in her vitals, ribs dislocated, and what ought to be inside of 'em all in a jumble. There's a mess of rubbish over the mummy cases, if they're still where they used to be, and it's going to be a handful of a job to clear it away. Besides, I'm surer than ever that she shifted berth since I was here before—and why did she do it?"

"Storm, perhaps," I suggested.

"That's still the first guess and the likeliest. I'm not so certain, though. It'd have needed a big blow and from just the right quarter. And as for the jumble below—well, it's hard to explain by stress of weather."

"How else can it be explained? Great force must have been exerted——"

There he stopped me. "You have the idea! Great force it was, tremendous force. Yet it in't quite as if the force had lifted her up and pounded her on the reef and then repeated the performance. That would have broken her clean in two."

I thought it over for a moment, not very luminously. Once a ship was wrecked and made the plaything of the elements, all sorts of things were liable to happen to her, to my way of thinking. Yet it was odd, this combination of conditions on the Zenobia. I swept the almost submerged deck with a glance, and peered over the side.

"Here, Grayson!" I called out, suddenly. "Have a look at this, will you?"

He drew himself to a place beside me, and noted the line of my pointing finger. Far below the surface of the water he saw, as I had seen, a break in the planking. The opening, as we judged, was three or four feet across and as many in height.

Grayson bent far over the side to study the aperture, and took his time to the task. Presently, though, when he straightened his back, his face showed

(Turn to Page 23.)

ESSEX MOTORS DETROIT USA

Essex Sets World's Long Distance Endurance Mark

3037 Miles in 50 Hours Proved Its Reliability

In its official test of 50 hours to prove endurance, Essex has established its claim as the dominant new type light car. Who ever before regarded a car of its type in the light of such proved performance and endurance? Only specially built racers and a few of the larger, costlier cars have been considered capable of such a test. Surely light weight cars have not been associated with such reliability as Essex has shown.

Proves Essex Economy

This test gives to Essex proof of the greatest factor in motor car economy. Light cars are notable principally for their economy in saving of gasoline, oil and tires. These qualities Essex has revealed from the first. But real economy must also include freedom from repairs and mechanical attention—all costly items.

So what greater proof of Essex economy could be asked than its new world endurance mark.

5869 Miles in 94 Hours 22 Minutes Driving Time

These tests were not made to establish speed records. Two trials were made before the 50-hour run was completed. So, in all, the Essex went 5,869 miles in 94 hours, 22 minutes driving time, averaging more than a mile a minute. Sleet stopped one, after 27 hours, 58 minutes, and 1790 miles. Snow halted a second, three days later, after 16 hours 25 minutes and 1042 miles. The third, begun the next day, went the full 50 hours. These tests were made under American Automobile Association observation on the Cincinnati Speedway.

Think what they mean. The average car is driven little more than 5,000 miles in a season. The average driving speed is probably 25 miles an hour. The Essex went more than a mile a minute for 5,869 miles.

You might expect that a car of its weight would require frequent mechanical attention. But there was no need for that in the Essex.

Doesn't It Settle the Light Car Question?

Essex now adds to its light car qualities the advantage of endurance and reliability. It brings costly car distinction, beauty and fineness to the light weight, moderate price class. Essex cars appeal to pride, and that is why owners speak of them as they do.

Individual owners would never ask as much of a car as did this 50-hour test.

It showed how much more could be expected of an Essex than any one would demand of it.

Every Essex delivered has resulted in an increased demand. Sales passed $35,000,000 in 11 months—a new record.

This latest proof will decide thousands who have only waited for just such evidence that Essex would stand up. All buyers cannot possibly be served. Now is the time to make your reservation.

(124)

Record of Achievement in Livestock Industry.

(Continued from Page 3.)

breed. The senior and grand champion bull was won by Bapton Corporal, an imported bull belonging to Park E. Salter of Wichita, Kan. In the junior bull calf class, there were over 40 entries. The award was placed on an excellent meated youngster, Marigold Knight, who was also the junior champion. In the cow class Park E. Salter was again given the grand championship on Lady Supreme, a senior yearling heifer.

The Elbert county breeders made a very creditable showing under the auspices of their breeders' association. This was a unique plan and clearly demonstrated the wonderful progress being made in breeding Shorthorns in that section. Their entries were displayed in a special enclosure adjoining the arena.

The Shorthorn breed has a type that creates interest among the range men, as well as the farmers. The more progressive breeders are going after a depth of body which, with the scale of the breed, will rapidly place them in strong favor, where the rangemen select that type of bull. This important conformation was in evidence in the Shorthorn showing at the National Western. This department of the show is in the making and looking ahead it is safe to predict that the Shorthorn display will rival all others.

Holstein-Friesian Cattle.

The showing of Holsteins at the National Western was larger by two head than the show at the International in Chicago in December. There were some very good individuals. Practically all of the herds entered were from Colorado. W. S. Moscrip of Lake Elmo, Minn., placed the awards. The showing in some classes was exceptionally strong. This was especially true in the aged cow class. The premium was awarded on the cow Lily Segis Pontiac belonging to M. E. Penrose of Denver. The grand champion female was Columbine Fayne Johanna, owned by Spencer Penrose of Colorado Springs.

Cruse & Son of Mt. Morrison carried away the award on grand champion bull, winning with Denver Pontiac Combination. There were only three premiums awarded in each class in the Holstein show.

It would be advisable to give at least five premiums in a class. This would tend to attract more interest in the show. Among the bulls with strong backing in the show was the recent $5,000 purchase made by Norman D'Arcy of Parker, Colo., of Sir Ollie Homestead Pontiac Segis, whose dam has recently made a record of 1,003 pounds of butter and 21,620.8 pounds of milk in a year as a two-year-old. The Johnstown district was represented this year in the show with herds of Lohry & Wailes and W. A. Purvis. As a whole the Holstein breeders had a very commendable showing.

The Hog Show.

The Duroc-Jerseys shown at the National Western stock show were from many of the representative herds of the middle west. There were many of the popular stretchy animals shown as well as the blockier type which is still liked by many of the farmers.

The hog quarters were cold and damp, making it quite disagreeable for the caretakers to remain and show their herds to the spectators. In order to maintain a hog department in connection with this great show, it is evident that a better place must be provided to house the animals. Remarks were made by a number of hog men, that it was their last time at a Denver show, until suitable quarters could be provided. It would be well for the management to look after this feature, as it is without a doubt one of the most important departments and should be made as attractive to the exhibitors as any of the other branches of the show. It is certainly a hardship on stockmen who come to make up a show when they are compelled to suffer on account of cold quarters.

While the Durocs shown were of good type generally, one feature that was quite noticeable among many of the hogs shown was the weakness in the feet, especially the rear pastern. This certainly should be looked after by the breeders where they are developing such a large heavy animal that is so popular at this time. It is a weakness that needs to be remedied be selection immediately, before it is too late, or the breed will suffer in consequence.

One important aim gained by the Duroc breeders and which was brought out at the show, is the smooth, angular, deep bodied hog, associated with plenty of stretch. This should give the practical farmer what he wants in Duroc breeding.

In the Poland China division much to interest the farmer and breeder was found. One could not help but be impressed with the progress this popular breed is making. A breeder of "reds" remarked at the show that it used to be a red show, but that this year there were practically as many Poland Chinas as there were Durocs. The Poland China breeders are after a type which is very similar to the aim of the Duroc Jersey breeder. They also have the size and smoothness with plenty of bone and, with this, a good depth of body. With the change they have made from the small, quick maturing type of a few years ago, the west is realizing a rapid regaining of favor among the farmers for the Poland China breed. The hog show as a whole was excellent, except for the poor quarters.

The Feeder Show.

There are no if's and and's about the fact that Denver has the greatest feeder show of the world. Buyers come here to purchase the feeders that so often are, later on, the leading prize winners at the other shows of the country in fat cattle classes.

In this year's feeder sale there were 459 carloads of cattle, most all of which were in the show. These feeders showed type and quality the result of years of breeding with selected bulls at the head of the herds. The grand champion load of feeders was a load of Shorthorns raised by Fred Weiss of Elizabeth, Colo. They sold for $25.50 to Harry Hopley of Atlantic, Ia. The reserve champion was a load of Hereford calves owned by T. T. Cuykendal of Roggen. They brought $26.25, the world's record price for feeders. They were purchased by Cherril & Lett of Chicago. This load as well as the champion load of Hereford heifers, were sired by Mansell Boy 2nd, belonging to John E. Painter of Roggen. Mr. Painter announced that this great bull has sired 351 living calves, besides he has 90 heifers now safe in calf to him. The sale of feeder cattle was well attended and the prices realized were considered good. The ordinary run sold from 11c to 12½c.

Carlots of Breeding Cattle.

The breeding cattle in carlots at the yards attracted a great deal of attention from the practical stockmen who attended the show. Very often the importance of the show on the yards is overlooked, and the general public spend all of their time in the arena. However, this year, the alleys and walks at the yards were well crowded with buyers. There was an excellent opportunity to procure registered bulls and heifers in carlots as well as high-grade heifers. In the competition, painter & Sons were the winners on breeding bulls in the classes as well as champion and reserve champion. In the heifer classes, Johnson Bros. of Eagle and Painter & Sons were the winners of firsts.

The offerings of both Shorthorn and Herefords as well as Angus in the breeding classes were above all other previous shows in quality. The breeding cattle market was brisk throughout the week of the show.

Poland China Breeders Meet.

The annual banquet and business meeting of the Western Poland China Breeders Association was held at the Shirley Hotel, January 21. On account of the busy week the attendance was small. There was much of interest to the breeders discussed at that time, along the line of improvement of the breed in the western country.

One of the important things considered was the matter of adding a fat barrow class and a futurity to the 1921 classification at the National Western. These two classes will add much interest to the Poland China show. All Poland China breeders are asked to bear it in mind and to lend their support to the movement. A committee was named to consult with the directors of the National Western regarding this matter. It is the opinion of the hog men that a barrow show will be profitable to the breed in showing what well bred hogs will do in the market classes.

Another matter taken up was the recommendation for judges to act at the next Colorado State Fair and at the Stock show. A committee was also named to encourage the pig club work in this territory.

On account of the great amount of work to be done along the line of fostering the breed in the west, it was decided to conduct a strong membership campaign to enlist the support of the Poland China breeders to assist, through the association, in this work.

The officers selected for the coming year were:

President, Mr. A. D. McGillvray, Boulder.

Vice President, Dr. F. E. Prewitt, Denver.

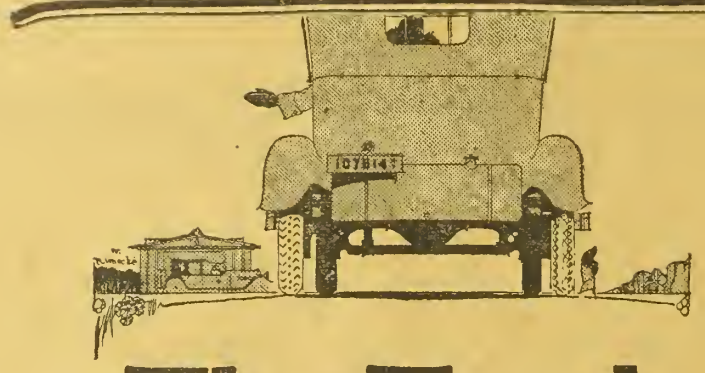
Secretary-treasurer, J. T. Tingle, Ft. Collins.

A Fair Reply.

The small daughter entertained me while I waited.

"How old is your baby sister?" I inquired.

"O, I don't know," she answered. "We have had her nearly a year ourselves."—Chicago Tribune.



The Truth
About Tire Mileage

How do you know that the tires you buy are the best tires you can get?

You should know. Tires differ vastly both in wear and uniformity.

You may be losing half the mileage due you.

The Extra Miles

Large tire users make comparisons. Some compare 20 makes of tires on millions of miles of road. This is done on stage lines, on taxis and on trucks.

Miller Tires are winning countless tests of this kind. And their mileage records have become the talk of Motordom.

You owe yourself a like test. Put a Miller Tire opposite the tire you are using now. Compare the service that you get. It will be a revelation.

We Never Guess

We know the results you will get. Night and day at our factory we are comparing rival tires with Millers. We wear out over 1,000 tires yearly to prove that Millers constantly excel.

Eight geared-up machines each run these tires 650 miles daily under rear-wheel conditions. Four Pierce-Arrows are driven by our men 320 miles a day. And we make constant comparisons on scores of taxis and jitneys.

We make extreme tests, using under-sized tires and heavy loads. But Miller Cords on our factory machines average 15,000 miles.

We have never found a tire which compares with Millers in the average mileage given.

Gained 50% to 75%

Green & Swett Co. of Boston say they have put Millers on hundreds of big cars which had used other makes. Mileage increased 50 per cent to 75 per cent. Blow-outs were eliminated and only six tires in each thousand come back for adjustment.

They Do Not Vary

You will also find that Millers do not vary. Every tire is signed by the maker and inspector. Both are penalized if a tire comes back. So they don't let faults get through.

There are numerous large cities—like Buffalo—where not a single Miller Tire last year came back for adjustment.

We also prove daily that the tread will outlast the tire. Every lot of tread stock is vulcanized and tested in our laboratory. Not one Miller Tire built under these methods has come back with the tread gone.

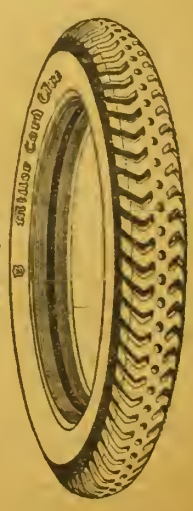
So we know every day that Miller Tires will win tests when men make them. Stop guessing. Let Millers show you what new-day tires can do.

Try a Miller Tire and watch it. If you buy a new car this spring, specify Miller Tires.

THE MILLER RUBBER CO.
Akron, Ohio

Tread Patented

Center tread smooth with suction cup, for firm hold on wet asphalt. *Geared-to-the-Road* side treads, to mesh like cogs in dirt.



Miller Tires
GEARED-TO-THE-ROAD

Specify Miller Tires on your new car if it lacks them

Registered U. S. Patent Office
Cords or Fabrics

To dealers we offer a rare opportunity

Witch's Island.

(Continued from Page 21.)

that the minutes had been wasted.

"Navy work, that" he said. "Test of some sort. Torpedo experiment most likely, with reduced charge, you understand."

"I don't understand fully," I admitted. "Full charge of a Whitehead ought to have blown her sky-high. Or, again, it might have been a little demonstration with a contact mine. Navy boat, you remember, heard of the wreck and verified the report. Her captain, maybe, improved the opportunity to let his torpedo lieutenant have a little fun—result's no fun for us, confound him!"

Grayson drew a long face, and I suspect mine matched his. "If they experimented," said I, "they'd try to find out what the experiment amounted to. They'd have their own divers, and they'd send them down to count the pieces. They may have fished up the mummies and——"

"No!" cried Grayson. "They wouldn't be looking for cargo in a yacht, and the mess down below there now shows no effort was made to clear it away."

"But if they had found and removed the cases beforehand?" I persisted.

His hand fell heavily upon my shoulder. "We're playing none of those 'if's' to win," he said, sharply. "The cases are there—where they belong, where Fate is saving them for you and me. I know it, I feel it in my very bones!"

It was bravely spoken, and there was determination in the manner in which he sang out to the skipper to stand by the pump while I readjusted the helmet. Yet I thought there was a shade of haste in his sccond descent into the hold, and I was sure that he lingered there longer than on his first visit. Moreover, when he came to the surface both his physical endurance and his temper appeared to have been under strain. He clung to me for support, and when his helmet was removed fell to calling down a vigorous, if panting, sea blessing upon the skipper. There had been trouble with the air supply, and Grayson also charged inattention to his signals.

The skipper took it badly. His yellow face was contorted in a savage grin, which showed his teeth, and set his thin black moustache and beard a-bristling. To this day I've never been able fully to account for the rage into which he flew; for, as has been said, he was apparently a good natured, and none too quick witted, nor quickly stirred fellow. Perhaps there was enough of the cat in his make-up as well as in his looks—his temper surely did offer a strong suggestion of the feline—to make it a perilous matter to rub his fur the wrong way. As it was, he ripped out a hissing Spanish oath, and then in very intelligible English bade Grayson go to hell.

Now, Grayson, as you know, was by no means stripped for combat, being still encumbered by the diver's dress; and an instant before had seemed almost exhausted by his labors under water. Yet thus burdened, there showed a side of him I had hardly suspected, for all his yarns of knocking about in queer quarters. Somehow he put agility into his weary limbs, splashed across the deck to the skipper, who crouched as if for a spring, and clutched at the sheath knife slung at his belt. Grayson, though, was too quick for him. An arm shot out, a fist struck the skipper between the eyes and dropped him in his tracks. Then, before the man could recover himself, Grayson bent down, caught him by the collar, jerked him to his feet, and backed him against the rail.

"You infernal water-rat, you mongrel scum of creation!" my partner shouted. "Mutiny, will you? Soldier on your job, will you, and expect me to go on my knees to you and beg you kindly to do this, that, and the next thing? I'll teach you a lesson. I'll show you who's master here. Make another break like that, and I'll bash your head in and drop you overboard to let the sharks finish you!"

Instinctively I had snatched up a wrench—the weapon nearest at hand—but Grayson was in no need of assistance. The skipper offered no resistance. His hand dropped from his knife-hilt, and he begged for mercy till Grayson, with a shake which made his teeth rattle, released him, and stepped back.

It was all over. The question of mastery had been settled. There had been no knife-play, no blood-letting. My glance strayed from the cowering skipper to Jose, who stood stolid as a block of wood, and passed to Grayson, who was watching the recent rebel with a cynical smile on his face.

Yes; the incident was closed. I eyed Grayson with a new respect, and yet with a lingering doubt. Was he not taking too much for granted? Was there not something vaguely disturbing in the neutrality of his own man Jose, and had not the skipper cried quits a shade too readily? But doubts of the sort were not troubling Grayson. He turned to me.

"It was navy practice work, sure enough," he said, "but I've come upon nothing to show that it was more. Not that I've reached the cases, but the report's so far, so good."

"So far, so good," I repeated, but I question if my thoughts and his ran precisely alike.

(To be continued.)

Starting Sweet Clover.

Along our ditches and in fence corners, sweet clover grows luxuriously, but all attempts to secure a stand in fields, when and where it is wanted, are apparently unsuccessful in this locality. I have sowed both hulled and unhulled seed, in September, March and April, followed by plenty of moisture to germinate other seeds, but have failed to get a stand. The ground has been well prepared, well packed, and the seed sowed very shallow. I have always been successful with alfalfa seed sown in this way. The soil here is heavy clay and probably does not germinate seeds as quickly as lighter sandier soil.

I would like some practical information on this proposition, if possible from successful growers.—Harold Ketner, Broomfield, Colo.

What Doctor Cook Says.

Success of stands of sweet clover on ditch banks is undoubtedly due to a constant addition of seed to the soil year after year as the growing plants mature their seeds which fall on the ground and await the propitious time to germinate. There is always an excessive amount of seed on the soil through a continuous yearly sowing and those seeds of high germinative quality naturally germinate in soil that improves year after year. In other words, there should be no comparison made between sweet clover growing on ditch banks and sown as it usually is in fields.

A vital necessity in getting a good stand of sweet clover is, No. 1 seed, full of vitality and of high germinative power. It is well worth any one's consideration to really understand the full meaning of vitality and germination, because many partially understand the meaning and so many failures are due to poor seed.

The best answer that I can give to your correspondent's letter is to describe how a farmer in Weld county learned to successfully get a stand of sweet clover. The suggestions were mine.

Early last fall he thoroughly raked a portion of his garden, making the surface soil fine; then he spaded it; then immediately after spading he worked the surface with a rake compacting it, getting the soil fit to sow as if he intended sowing onions. He then sowed several samples of yellow and white clover seed with a small garden drill and with a press wheel, using a minimum amount of seed. Result? Seemingly every seed planted germinated, although those of poor vitality will probably not survive later on.

For fields I would suggest similar work along the following lines: Thoroughly disk land before plowing, plow deep with mold board plow, when soil is in right condition, not wet nor too dry, disk same day as plowed (not when wet), object being to compact or firm plowed soil from near top to bottom. If necessary, weight the disk. Then harrow with steel drag. Harrow the soil to a fine state of tilth, sow shallow with a press (concave) wheel drill. Light soils can be sown deeper than heavy land, especially from now on. Better sow a little more seed than usual where the past experience shows against getting a good stand. Let us not forget the fact that sweet clover seed is often very finicky about starting.

Use unhulled seed from now on till fall. Would suggest sowing in June (assuming land has been kept free from weeds and was plowed early), or at least when soil is warmed up and vegetation has started and is on its way to maturity.

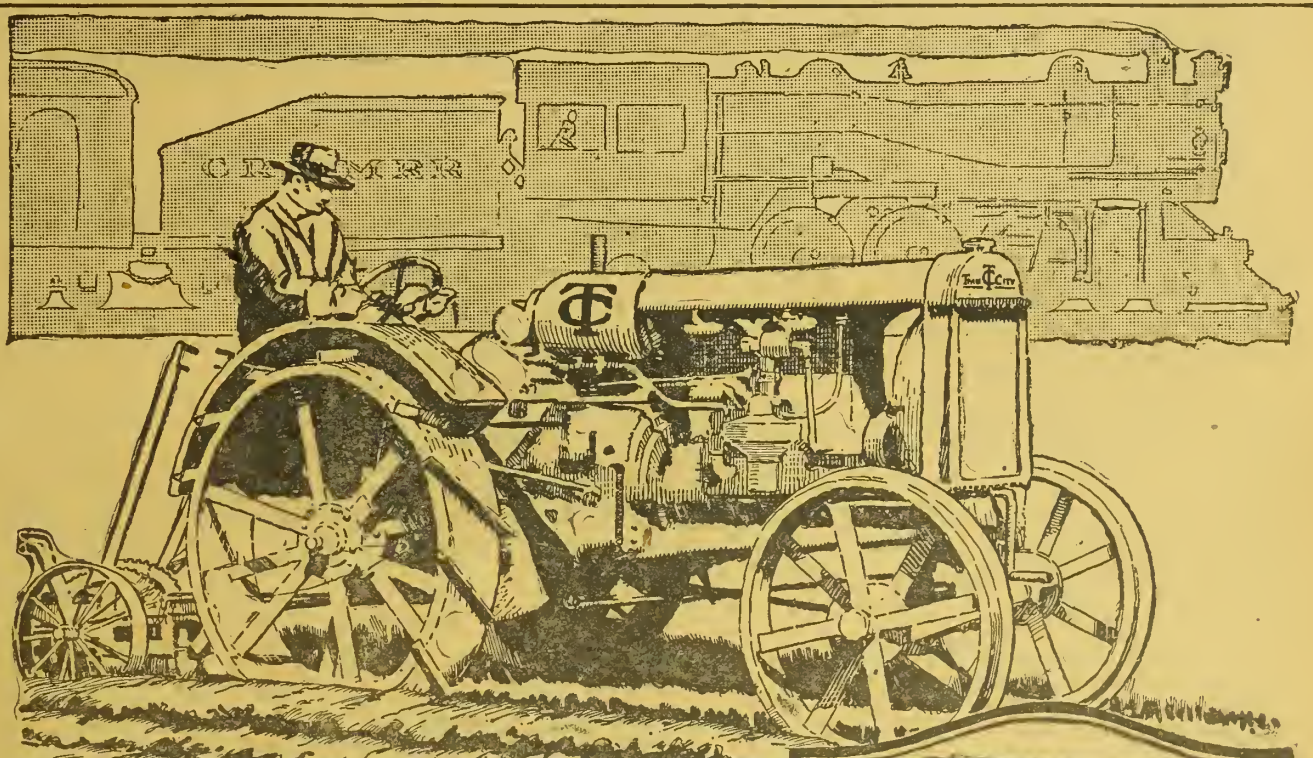
The above suggestions should give you some ideas relative to getting a good stand of sweet clover. It is not easy to thoroughly cover the subject in a short letter, especially not being thoroughly conversant with the soil and climatic conditions. Soil and climatic conditions vary within a few miles of one another in Colorado and sometimes require different treatment.—Dr. Vernon T. Cooke.

No doubt some of our readers who have had experience in getting a stand of sweet clover will be able to add to the suggestions of Dr. Cooke. We would appreciate hearing from others. —Editor.

Buy Seed Corn Early.

Owing to the severe drouth in northern Colorado in 1919, the normal amount of good seed was materially cut down. There will be a heavy demand for seed in this section. Farmers having good seed with good germination should hold the same for spring sale. Those having to purchase should purchase early, as the seed supply is likely to be short long before the crop is planted.—Colorado Agricultural College News Notes.

According to the 1910 census there were almost 11,000,000 men in the United States engaged in agriculture.



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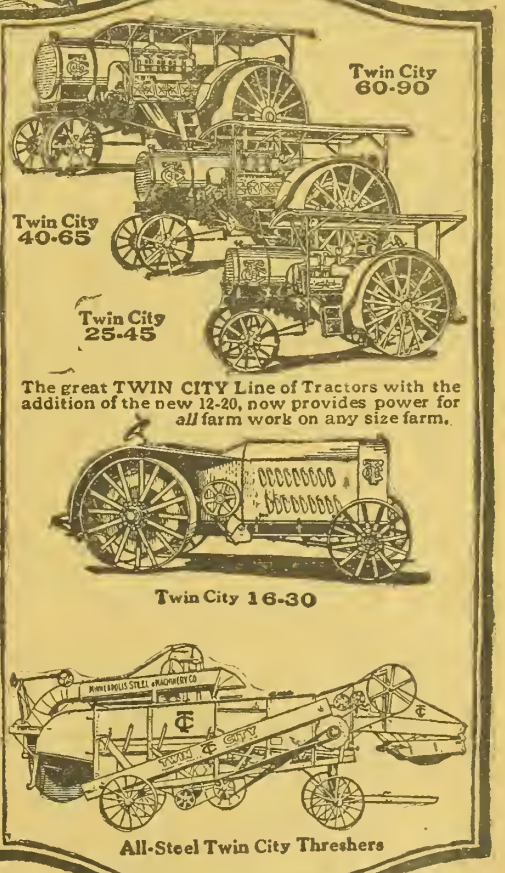

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Changing the Air Into Cash.

DR. L. S. DIJKSTRA, Holland.

On my return to Holland from America I passed several pieces of land that were before the war mere waste, infertile pieces, but represent at present a high value. I wondered what had enabled the owners of that waste land in so short a time and under such abnormal circumstances to do such things and therefore, made a visit to one of the small but well conducted farms.

The farmer, a well educated and up to date man, told me that the key to this success was simply "the abundant use of elbow grease and changing the air into cash."

As an old American farmer I thought it worth while mentioning and expatiating a little on this topic. Though certainly not a new way of making money, it has been a comparatively short time since the American farmer has learned how to do it. The air that surrounds us consists of about four-fifths "nitrogen," the most costly element of plant food. In fact, nitrogen is generally four times as valuable as the other elements of plant food and no wonder that every economical farmer tries to obtain as much of it in the cheapest manner possible. The cheapest way would surely be for the plants to use it directly from the air, but alas, no plant is able to gather the nitrogen in that form. However, some plants have their assistants, who will do this work for them and these assistants we know as "bacteria." Bacteria are little microscopic plants that cause at one time disease, such as foot and mouth disease. Another time, however, act the part of lining the farmer's purse well; and from that point of view we will consider them here.

It is a well known fact that certain plants, such as clover, beans, and vetch, with the help of their assistants, the nitrogen gathering bacteria, approproate the nitrogen from the air and store it in the nodules on the roots, from which they further transport it into the stems, roots and leaves. When such plants are allowed to decay in the field they not only enrich the soil with nitrogen for future crops, but also enable the farmer to obtain good crops on soils which before contained little nitrogen. It is a matter of course that such crops of vegetables pay the farmer well, not only in that he gets a good paying crop, but generally this kind of plant has long tap roots that penetrate the subsoil and bring other plant food, as well as the nitrogen, to the surface, so that they form at the same time a good subsoiler. And in the third place, these plants add quite a bit of organic matter to the soil in the shape of humus, altogether good properties that are worth while considering in the present time of high priced fertilizers. It is further, a matter of course that these legume crops need from time to time lime, potash or phosphorous fertilizer, but this little sacrifice is a thousand times surpassed by the profit of the legume crops. Moreover, there are several soils that do not need potash at all, so that a lime and phosphorous application alone will do.

Furthermore we should not lose sight of the conservation of the stable and barnyard manure. Stable manure is an excellent fertilizer, as it contains so many different kinds of bacteria that make the manure and other organic matter available for the plant that the importance of a good saving of the manure can therefore, never be overestimated.

To return to my remarks about how this European farmer made such a success in a few years and the experience and methods this man followed and is still following. He had followed different systems and the past year his farm books showed an average of 1¼ tons cured pea and clover hay per acre, which he valued at about $30.

Suppose he had plowed under this pea and clover (which he did, partly), then he added to the soil about 56 pounds of nitrogen, 13 pounds of phosphorus, 42 pounds of potash. Assuming further that the nitrogen is worth 40 cents, the phosphorous and potash each 10 cents, then this man would have, aside from the humus and subsoiling profits, of course, a plant food value of:

56 lbs. of nitrogen at 40c....	$22.40
13 lbs. of phosphorous 10c...	1.30
42 lbs. of potash 10c.....	4.20
Total.....	$27.90

In this case we see that though the feeding value and the manure value differ about $2, this farmer thought it a big mistake in saying that they were equal per acre, for experience taught him that the humus produced by plowing under legume crops on new soils represented a high value. Grazing the crops he did not think advisable, because of the danger of the cattle bloating or food loss by tramping. In addition to this conversation with this real economical farmer, I would add that though his whole farm consisted of only 42 acres of new land, a small boy, his wife and himself took care of the whole farm, including 28 cows and the bringing of the milk to a small town every day. He assured me that though he had a rather laborious task, he was contented with his progress. This is again an example of what man can do in this world, when there is "a clear head and a good will."

Timnath Puts On the Finishing Touch of Progress.

(Continued from Page 5.)

represents a present value of $83,200 and makes possible an efficient elementary and a four-year high school where two years ago there were only one-room schools.

Next comes Center, and although this school is located in Saguache county, still a part of this district lies across the line in Rio Grande county. Here a truly wonderful building is nearing completion. It is located on a thirteen-acre site and is 308 feet long, with class rooms for the elementary department and for a junior and senior high school. It has offices, library and reading rooms, rest room, one of the finest school and community auditoriums in the state and a fine gymnasium, besides laboratories for agriculture and home economics and well equipped shops.

Next comes the town of Del Norte, where eleven old districts have consolidated and ten schools will be abandoned. This district joins the Sargent and Center districts. A bond issue of $95,000 has been voted and plans approved for a fine high school building in addition to the two Del Norte school buildings which will still be used for the lower grades. Here ten outlying one-room country schools united with the town without a dissenting vote, and this large community is now taking its place along with the best school systems in the state.

Building a Junior High School.

Last, but not least, in the quartet, is Monte Vista, the queen city of the San Luis Valley. Here again the country districts consolidated with the town as the center, and not to be out done, or even equalled by any of the others, Monte Vista is now completing a $65,000 junior high school building and has voted the bonds and approved the plans for a senior high school building to cost in the neighborhood of $150,000. This is rural school improvement in the superlative degree. Were it not for a defect in our consolidation law, Rio Grande county would now be solidly consolidated.

The San Luis Valley is one of the leading agricultural districts in Colorado. It is noted for its fine herds of Shorthorns and Herefords and for its large flocks of sheep. It is even more famous for its Poland Chinas and Durocs, being the leading pork producing section of the state, while it is one of the leading potato producing sections of the west. These and other interests are enough to make its fame secure, but it has gone even further, and is fast perfecting a system of consolidated schools that cannot be equalled in any like area in the United States.

The next big chapter in the history of rural school improvement in Colorado will be the dedication of the fine new consolidated school buildings at Center, Del Norte and Monte Vista.

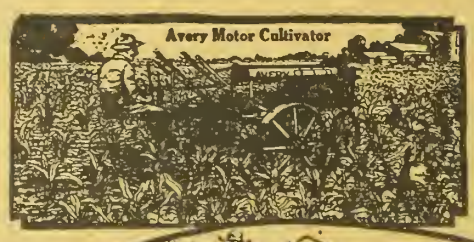
Besides the ninety consolidations already effected, there are at least fifty other communities where active campaigns are now in progress.

An Unnecessary Loss

One of the principal reasons for the high price of leather and everything made from leather is the great loss from imperfect hides. Branding and barbed wire fences are the cause of many imperfections, but probably the greatest source of loss are the injuries caused by grubs and ticks during the life of the animal. Ticky hides make leather of low grade, while grub holes limit the area of sound leather obtained and the uses to which it can be put. Yet it costs as much to tan and finish as leather from good hides.

When it is fully recognized by cattlemen that a cereosote dip will eradicate these parasites at a cost of a few cents a head, there will be little excuse for adding this needless expense to leather manufacture.

Let Western Farm Life Service Bureau help solve your farming problems. All questions answered promptly.



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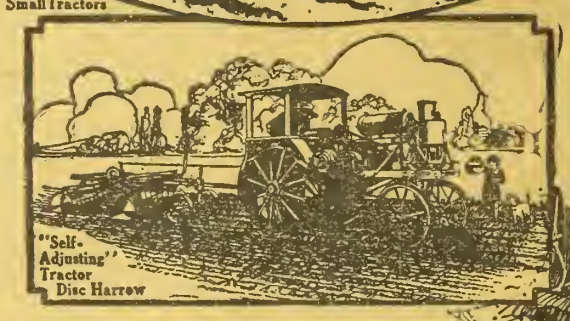

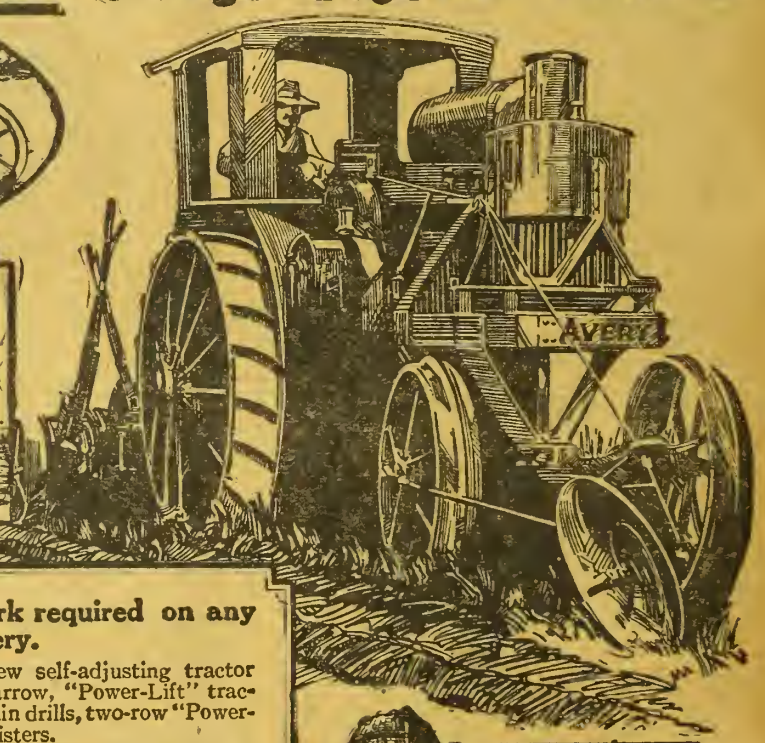

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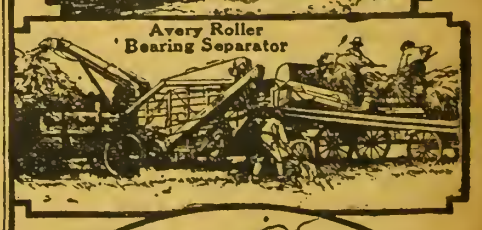

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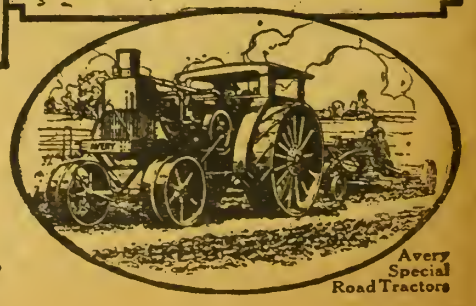


Avery Special Road Tractors

Clark's Travel Letter.

Thos. Jefferson Putnam,
Salem, Colo.:

Dear Tom—I must write to you about my trip to Huerfano county a few days ago. County Agent Kidder invited me to accompany him on a livestock tour. He is trying to get his farmers to raise better stock, so we visited a few of the farms having good stock. We could not visit all of them because they are too numerous. Mr. Kidder's idea is to get the farmers to use only good purebred sires. He is right in this matter and you would be surprised Tom to see what inferior sires some farmers are using. It is too bad that our farmers did not take advantage of their opportunities years ago and build up strong studs throughout the country. We have paid Europe millions of dollars for superior blood and only to dissipate a large part of it. There is too little now to show for it. It is to be hoped that the American farmer will do better in the future.

Huerfano county is rather rough in contour and better adapted to livestock than to any other type of farming. There is a great deal of good arable land and this is used largely for growing hay. Some corn is grown and the outlook for more corn in the future is very bright. Young Mr. Goemmer, a son of a Hereford breeder, raised a considerable amount of Minnesota No. 13 last year and so far as he can learn it is superior to the native corn that has been grown there for years. He weighed out an equal amount on the cob of Minnesota No. 13 and native corn, and the former yielded 20 per cent more shelled corn than the latter. He is very much encouraged in securing a better corn for the farmers than they have grown heretofore. So far as I can see I think he has every reason to feel so. There is no comparison between the two varieties of corn that I saw, and Minnesota No. 13 was as good as any I have ever seen.

Our first stop was at the farm of Charley Martin. He has two excellent Hereford calves of Beau Mischief breeding. They are square, growthy and carry a tremendous amount of natural flesh. If they had been fed more liberally and pampered a little they would stand a good chance of winning high places. Mr. Martin is free to say that he and others do not give attention enough to the feeding. I tell you, Tom, good breeding is important, but good feeding is more important. The feeding is 75 per cent or more of the business. The best animal that ever lived will die if it is not fed. Feed is necessary to bring out good qualities. Mr. Martin also had a fine bunch of Duroc Jersey hogs that were being fed for market. They were on corn that was grown on his home farm and that leads me to further think that Huerfano county is bound to grow lots of corn in the future.

Our next stop was at Henry Carson's. He has 32 head of fine, high grade Hereford steers that are being fitted for market. He was feeding straight alfalfa hay. It is a fine bunch of cattle, but it would have been better and the profit would be greater if silage was fed along with the alfalfa. Hay alone is a too expensive method of feeding and the profit is always low.

We also made a stop at the farm of Harry Fielding. He is feeding 28 Hereford steers alfalfa hay and ground barley. Here again I mentioned silage, but found myself in the minority on that question. I have been in Huerfano county lots of times and feel sure that Russian sunflowers can be successfully grown for silage. Conditions that I have seen there will produce 30 tons to the acre. Silage added to the ration will increase the profits many times and many a case will result in a profit that otherwise would be a loss. While looking at Mr. Fielding's steers I asked the farmers how much more per hundred would a good steer bring than a poor steer. They were unanimous in stating $3.50. That would give a good 1,000-pound steer an increased value of $35 over a poor 1,000-pound steer. Then I asked them how many calves under their conditions would a sire get in one year and how many years would he serve? After some discussion they agreed that he would sire not less than 40 calves in a year and continue to do so for four years at the least. Well, don't you see Tom that under these conditions a good sire would be worth $5,600 more than a poor one. Now then combine silage and alfalfa with good breeding and the greatest profit is secured. Some of the steer feeders in the state can increase their profits at least $50 per head.

The next stop was at the farm of Albert Park's. Mr. Park bought a Winton Six that day and rode home in it for the first time. We were so startled at it that I did not know for a while what might happen, but Mr. Capps was with us and in his cowboy way circled around the crowd until all the fellows calmed down and finally went to chewing their cuds. I have known Mr. Capps for several years and have come to admire and love him. He knows every badger hole and school house in Huerfano county and for fifty years he has been building roads, school houses, churches and using his time, money and influence for everything that is good. We need more such men Tom and may the good Lord bless them and lengthen their days.

I was going to tell you about Mr. Park's cattle. He has about 250 head of Herefords and many of them are purebred. He uses the best purebred sires procurable. His best bull is a Beau Mischief, for which he paid $700, and his next best is a Domino for which he paid $500. He also has a Fairfax bull and many excellent cows. He is getting all purebreds as rapidly as possible. Mr. Park also raises a great many hogs and this year he had them hog off his corn and he speaks very highly of the system. While he has an excellent herd of cattle he finds hog raising also profitable and thinks he makes as much from his hogs as he does from his cattle.

A stop was made at Firm Brother's farm where so many famous purebred Herefords have had their origin. The boys were fitting up a big bunch for the Denver stock show.

Mr. Kidder has been talking co-operative shipping of livestock to his people for a long time, so we stopped right in the road, talked the matter over and a committee was appointed to investigate conditions, to enlist interest and in the near future to call a meeting in order to perfect an organization. We learned on this tour that there is livestock enough in Huerfano county to make such an organization a great success and save the farmers large sums of money. The farmers down there are working together in fine shape and are destined to lead the way for county farm bureaus in Colorado.

R. W. CLARK.

Barley Versus Corn as a Hog Feed.

With corn at the present high price hog feeders are trying to find a good feed which can be purchased more cheaply. Barley costs less per pound and hence is being used by a large number of feeders. The University of Missouri College of Agriculture has results from a recent feeding trial which indicate that barley makes a very satisfactory corn substitute.

Twenty hogs, averaging in weight 130 pounds, were divided into two lots of ten hogs each and full fed for 49 days. Lot 1 received ground corn nine parts, shorts two parts, and tankage one part, while Lot 2 was fed this same ration, except that ground barley was substituted for the corn.

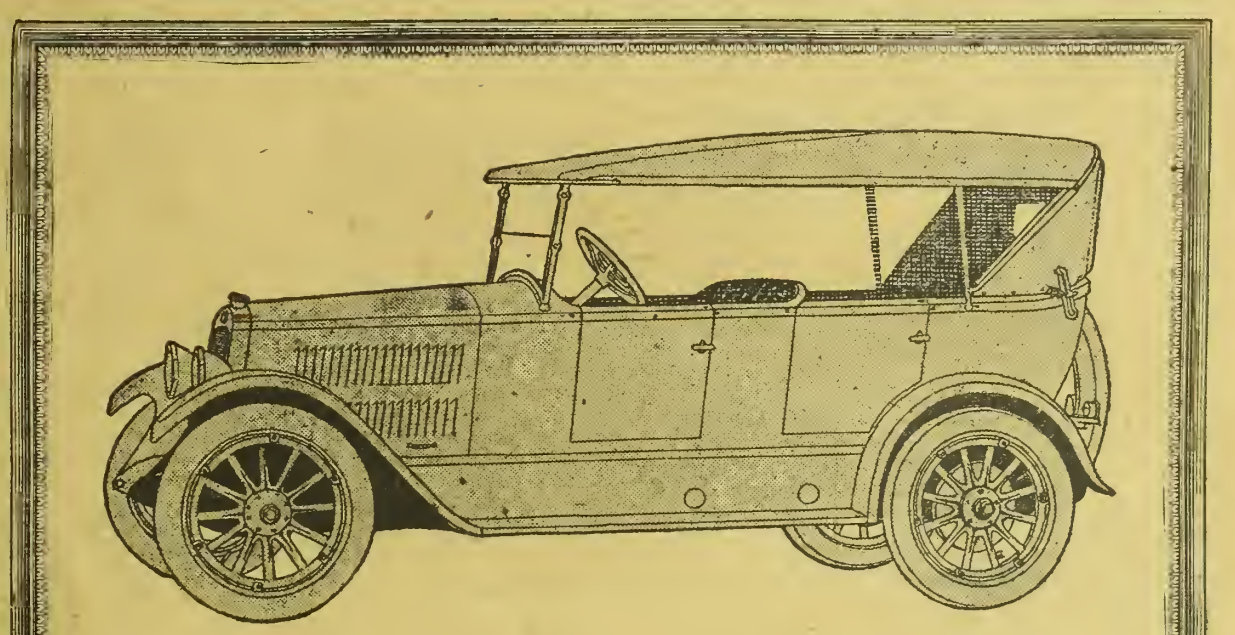
At the end of the feeding period the hogs fed corn had gained an average of 1.93 pounds per day, while the hogs fed barley gained an average of 1.85 pounds. Thus the hogs getting corn gained more rapidly, but they also consumed more feed.

Lot 1 (corn, shorts and tankage), gained 100 pounds on each 409.9 pounds of feed, while Lot 2 (barley, shorts and tankage) required 426.6 pounds of feed for 100 pounds gain. In other words, for each 100 pounds of pork produced about 4 per cent more of the barley ration was required than of the ration containing corn.

These results are inside the allowance usually made, namely, that ground barley has about 10 per cent less value than corn as a swine feed.

Owing to its hard flinty covering barley should be ground or rolled for hog feeding purposes. Since its composition is very similar to corn, like corn it should be supplemented with feeds like shorts, tankage, linseed oil meal or milk by-products.

Seed potatoes were marketed through the Fremont county, Idaho, bureau for $3.25 per hundred, when the local price was $1.60.



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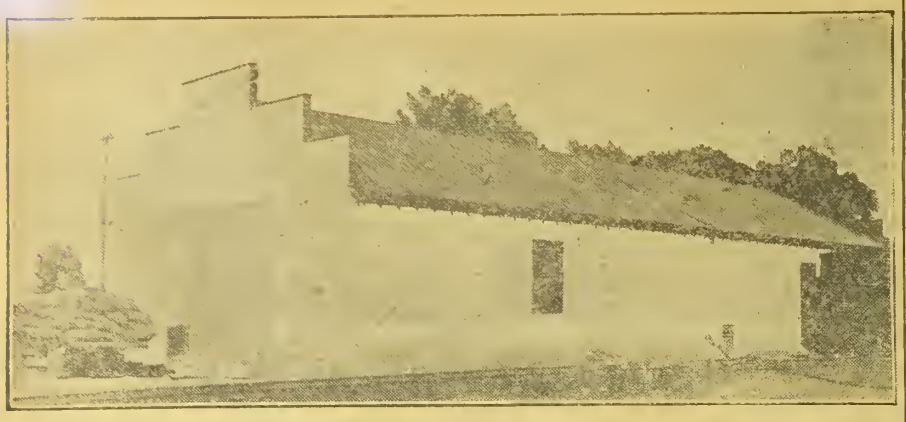

Sixty Carload Potato Storage Cellar of Gibson Produce Co., Monte Vista, Colo.

Concrete Potato Storage.

The section around Monte Vista in the San Luis Valley is particularly noted for its great potato crops. Large areas are devoted to potato growing and naturally the problem of storage until prices become stabilized and the potatoes are needed, becomes a keen one.

When we decided to enter this field we began to look around for the best material with which to build. After a little investigation we settled on concrete because it maintains a uniform temperature in the cellar, is fireproof and easy to keep clean and sanitary.

The cellar as built is shown in the accompanying photograph. It is 40x 125 feet and has a capacity of 60 car loads of potatoes.

The walls of the building consist of two solid reinforced concrete walls each 8 inches thick, with an 8-inch air space between. All doors are of the double refrigerator type. Ventilation of both stories is secured by means of flues regulated by dampers. The cellar floor is of concrete, the upper floor of wood. There is a ceiled roof over the upper story on a level with the plate which forms a small attic. The roof is covered with composition roofing.

A number of labor saving features are to be installed as soon as possible to make easier the work of handling the many loads of potatoes we receive. While the cellar was finished as recently as the first of June, and has not had a thorough trial every indication is that we are going to be well satisfied with it.—B. A. Gibson, President Gibson Produce Co.

How Swadley Corn Originated.

Editor Western Farm Life:

Having seen so many different reports of the origin of the Swadley variety of corn, I wish to state what I know about it. Upon coming to Colorado, as I did in 1882 from the corn country of Illinois, of course, I wished to plant corn. On inquiry of the late Rev. J. S. Flory, then of Hygiene, Colo., as to the best variety for success, he recommended the Swadley, giving me the history of it. He claimed to personally know Mr. George Swadley, who, when a mere boy, left his parental home in Virginia in the early sixties and located in the then famous gold field of Golden, Colo., and, after reaching the age of eligibility, he took up a homestead on the famous Wheat Ridge, between Denver and Golden. He was quite successful.

After having improved the homestead and equipping it with all necessary stock and implements, and having a little money of his own, he concluded to return to his parents and report his whereabouts. Upon his return to the west he brought with him the choicest of Viriginia corn, which proved to be a leading success in Colorado ever since. It was soon recognized and christened (properly) Swadley corn, which I have planted and grown successfullly ever since the spring of 1883. I have also had experience with this corn for thirty-six years, growing it at an altitude of above 5,500 feet without irrigation.—H. H. Winger, Mesa, Colo.

A DRY Farming Program 12ptbflc..

Writing from my experience on a half section of dry land in eastern Colorado, I would say, as a rule the dry land farmers are "bucking the tiger"—that is, gambling. One year they put their farm to beans and next year all to wheat, and each year they buy their feed. Then they will go in the hog business and again into the dairy business, and out of one thing into another and in each case they expect to get rich right away. And about 90 per cent of them stay as poor as Job's turkey.

To win out is what we want. The first necessary equipment is brains; to know what your farm will produce and how much stock it will furnish feed for the year through, and what kind.

Here is my program: Four good horses, eight good cows, two or three good brood sows, with two litters each a year; six dozen hens. One hundred acres of the half section broke; put 40 acres to beans and 40 acres to a good yellow dent corn and 20 acres to millet, cane, etc.

Rotate your crops. Keep manure hauled and put it on your corn ground and list your corn under the manure. In each case corn and beans should be planted deep with a lister and if the ground bakes before the plants come up the furrows should be dragged with small logs, so as to break the crust. Stick to this program year in and year out and watch your bank account grow. This is possible on most any half section in eastern Colorado.—One Who Has Won Out.

Tractor Plowing Problems.

Plowing with tractors presents some problems that never bother the man who uses horse-drawn implements. It is necessary to lay out fields, so that a high-class job of plowing can be done over the entire area with the minimum use of a horse-drawn plow in starting and finishing the work, says Farmers' Bulletin 1045, recently published by the United States Department of Agriculture, which gives in detail some of the best methods for laying out land and plowing with tractors. The methods in general use are divided into two classes in the bulletin—those in which the plows are elevated and no plowing is done across the ends, and those in which the plows are left in the ground continuously. In most cases better plowing can be done when the plows are idle across the ends of the field, and for this reason the methods of this class are more popular, but many farmers prefer the other methods, as they eliminate waste of time and labor.

Plowmen using tractors wish to reduce to a minimum the time spent in running and in turning with plows out of the ground. While it is necessary to do some traveling while the plows are idle, care should be taken not to do too much of it, as it reduces the number of acres which can be plowed in a day, making the tractor that much less efficient. Short turns, however, are awkward for most tractors, and where such turns are necessary the operator often has more or less difficulty in getting the outfit in the correct position for starting into the new furrow at the right point. Some tractors turn more easily in one direction than others, and this should be taken into consideration in laying out the fields.

The advantages of plowing by the methods in which the plows are idle across the ends of the field are that the short awkward turns are eliminated, except in some cases at the beginnings and ends of the lands, and usually less space will be left at the corners to be plowed with horses. The advantages of the other methods are that little or no time is lost in traveling with the plows out of the ground, and that ordinarily the number of dead furrows and back furrows will be considerably less.

In using the first-named methods it is necessary to measure the lands in the center of the field accurately, leaving an equal area on all sides of the field in which to turn the outfit, and which can be plowed last by running the tractor completely around the field several times. If one end of the field is unfenced the outfit can be pulled out into a road or lane, or an adjoining field, for turning. It may be preferable to plow up to the fence on the two sides as the body of the field is

A Drop in the Bucket

Every householder's expenses are divided into a number of items; food, rent, clothing, fuel and light, house-furnishings, insurance, education and amusements, sickness—and the telephone.

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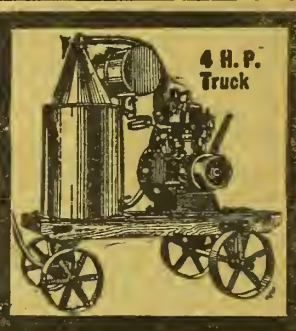

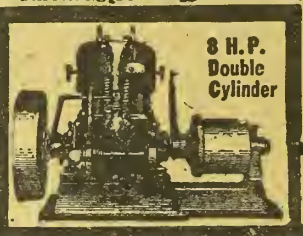

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being plowed, and leave the headland only across the end of the field which is fenced. The width of the headland will depend largely on the turning radius of the tractor. With easily handled outfits it is not necessary to leave more than 15 or 20 feet, but plenty of room should always be left, and for this reason headlands 50 feet or more in width are preferable to narrower ones.

Peculiar Cattle Disease.

Numerous reports have been reaching the veterinary division of the Kansas State Agricultural College that a peculiar disease was affecting cattle, causing death in many instances. Almost invariably the owners stated that the disease commenced with severe intestinal discharge of a watery nature which soon became bloody. In young animals this bloody diarrhea is in a large percentage of affected animals followed by death, though mature animals are more resistant and many of them recover.

The veterinary staff of the college has investigated several of the affected herds and post mortem examinations have been held. These were not sufficient positively to identify the disease, therefore some of the tissues of the dead animals were brought to the laboratory for examination, which disclosed the presence of a large number of microscopic organisms in the tissues of the intestines. Based upon the foregoing examination, a diagnosis was made of "red dysentery of cattle."

As soon as an animal is discovered affected with the foregoing symptoms, it should be promptly isolated from the remainder of the herd. A complete change of feed is always a good plan.

In view of the fact that the causative organism is in the intestinal discharge of diseased animals, the latter should be disinfected as promptly as possible by covering with unslacked lime or a 3 per cent water solution of hog dip. Great care must be taken that the feed of healthy animals is not contaminated by the intestinal discharges of diseased animals. Such contamination can be prevented if the person taking care of the sick animal will wear a pair of rubbers or overshoes, which are to be removed when leaving the stall or barn occupied by the sick animal. Prevention of the disease according to the foregoing method is far more effective than curative measures.

It is best to consult a competent graduate veterinarian when symptoms are discovered. In a general way it may be stated that intestinal disinfectants and diarrhea-controlling remedies should be given. In some instances it is a good plan to inject substances of a comparatively non-irritating character into the rectum to control the bleeding, because when death results it is usually due to loss of blood.

Dr. Glover's Comment.

Red dysentery has been reported among the cattle of Kansas. This is a very uncommon disease, but positive diagnosis having been made at the Kansas Agricultural College, the presence of the disease with its inevitable consequences must be acknowledged. It is caused by protozoa (Coccidium Zurni), little animal organisms that are found in the walls of the large intestines, preferably in the rectum.

Younger animals are mostly affected and recoveries take place mostly in older animals. After an animal becomes infected there is a period of incubation lasting from three to four weeks. The first symptom is diarrhea, followed in a day or two with an admixture of blood with the feces. There is intense straining which may lead to prolapse of the rectum. The condition of the animal deteriorates rapidly. There is a rapid pulse, high temperature great weakness, and the animal dies from complete prostration.

In some cases, especially in older animals, recoverey takes place slowly. Mild cases are manifested by an ordinary diarrhea from which the animal soon recovers. Some of these cases can be saved no doubt by appropriate treatment, but the main thing is to prevent the disease from spreading in the herd. The infective organisms (coccidia) are found in the intestinal discharges, and contaminating the feed and water spread the diseasé to other animals. Healthy animals should be removed at once to clean quarters where only pure water and uncontaminated food is accessible. The feces of infectetd animals should be soaked in a 3 per cent solution of sulphuric acid or some other reliable disinfectant. Care should be exercised not to carry the infection on the shoes from the infected herd. Since Colorado livestock seem to get all the diseases that Kansas is known to have, and then some, it will be well to be on guard and report immediately any suspicious cases.—George H. Glover.

National Tractor Show.

According to latest reports, the Fifth Annual National Tractor Show to be held at Kansas City February 16-21, will be a record breaker from every standpoint. All available exhibition space has been sold. This is the best kind of evidence that manufacturers and distributors of tractors, tractor accessories and power farming equipment appreciate the practical value of the National Show at Kansas City.

Five years ago when the first National Tractor Show was held at Kansas City, some thought it a rather dangerous undertaking for the health of even a very lusty infant. The first show was held in a tent and the weather was anything but inviting. The directors of the Kansas City Tractor Club, the organization responsible for the first and subsequent National Shows at Kansas City, were in a doubtful state of mind during the first days. However, the circus tent show was a success and laid the foundation for the great exhibitions that have followed. Last year's show was held in a big temporay structure of wood, erected on the Union Station Plaza. The building was heated by steam, a great improvement over the oil burning furnaces used in the 1918 building. Exhibitors in general expressed the opinion that the 1919 show could never be surpassed. However, the Kansas City Tractor Club laid plans for a greater show than ever in 1920.

The Fifth Annual Tractor Show will be held in a permanent structure, the property of the Overland Company, and a building ideally adapted for show purposes. Three floors of this immense building will be employed in displaying more than 400 different exhibits. The floor space totals over four acres and the scheme of decorations as planned will be a revelation. Everything will be done to enhance the numerous heavy exhibits of tractors, cultivators, plows, and all equipment developed for power farming.

Tractors of all kinds—every type and model—will be on view at the Kansas City Tractor Show. Every important practical development will be exhibited here, including accessories of all kinds. Improved tractor drawn tools, plows, power cultivators, garden tractors—all of them will be at this national show, with experts from the factories to tell all about their respective products. Manufacturers will find the Kansas City event an exposition of progress in the industry. Distributors and dealers will find Kansas City tractor headquarters during show week. Farmers, thousands of them, will attend because they wait for the National tractor show to decide their tractor questions.

Treating Loose Smut.

A plan for community treating of loose smut in southern and eastern Idaho wheat fields is outlined by B. F. Sheehan, field agronomist for the University of Idaho extension division, in a letter to county agricultural agents.

This smut, in the spring wheat growing sections, according to Mr. Sheehan, has caused a loss of from two to four per cent in the last season.

"This disease," said Mr. Sheehan, "is becoming worse each year. Generallly farmers do not know the difference between the treatment for this and the bunt or stinking smut so common in the winter wheat sections. The copper sulphate (bluestone) or formaldehyde treatment will not control the loose smut. The hot water treatment is necessary. Infection takes place at flowering time. The spores blow about the field and lodge in the glumes. start growing and penetrate the forming grains. After threshing, these infected grains cannot be distinguished from the sound grains. When these grains are planted the next spring the smut grows up with the plant and produces only a smutted head.

"A contact poison will not control this disease. The hot water treatment is necessary and this treatment we do not believe safe to recommend to farmers. Community treating, overseen be one who understands the work is best. A creamery may be satisfactorily used for this purpose.

"It is, therefore, planned to arrange for this work in the counties most seriously affected. Treating would be done just before seeding time, treating only sufficient seed for each individual to plant a small plat, the seed which is to be used for the general field the following spring."

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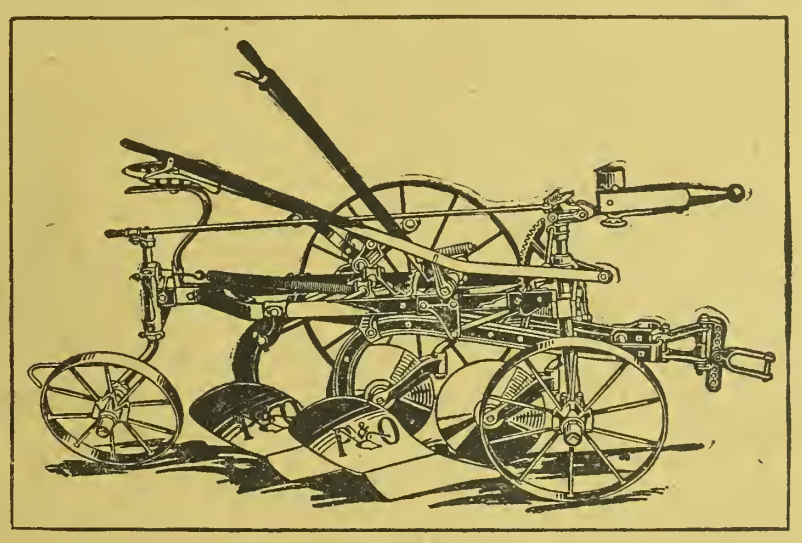

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P&O Light-Draft Plows cover a wide range of work, not only for all ordinary plowing, but for the unusual and the extraordinary. *For Horses:* Walking, Sulky and Gang, both moldboard and disk, in all standard sizes and models of bottoms. *For Tractors:* From 2 to 6 bottoms, both moldboard and disk. *Special:* For grading, ditching, hillsides, root ground, cut-over timber land, orchards, etc. There is a P&O plow for any section, and for any condition of soil.

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The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Life.

Our share of night to bear,
Our share of morning;
Our blank in bliss to fill,
Our blank in scorning.

Here a star and there a star,
Some lose their way;
Here a mist and there a mist,
Afterwards—day!
—Emily Dickinson.

Meat Canning.

The following letter has been received and reply sent in regard to canning meat. This is printed as an aid toward a little easier time in harvest season. There is also given on this page another article with further details on meat canning for which this department is indebted to the Missouri College of Agriculture:

Orchard, Colo., Dec. 30, 1919.
Western Farm Life, Denver, Colo.:

Dear Madam—May I obtain from you some advice about canning meat? I have never tried it, but should like to can some for next summer's use.

You know it is seldom convenient for the farmer or ranchman to have fresh meat daily in warm weather. Fowls are usually plentiful but one likes variety. The meat obtainable in a small town is generally high priced and often lacking in quality, and when one's business is raising beef cattle it seems a shame not to have some of one's own choice quality all the year through.

As my husband has just butchered a fine three-year-old Hereford, I would like to can some of the meat. I have no steamer or pressure cooker. How may it be done with a common boiler? Is it necessary that the boiler be one that is never used for any other purpose? Please make your instructions explicit.

I am enclosing a stamped envelope and shall be greatly obliged by an early reply. Yours very truly,

MRS. ROLAND W. DAY.

First, for the questions. At Orchard, the altitude is not high enough to make it imperative that you use a pressure cooker. You may use a common boiler or roasting pan, and it does not have to be saved for canning purposes alone.

In canning meat, the first thing you have to do is to see that you have good jars with tight fitting lids and good rubbers. Clean these carefully and sterilize them by boiling before you use them. If you have your jars boiling in a big pan of water on the stove, they are hot and ready to use when you want them and there is less danger of breaking them.

Next you have your meat in good condition. Wipe it if necessary and cut in as large pieces as you can conveniently pack in the jar, and for most meat canning for a sizable family, you will like half gallon jars better than quarts. Pack the meat as tightly as possible and add four tablespoons of water (hot), and one level teaspoon salt for every quart of meat. Put on the rubbers if you are canning in the boiler and adjust the lids. With vacuum seal jars such as the "Economy," put on the lid and one clamp; the glass topped jars should have the lid placed and the spring over the lid adjusted but the lower spring left up. The screw top Mason jar should have the rubber placed and the lid screwed down so that the rubber barely has room to slip in and out. This means screwed tight and then loosened a quarter of a turn.

Then place the filled jars in the boiler, which has a rack in the bottom and a lid. The water should be above the neck of the jar and should be boiling hard when the jars are put in. Keep quart jars boiling for three hours, half gallons for three and a half hours, then remove and tighten the lids. Cool, and store as soon as cool.

This meat, of course, will taste and be used as boiled meats are used. If you like, you can roast the meat first, at least searing it well over the outside. Then place in the hot jar with a very little of the hot fat. You do not need to give cooked or partially cooked meats as long a period of sterilization. If the meat is almost done, an hour for quarts and one and one-quarter hours for half gallons is sufficient time; but keep the water boiling.

Your oven is much hotter than the top of your stove and some people have tried canning in the oven very successfully. Use a roasting pan—placing in the bottom a rack or cloths and as much water as the pan will hold without boiling over when the filled jars are placed in it. The jars canned in the oven need from two to two and one-half hours. You cannot place the rubbers on the jars at the beginning of this process, however, as they will not stand the heat of the oven. Leave them off until twenty minutes before time to remove the jars, and then place them on the jars, putting them back in the oven for the remainder of the time. Then seal and store the same as the boiler method.

The only difficulty in this method is to have the jars hot enough to keep from breaking. A little care will accomplish this however.

Don't try to can bones; they take up too much room. Remove the meat from the bones and then make soup stock with them. You can can this stock by sterilizing it about one hour and a quarter.

Your idea of having canned meat for summer use during harvest season is especially good.—E. D.

More on Meat Canning.

There is a tendency in many farm homes to feast on meat during December, January and February and to some extent fast, as far as fresh meat is concerned, during the other months. This is not at all necessary if some of the meat is canned when animals are killed on the farm. Canning meat is as easy as canning vegetables and the process is the familiar cold pack one which many housekeepers already use. Most farm women will not have to buy equipment for cold pack canning. All that is needed is a wash boiler, a rack which will fit in the bottom of the boiler and will hold the jars an inch from the bottom of the boiler, air-tight jars and new elastic rubbers. A canning rack with handles is a great convenience but a home-made one made of strips of wood nailed together will serve nicely. If the rack does not have handles a jar lifter will save time and possible burned fingers. Before beginning to can, see that you have new rubber rings which will stretch without breaking and which can be bent back sharply without showing any signs of holes or of cracking. Test rubber rings before buying and do not attempt to can unless good rings can be bought. The jars that are used must be clean and tested to see that they are air-tight. The simplest way of testing is to put some water in the jar which has a rubber ring on it, screw or clamp down the lid tightly, invert the jar and shake. If even the least bit of water comes from around the top, air can get in and the jar is not air-tight. If the jar which leaks is a bail jar, tighten the bail; if it is a screw top jar, try a different lid until one is found that will make the jar air-tight. Jars for cold pack canning do not need to be sterilized but should have warm water added to them so that they will not break when they are filled.

The meat may be packed raw in the jars and have boiling water poured over it or it may be boiled, fried or roasted, packed in the jar while hot and have the hot fat or meat juice which has been used in cooking, or hot water poured over it. The meat is more easily sterilized if it is not in too thick chunks. Gravy may be made of the fat before it is poured over the meat, but the meat should never be sifted with or rolled in flour before it is cooked, as the flour may form a coating that will prevent the thorough sterilization of the meat. One teaspoonful of salt should be added to each quart jar of meat, unless the meat is cooked with sufficient salt before it is put in the jar.

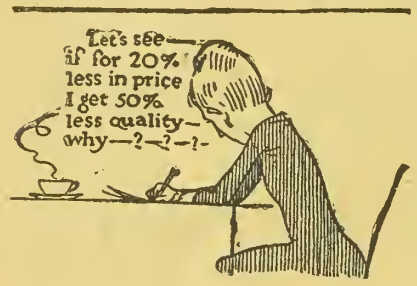
Place the rubber and lid on the jar. If the jar used is a screw top jar, screw it down tightly and loosen by turning back not more than half an inch, so that enough steam can escape to keep the jar from breaking. If the jar is a glass top one with a bail, do not clamp down the lower bail until the jar is removed from the boiler or the jar will break.

Place the jars in the wash boiler, or in a pail of hot water on a rack which holds them up from the bottom about an inch. To prevent the jars from breaking, have the water in the boiler about the same temperature as the jar and do not plunge the jar in the water but put it in gradually. The water should cover the jars about an inch. Put the lid on the wash boiler, or if a pail has been used cover it tightly.

After the water has reached the boiling point, begin counting the time and sterilize for 3½ hours to 4 hours. Sterilize 4 hours if the meat has been put in the jar raw, or has been cooked only long enough to brown, and sterilize 3½ hours if the meat has been partially cooked.

Remove the jars from the boiler, being careful not to place them in a draft and at once clamp down the bail on the glass top jars or tighten the lid on the screw top jars as tightly as possible. It is possible to tighten the lid of a screw top jar after it is cool, but this should not be done, as it breaks the seal formed by the lid with the hot rubber. Jars should not be opened to refill with hot water or gravy after they are sterilized. The meat will keep even though there is an air space, because the air that may be in the jar has been sterilized just as the meat has been and cannot contain any bacteria which will cause the meat to spoil.

Ham, steak, sausage, pork chops, pork tenderloin, pork roast, beef steak, meat for beef stew, veal or chicken for salad or creaming, ground meat for sandwiches or hash, rabbit, squirrel, lamb chops, or lamb for stew are all possibilities for meat canning and will prove a boon to the housekeeper on her busiest days, when unexpected company comes or when meat is needed for the day's meals and a trip cannot be made to town.—Missouri College of Agriculture.



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2694—A Smart School Dress—This will prove a comfortable, and "easy-to-make" design. Good for serge, voile, crepe, plaid and mixtures. Blue serge could be trimmed with tan satin or silk, braid also would form an attractive finish. The sleeve may be in an elbow or wrist length. Cut in sizes 6, 8, 10 and 12 years. Size 10 will require 3½ yards of 40-inch material.

3007—A Becoming Dress for the Young Miss—This is nice for satin, taffeta, or serge. It may be finished without the

All Patterns 15 Cents.

fold on the skirt, and with short or long sleeves. The pattern is cut in 3 sizes: 12, 14 and 16 years. Size 14 will require 3¾ yards of 44-inch material.

3017—A Pleasing Dress for Slender Figures—Satin and serge, or Georgette and satin would also be effective. The tunic may be omitted. The foundation skirt is a two-piece model. The pattern is cut in 3 sizes: 16, 18 and 20 years. Size 18 will require 6¼ yards of 38-inch material. Width of skirt at lower edge is about 1½ yard. The portion of skirt covered by the tunic, could be of lining.

3015—A New and Stylish Costume—For this design, brown serge and moire were combined. The blouse is mounted on a lining, which may be omitted. The facings on blouse and skirt may also be omitted. Pattern is cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Size 38 requires 6⅜ yards of 44-inch material. Width of skirt at lower edge is about 1⅝ yards.

3005—A Comfortable Suit for the Small Boy—This is a good style for corudroy, velvet, serge, linen and other wash fabrics. The blouse closes in coat style. The trousers are made with a side closing. This pattern is cut in 4 sizes: 3, 4, 5, and 6 years. Size 4 will require 3¼ yards of 27-inch material.

3018—A Dainty Play Dress—It was made of unbleached muslin, with cross stitching in blue and red. One may have this in checked gingham with trimming of a plain collar, or in a neat pattern of percale with pique or drill for collar, cuffs and belt. The pockets are the smart feature of this dress, and every little girl will like the dress for that reason. Pattern cut in 4 sizes: 2, 3, 4, and 5 years. Size 3 will require 2¾ yards of 27-inch material.

3016—A Comfortable House Dress—This style is especially suited to mature figures. The pockets and band trimming may be omitted, and the sleeve may be finished at the seams to close with buttons or snap fasteners. Gingham, percale, lawn, seersucker, flannelette, repp and poplin are good for this style. The pattern is cut in 7 sizes: 36, 38, 40, 42, 44, 46, and 48 inches bust measure. Size 38 requires 5¼ yards of 36-inch material. Width of skirt at lower edge is 2¼ yards.

3023—A New and Practical Apron—This design is good for gingham, chambray, lawn, percale, drill, Indian Head, jean and alpaca. The back has belt extensions which hold the fulness at the waistline and are fastened at the center front. Pattern is cut in 4 sizes: Small, 32—34; medium, 36—38; large, 40—42, and extra large, 44—46 inches bust measure. Size medium requires 4¾ yards of 36-inch material.

Eliminating the Middleman.

MRS. HELEN HARBALL.

In a great many of the eastern states where cities are situated in fertile sections, and the farmers grow garden truck, lots are rented where the farmers gather on certain days of the week to sell their produce direct to the consumers. This way the high cost of living is greatly reduced and the profits of the middle men are eliminated. Trucks, wagons and other vehicles are driven to town with their vegetables, butter, fruits and poultry. These markets begin early in the morning and last until noon, at which time all of the farmers have readily disposed of their produce.

The big feature in connection with these markets is the co-operative buying by neighborhood groups from surrounding cities. The idea originated with touring autoists who passed through on market days. From a dozen to 30 families club together, each purchasing a certain number of baskets of produce. The average purchases by the co-operative clubs run about $10 a family, and a $10 note had a purchasing value in a cerain market last summer of three baskets of peaches, two baskets of apples, one basket of cantaloupes, 50 ears of sugar corn, two baskets of white potatoes and one basket of cabbage; all first-class, freshly harvested products. The buyers remove their purchases in automobile trucks, and distribution is made in the neighborhoods in which residents cooperated in the marketing system.

Another interesting factor is the simple method by which the housewife may secure her produce at the same price and on equal terms with the jobber or commission man. No middleman brings the prices up, and the housewives are enabled to save from 50 to 100 per cent over ordinary dealers' prices, and thus materially reduce the high cost of living. The farmers have welcomed the opportunity to trade directly with consumers, and have declared that the presence of the consumers in the markets would result in no attempt at profiteering, from which these markets have been unusually free during their operation as trade centers for dealers.

Why cannot markets such as these be carried on out in these western states where the cost of living is even higher than in the east? They bring the farmers near to the consumers and show that they are willing to do all in their power to reduce the unheard of profits of the commission men.

Fluffy Mashed Potatoes.

There are some women who seem to be able to always make mashed potatoes so that they are white and fluffy, while there are others who make them so that they look gray and are soggy.

This is because unfortunately all women do not know how to cook potatoes. To make mashed potatoes white and fluffy, pare off the skins and remove all specks. Potatoes are starchy, so must be kept boiling all the time they are cooking. Just as soon as they are tender enough to be easily pierced through with a fork, drain all the water from them and dry them over the fire for a minute. When dry mash them fine with a potato masher. Add a half cupful of milk to five medium-sized potatoes and beat them until they become creamy and white. The more thoroughly they are beaten, the whiter and lighter they will be. Season them with salt. Pile them lightly into a serving dish and do not cover or smooth down the top, but leave them rough so that the steam in them can easily escape. Some bits of butter may be put on the top of the dish as a garnish. Set them in a warm place until time to be served. The secret is to keep the potato from over cooking and to keep them as dry as possible after they are once done so that they will not become soggy or clammy.—EDITH ALLEN.

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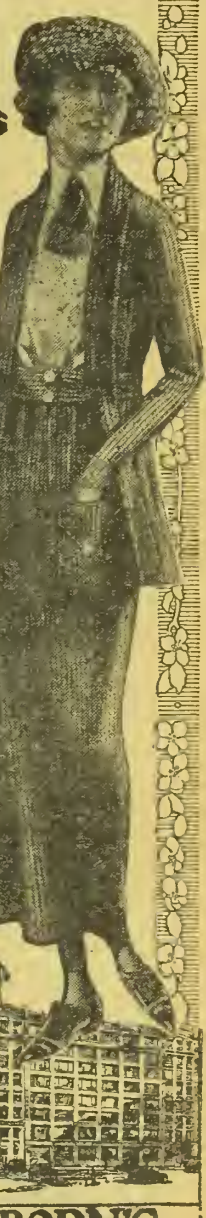

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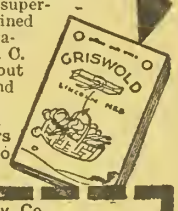

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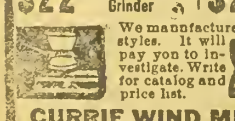

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Stock Show Notes.

Doctor Glover's exhibit on animal diseases and poison plants attracted much attention from stockmen who are up against these problems every day and welcome help from the Agricultural college in prevention of loss.

F. L. Toliver of Fort Collins, the well known breeder of big type Poland China hogs and white Plymouth Rock chickens, reports the following winnings in the poultry division of the National Western Stock show: Cockerels, first, third and fifth; pullets, first and second; cock, third; hens, first and fourth; pen, third. These winnings were on Mr. Toliver's young stock. He also made some good sales, the best, a cockerel, sold to a breeder at Rising City, Nebr., for $50. This bird was put in the Nebraska State poultry show at Lincoln.

A suitable dairy building is an absolute necessity. If the Western National Stock show is to continue to have the support of breeders of dairy cattle barn space should be provided under one roof to accommodate them.

C. G. Robertson of Trinidad was among the new ones in the Jersey division with a herd of his own breeding—all Colorado stuff of the producing type with some excellent show quality to boot. It was good to see more interest by the Jersey breeders in the big show, another strong contender being Theodore Morford of Golden, who has a splendid herd of this popular breed.

In the Galloways, J. P. Reilly & Sons of Emmett, Kan., carried away 23 ribbons with a herd of fine representatives of this breed.

The Horticultural department of C. A. C. made a fine display which attracted the attention of fruit growers who are very much interested in the subject of better pack and better marketing methods.

What the Colorado Office of Markets is doing toward helping the livestock raisers market their products was shown in a graphic exhibit illustrating co-operative marketing methods.

The women found much of practical help in the exhibit of the Home Economics department of Colorado Agricultural college, which is to receive more extended mention in a later issue.

How much feed does it take to keep a dairy cow in producing condition for one year? This question was answered by an exhibit of the State Dairy Commissioner's office, in charge of Deputy Commissioner Nevius, through piles of actual feeds, namely 5½ tons of silage, 2½ tons of alfalfa hay and 1,500 pounds of mixed grain. The cow thus fed, if a reasonably good producer, should give 875 gallons of milk a year. A live Holstein, in stanchions, added interest to this exhibit.

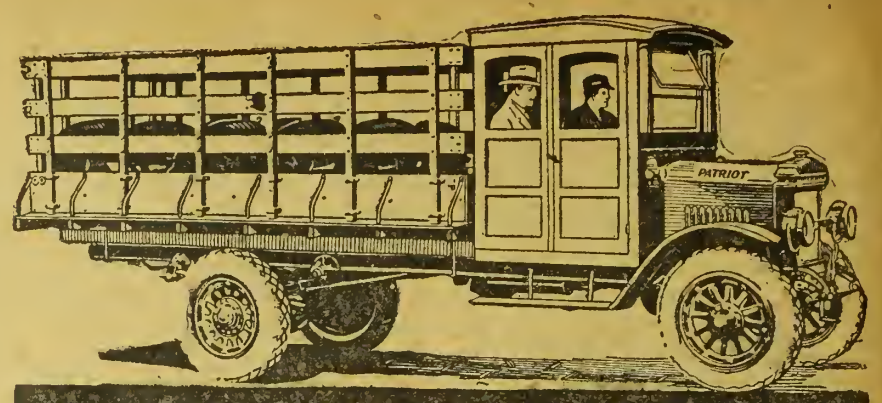
Students 'Judging Contest.

The opening day of the stock show was given over to the student's judging contests. One of these was for Agricultural Colleges and the other for the secondary schools. There were three schools entered in the secondary class. The winning team was from the Greeley high school scoring 1797 points out of a possible 2200. Ft. Collins secondary school of agriculture was second with 1600 points. Curtis, Nebraska, was third with 1592 points. Stow L. Witwer of the Greeley team was the high man with 404 points out of a possible 450. Donald Bliss also of the Greeley team was second high man with 387 points. The other members of the Greeley team were Orville McKee, Willis Snider and Manford Grove.

In the collegiate contest Kansas Agricultural College won with 3427 out of a possible 4000. Nebraska Agricultural College was second and Colorado Agricultural College was third. The high man in this contest was K. D. Thompson of Kansas, with a score of 715 points out of a possible 800. William Weidburg of Nebraska was second high man with a score of 699 points and L. C. Noyes, also of Nebraska, was a close third with 691 points.

The Kansas team was composed of H. R. Guilbert, K. D. Thompson, P. E. Neale, W. R. Horlacher and Nevels Pearson.

The judges of the contest were Prof. T. H. Shearer of Ames, Iowa, and County Agriculturist C. D. Hyatt, of Rio Grande county, Colorado.



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In Kansas, a fleet of Patriot Trucks, heavily loaded, made a run of 350 miles last summer, through territory where there had been much rain for several weeks, some of the roads having practically no bottom—over 200 miles made in the rain—the entire trip of 350 miles being made in two days, each truck going through on its own power.

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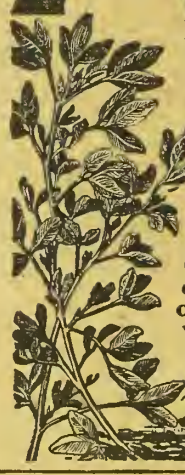

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Duroc Breeders Meet.

About 60 members attended the semi-annual meeting of the Duroc Jersey Breeders' Association held during Stock show week. Twelve members were added to the rolls. The following recommendations for judges at state shows were made: L. A. Weaver, Columbia, Mo.; E. Z. Russell, Washington, D. C., and W. T. Harris, Morganfield, Ky.

Committees were selected as follows:

Barrows—Caldwell Martin, C. F. Burke and R. C. Kibbey.

Pig Clubs—J. T. Tingle, Fort Collins, and W. L. Stone, Pueblo.

Sales—C. F. Burke, Pueblo, J. W. Brauer, Colorado Springs, and R. C. Kibbey, Rocky Ford.

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I like Western Farm Life. It was through your advice that I made the most profitable farming venture that I have made in eight years' residence in the Montezuma Valley. I guess you remember when I asked your advice in regard to saving a twenty acre field of sweet clover for seed. Well, it did fine and I sold it to Barteldes in your city. —W. I. House, Dolores, Colo.

Weld County Institute.

The farmers' meeting held at Greeley, January 5 to 10 inclusive, was well attended. In the discussions carried on much of value was gained from those taking part in the way of clearing up obstacles that confront the farmers in every section. Among the features of the week was a banquet given to those in attendance at the institute, by the Greeley Chamber of Commerce, at which time an agricultural and livestock bureau was formed for the purpose of being of more assistance to the farming population.

Ex-Governor Ammons spoke to the institute on the subject of "Livestock Problems." He spoke of the great need for better care of the cattle and the importance of proper feed when the animal is growing. He brought out the need for earlier maturity of the cattle, and that it requires but half as much feed to get the same results on a young growing animal as it does on one that is matured. He spoke of the importance of good grass in economical beef production. He made the statement that much of the loss now encountered among range cattle was due to the lack of proper nutritive feeds, and that an animal needs more than just such feeds as straw or poor hay in order to bring the best results to the grower.

Dr. George H. Glover of the veterinary department of the Colorado Agricultural College spoke of the general problem confronted in the way of diseases in livestock production. He dealt briefly with the difficulty Colorado stockmen are experiencing in the matter of hemorrhagic septicemia, and how it was still impossible to treat effectively for it. He mentioned, however, that they are now working on a vaccine that promises more in the way of prevention than the former vaccines used. His talk dealt with the importance of preventing disease rather than curing and traced the progress of veterinary medicine toward that end.

In discussing the handling of tuberculosis among cattle he mentioned the government plan of eradicating this disease through the accredited herd plan whereby the federal government, state and grower each stands a third of the loss of the reactors found in the herds. He urged that the state agree, through legislative action, to take part in this program.

In speaking of hog cholera, he stated that vaccination was a complete success and should be employed wherever the disease makes its appearance, but he advised against vaccination unless the disease had visited the territory. When cholera appears immediate steps should be taken to vaccinate all hogs. He stated that 24 hours' delay in vaccination when you have the disease results in a loss of about one-third of the herd, while if done at once 96 per cent might be saved.

It is important to watch the pigeons, stray dogs and running water as they offer a damaging source of spread of the disease.

He pointed out the importance of isolating all new stock shipped in for a reasonable length of time to be sure that the disease is not carried to the remainder of the herd.

In speaking of the blackleg vaccines, he said that the government vaccine given out free was not to be relied upon, but that the blackleg Agressin put out by the biologic houses, should be used, as it was absolutely sure to prevent the disease.

Among other speakers who gave practical talks on the program were Prof. W. H. Hargrove of the State Teachers' College of Greeley, who gave a description of the Hogan method of selecting laying hens.

The institute lasted the entire week and was under the direction of the Weld County Farmers' Club and County Agriculturist Mason E. Knapp.

During the week a co-operative livestock shippers' association was formed, with Mark Bliss as manager. This is one of several formed in the county under the direction of Prof. F. A. Ogle, the committeeman for livestock improvement of the county farm bureau. In appreciation of the work done by Prof. Ogle in livestock improvement, he was extended a hearty vote of thanks by those in attendance at the institute.—H. A. L.

Step Saving — Child Training — Nutrition Study.

(Continued from Page 4.)

these fibers. We agreed that an experiment station knows much more about what we eat and wear than we do.

Dr. Nellie Goldthwaite who has charge of the research laboratory in the home economics department at the Colorado Agricultural College, told us how she had worked with fruit juices and jelly making through many, many months. She made tests of apple juices at various stages of growth and at various times after they were stored, keeping record of the actual amount of jelly-making substances in many different varieties under all these varying conditions. She tried boiling fruit juices varying lengths of time and with various amounts of sugar and recorded these results. She told us how to test for pectin, the jelly-making substance and showed us tests. From these tests we were told how to estimate the amounts of sugar required.

Dr. Goldthwaithe has prepared a separate article on this talk of hers and we hope to print it in an early issue so that you may have some very special suggestions before jelly making time comes again.

All in all we had a most excellent time at our women's part of the farm congress and hope to be "legislators" again next year.

Duroc Jersey Sale.

The sale of Duroc Jersey hogs at the stock show was well attended although the accommodations for it were very poor. It was held in a tent back of the hog barns, where the ground was damp and cold. This made it very uncomfortable for those in attendance. Regardless of this fact, however, Col. Fred Reppert, who cried the sale, managed to keep the buyers in fairly good humor throughout. There were some excellent individuals in the offering, from the herds of the Colorado breeders. The top price of the sale was on a sow Edgemoor Cherry Queen, from the herd of Edgemoor farm of Littleton. She brought $410 and went to W. W. Brown of Hubbard, Texas. Thirty-two hogs were sold through the ring at an average price of $140. Several eastern representatives of the breed were present and pronounced Colorado Durocs of good breeding but lacking in growthiness. This should be a comparatively easy condition to overcome. Although it was hoped that the average would be a little higher, it is the highest average of any hog sale held in Colorado. With a united effort on part of the breeders toward perfection it is certain that they will eventually equal the prices received in the east. List of sales follows:

Boars.

Montair Sensation 2nd 312787, Geo. E. Morton & Sons, Ft. Collins, to Burt Hart, Longmont, $50.

Long Sensation 3d 327355, The Blue Ribbon Live Stock Co., Pueblo, to J. W. Clark, Kiowa, $235.

Grand Pathfinder Again 309617, J. W. Brauer, Colorado Springs, to Mrs. C. E. Sears, Kellog, Kan., $50.

Edgemoor Gano Chief 314747, Edgemoor Farm, Littleton, to Harold Tabor, Leonard, $155.

Red Pathfinder 312283, J. W. Brauer, Colorado Springs, to J. W. Burke, Olney Springs, $275.

Boar, Geo. E. Morton & Sons, Ft. Collins, to Harold Tabor, Leonard, $85.

Boar, Edgemoor Farm, Littleton, to J. D. Brunton, Aspen, $105.

Sows.

Heatherbloom 745688, Geo. E. Morton & Sons, Ft. Collins, to Mrs. J. O. Craighead, La Junta, $120.

Montair Cherry Queen 609096, Geo. E. Morton & Sons, Fort Collins, to C. E. Gibson, $160.

Lot 4, Hog Haven herd to F. B. Fox, Indianapolis, Ind., $105.

Sow, Hog Haven herd to H. H. Schaffer, Weldona, $90.

Lady Colonel 3d, Hog Haven herd to H. Head, Iowa City, Iowa, $125.

Big Lady 794868, Blue Ribbon Live Stock Co., Pueblo, to C. E. Gibson, Gibson, $145.

Cherry Anna Mae 790660, Blue Ribbon Live Stock Co., Pueblo, to J. L. Brown, Leonard, $250.

Red Bird 70th 454429A, H. G. Squibb, Aurora, to W. F. Tumorhlen, Ft. Morgan, $80.

Edgemoor Lass 210270A, H. G. Squibb, Aurora, to M. F. Keim, Fleming, $150.

King Lady 658312, Colo. Agricultural College, Ft. Collins, to A. A. Squibb, Aurora, $280.

King Lady 4th 692558, Colo. Agricultural College, Ft. Collins, to R. A. Lyle, Oklahoma, $130.

Daisy of Stonemoor 664288, Stonemoor Farm, Pueblo, to J. W. Brown, Leonard, $110.

Joe's Nellie King, J. W. Brauer, Colo. Springs, to M. F. Keim, Fleming, $90.

Pathfinder's High Girl, J. W. Brauer, Colo. Springs, to W. F. Tumorhlen, Ft. Morgan, 75.

Columbine 2nd 802930, Braeside Farm, Pueblo, to O. W. Kohlman, Vernon, $90.

Columbine 3d 804932, Braeside Farm, Pueblo, to W. F. Turmohlen, $110.

Miss Maggie Girl 2nd 815580, R. C. Van Scoy & Son, Denver, to W. F. Turmohlen, $105.

Miss Village Belle 815584, R. C. Van Scoy & Son, Denver, to C. E. Gibson, Gibson, $60.

Edgemoor Cherry Queen 219366, Edgemoor Farm, Littleton, to W. W. Brown, Hubbard, Tex., $410.

Lucy Wonder of Edgemoor 221476, Edgemoor Farm, Littleton, to Geo. E. Morton & Son, Fort Collins, 205.

Rose Pathfinder, J. W. Brauer, Colo. Springs, to Harold Tabor, Leonard, $95.

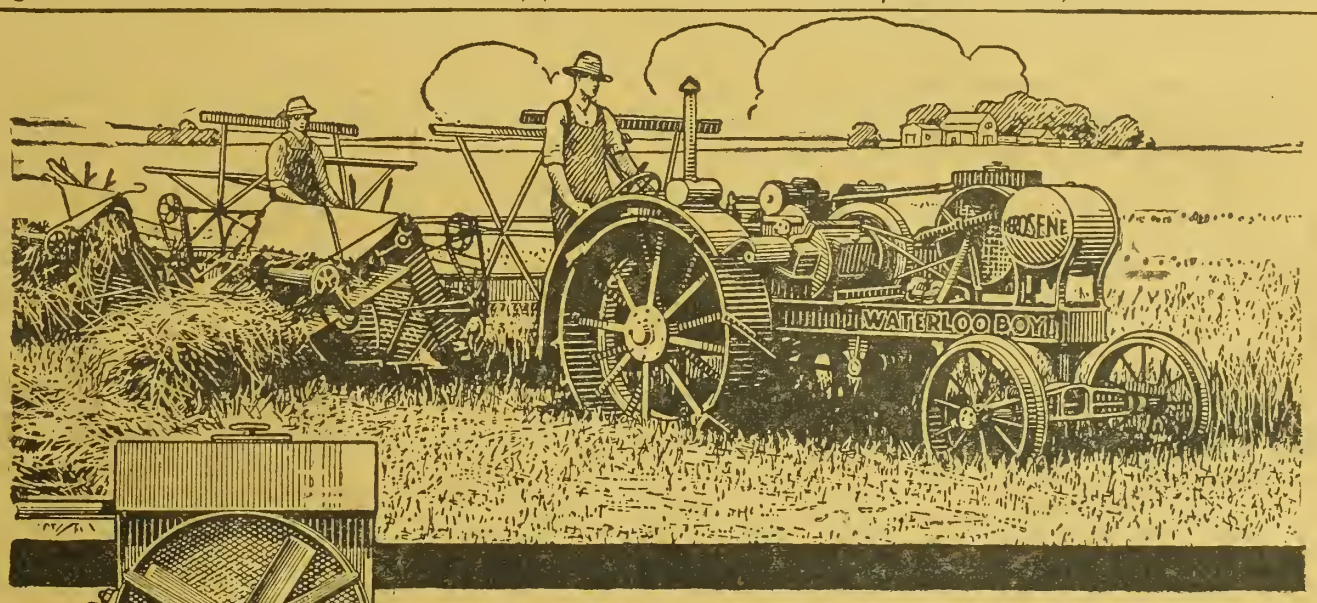
Mabel King 2nd, J. W. Brauer, Colo. Springs, to Price Edlebert, Stamford, $115.

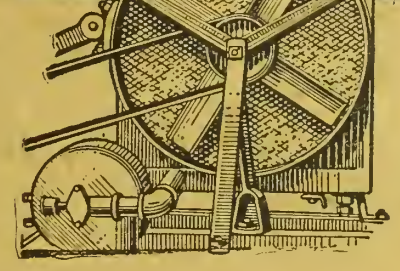
Sunset Girl, J. W. Brauer, Colorado Springs, to W. N. W. Blayney, Denver, $110.

Sow, R. C. Van Scoy & Son to J. L. Brown, Leonard, $100.

Sow, Edgemoor Farm to W. N. W. Blayney, $175.

I want to thank you for your kindness in forwarding premium list after I had sent in my subscription. Also wish to thank you in advance for the book, "Practical Farming," which we have selected as our premium on the two years' subscription. We think your paper is improving all the time and enjoy it very much.—G. B. Linton, Grand Junction, Colo.





A centrifugal pump, four blade fan, and large size, honey-comb type radiator insure positive cooling on the Waterloo Boy.

Uniform Cooling Keeps The Engine on the Job

THE cooling system of a tractor gets its real test during the heat of harvest and early fall plowing. It is then that you can rely upon the Waterloo Boy—the pump, fan and radiator system of cooling always keeps the engine on the job.

WATERLOO BOY
BURNS KEROSENE COMPLETELY

To secure uniform power you must have uniform cooling. The pump, fan and radiator system used on the Waterloo Boy positively assures uniformity in circulating cooling water.

It holds the engine at the right temperature for proper lubrication, and maintains sufficient heat to insure complete combustion and full power from the fuel.

An even temperature is maintained at all operating speeds because the speed of the pump and fan is automatically controlled by the speed of the engine.

You get a big radiator on the Waterloo Boy. It holds thirteen gallons. You won't find it necessary to stop in the field every few hours on a hot day and fill it.

The cooling system is but one of the Waterloo Boy's superior features. Its simplicity and accessibility, its powerful 12-25 H. P. engine, its ability to burn kerosene and burn it right, its Hyatt roller bearings that eliminate friction, and a drawbar shift lever that gives you the correct line of draft on all tools, all contribute to make it a real farm tractor.

John Deere Implements, Waterloo Boy Tractors and Kerosene Engines are distributed from all important Trading Centers. Sold by John Deere Dealers everywhere.

We want you to read a booklet describing the Waterloo Boy. Write for it today. Address John Deere, Moline, Illinois, and ask for Booklet WB-6 54

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Trapping the Mink.

With mink skins selling from three to fifteen dollars, no Colorado boy can afford to neglect trapping them if he has the opportunity. They are plentiful in this part of the country. They are found only in streams of running water and while they spend most of their time in the water, they do come out on the land now and then. They are not as easy to trap as skunks and muskrats, but can be caught by any one who is willing to take a little trouble in making his sets. A No. 1½ trap is perhaps the best to use.

Most of the trapping will have to be done in the water. A boat or rubber boots are necessary.

Mink go up ditches and small creeks to feed and these places are the best to catch them. Set the trap in the creek a little ways from where it empties into the river. Along the bank where the water is only two or three inches deep is the place for bait sets. Set up a stick which extends fifteen inches above the water and put a fish on top of it. The trap is placed in the water at the foot of the stick.

Mink prey on muskrats and other small animals. They enter all little holes along the bank. Go along the stream with the boat or waders until a small hole is located just under the water level. Place the trap in the mouth of the hole. Find one of the slides the muskrats make in going out to feed. Set a trap in this trail. If it doesn't catch a mink, it may catch a muskrat. Mink generally follow the trail of other minks. They use the same path out of the water and up the bank. This path can be discovered and set with traps. Use fish or frogs for all water sets.

Land sets are successful but require more care. It is necessary to study the habits of the animal a little to be successful here. They follow trails, especially up dry ditches and creeks, and along the bottoms of banks. Locate one of these trails. This is not the simplest thing in the world to do, but you will soon learn where to look for them. Dig a small hole back in the bank a few inches above the trail. Set the trap in the mound of dirt and put some fish oil in the hole. This is almost sure to attract the mink. Sometimes it is well to bury a trap in one of these trails. Here great care must be used. The trap should be covered with leaves and everything made to look natural. No signs should be left to tell the animal that his enemy man has been there.

A dead bird is considered a dainty morsel by a mink. It makes a good bait to lure him into traps. Hang it from a tree near the trail. Set two or three traps under it. Throw a couple of half rotted logs together in the shape of a V with the open end next the trail. After they have been there long enough for the animals to get used to them, put some fish oil or a dead bird in the point and a trap in the open end.

Trapping mink is real sport because you are pitting yourself against a cautious little animal. You can outwit him if you are willing to take the pains, but you will never catch him unless you do. The fur companies will sell you some very good prepared baits, but if you study his feeding habits, you can use other bait that is just as successful.—Harold Lucas, Fort Collins, Colo.

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Does not blister or remove the hair and horse can be worked. Pleasant to use. $2.50 a bottle, delivered. Describe your case for special instructions and Book 5 R free.

ABSORBINE, JR., antiseptic liniment for mankind, reduces Strains, Painful, Knotted, Swollen Veins. Concentrated—only a few drops required at an application. Price $1.25 per bottle at dealers or delivered.

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Send us your hides and furs. We tan and make them into fur coats, robes, furs, etc., at lower prices. Four weeks' service. Send for catalog No. 31. Also tanners harness and lace leather. Repairing of all kinds. Highest prices paid for Hides and Furs.

Kansas City Robe & Tanning Company, 219 Main St., Kansas City, Mo.

A Bit of Ancient Verse Of Quite Modern Application.

Sixty years ago Mr. William Cooke of London, England, desiring to teach his son Vernon the virtue of thrift, persuaded him to memorize the verses which follow. One might take them to be of quite modern origin, for if there is one bit of advice that is timely it is "Be Careful of Your Money." Thrift is after all the first essential in any effort to cut the cost of living. William Cooke's son forgot this little poem, for he was only eight or ten years of age when Pater Cooke gave it to him. Recently the son—Dr. Vernon T. Cooke, the noted authority on arid agriculture, who now makes his home in Denver, found the poem in a bundle of letters yellow with age, and it is here reproduced, without the name of the author, who is not known to Dr. Cooke:

Be Careful of Your Money.

When life is full of health and glee,
Work, work, as busy as a bee,
And take this gentle hint from me—
Be careful of your money!
You'll find it true, that friends are few,
When you are short of money!

A single grain cast in the mould
Will thrive and yield a hundred fold
More precious than its weight in gold,
Be careful of your money!
The grain you sow, to stacks may grow
Be careful of your money!

But do not shut sweet mercy's doors
When sorrow pleads or want implores:
To help to heal misfortunes sores,
Be careful of your money!
To help the poor who seek your door,
Be careful of your money!

Would you escape the beggar's lot,
The deathbed of the tipling sot,
And live in sweet contentment's cot?
Be careful of your money!
And if you'd have a friend indeed,
Be careful of your money!

Reading advertisements has helped to make this a united country

Jim Hawkins props his feet on the rose festooned porch railing in an Oregon suburb and reads the same motor car advertisement that Cousin Peter is studying as he rides home from work in the New York subway.

In Arizona you can buy the same tooth paste and tobacco that are used by the folks in Maine.

California fruit growers advertise their oranges and lemons to the people of the East. New Hampshire factories make ice cream freezers for Texas households.

There can be no division in a country so bound together by taste, habit and custom. You can meet up with anybody in the United States and quickly get on a conversational footing because you both read the same advertisements.

Advertising is the guide to what's good to buy. Advertisements give you the latest news from the front line of business progress.

Reading advertisements enables you to get more for your money because they tell you where, what and when to buy. And it is a well-known fact that advertised goods are more reliable and better value than the unadvertised kinds.

HIDES, FURS AND PELTS ARE HIGHER

Ship direct to us or get our prices before selling. Send for FREE Trappers guide. Get full value by shipping to big market and reliable house.

NEBRASKA HIDE & WOOL CO., Omaha, Nebr

Furs, Game Heads, Fur Rugs

Every description of FUR and TAXIDERMY work done true to nature. "JONAS BROS," stand for supreme QUALITY, WORKMANSHIP, and SERVICE.
Save your FUR skins and have us transform them into beautiful FUR PIECES, ROBES, and RUGS.
Send for our free FUR TAXIDERMY catalog and price list.

JONAS BROS.
1017 BROADWAY DENVER, COLO.

Co-operative Feed Buying.

During the month of December, 1919, 67 cars of hay, corn, and cake, were purchased by the county agents for the ranchmen in their counties. The extension division through the county agents and Mr. G. D. Turnbow, state dairy specialist, purchased for the people of Wyoming forty head of purebred bulls and cows of all breeds and 493 head of grade cattle.

During the fall of 1919 up to December 31, the county agent at Newcastle has purchased 1,256,000 pounds of hay, cake, corn, chop, and oats, for Weston county. The total saving to date is $5,400 to the ranchmen of the county. The feed situation at Newcastle has been the most serious of any point in the state and the agent has handled it in good shape.

The state extension office through Mr. Shepardson and Mr. Turnbow, purchased for ranchmen in Wyoming 53 cars of hay and one car of corn between December 20 and January 7.

The county commissioners of Niobrara county estimate that Agents Hyde and Sands have saved the people of that county $4,000.

Agent Oldroyd of Crook county has done equally good work. These are but examples of what has been done over the state. The saving is made by co-operative buying direct from the producer.—Wyoming Cowboy.

How to Increase Your Crops And save them from drought every year.

THIS BOOK TELLS HOW
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Contains a lot of useful information and shows how irrigation by pumping greatly increases and insures Crops, especially POTATOES.

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Send Us Samples of Your alfalfa, clovers, sudan, millets, cane, kafir, timothy, brome, etc. State quantity and time of delivery.

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Dept. 304. Lincoln, Neb.

SWEET CLOVER

Easy to start. Grows anywhere. Not only a good fertilizer, but produces immense crops. Big money-maker. Crops worth $50 to $125 per acre. Greatest forage plant that grows. You cannot miss it by sowing our superior scarified seed.

Don't delay writing for our 1919 catalog (116 pages) and circular giving full particulars. We can save you money on guaranteed seed.

A. A. Berry Seed Co., Box 939, Clarinda, Ia.

Third Shorthorn Congress.

The congress idea has become quite generally adopted in improved livestock circles and serves a broad and useful purpose. The congress was first applied to the Shorthorn interests in particular in 1918 and the results were of such a far-reaching contact that it was decided to place the National Shorthorn Congress on a permanent basis. The third event will occur in Chicago, February 17, 18 and 19, in the International Livestock building, with the headquarters as before at the Stock Yard Inn.

One of the important rules in force from the beginning is that no individual breeder, or firm, may enter for the show contests more than ten animals. This rule was adopted for the purpose of making the show which is a most important feature of the occasion as widely representative as possible and to encourage beginners and owners of small herds. It is required of those making entries that the animals be of a high order in the matter of individuality. As an attraction $5,000 is appropriated for prizes and the class awards extended from fifteen to twenty places in the various classes. The possible cash winnings mount up to a liberal sum and offer an inducement to the breeders who have animals of superior merit to enter the contests.

Another rule that is applied is that every animal entered in the show contests must be sold in the sale which is also a very important feature of the program. This rule has served the Shorthorn interests very generally. It has assured prospective patrons a large offering of a high order of merit throughout. From 250 to 300 high-class Shorthorns—good seed—pass through the congress sale each year. It can be readily understood that because of this large number of this class prospective buyers will journey long distances, and from foreign shores, in order to take advantage of this unusual opportunity. The sellers have come to recognize the advantage to them of sending forward cattle of the desired class, thus both the interests of the buyer and the seller are served at the same time.

But there is another feature of great importance. It is the coming together from all parts of the United States, Canada, and countries abroad of those affiliated with the breed's affairs and concerned with its progress. The conditions prevailing in one section or country are made familiar to the breeders of the other sections or countries. There is a great awakening of interest among Shorthorn men everywhere due more or less directly to these annual congresses.

Seed Potato Demands.

South Texas potato growers are already being informed regarding the plans of the growers in the Divide district, in Elbert and El Paso counties, to produce certified seed for use in southern Texas. Mr. V. H. Schoffelmayer of the Dallas Semi-Weekly Farm News, who came to Colorado last September at the request of the Potato Improvement committee, has started a publicity campaign in Texas, which will result in benefit to Colorado growers in the development of their market next fall. Following is an extract from one of Mr. Schoffelmayer's articles:

Certified seed potatoes for South Texas and other southern growers from inspected fields in the Divide section of Colorado will be grown on a commercial scale this year. It will be the first time that certified secd potatoes from Colorado will be offered to potato raisers of the southwest, the previous seed supply having been derived chiefly from Wisconsin, Minnesota and Maine. The advantages of the Divide section of Colorado (Elbert, El Paso and Douglas counties) as a region adapted to the growing of exceptional seed potatoes is well established. Potato raising has been a regular occupation on the part of farmers in that district for many years and the excellence of the potatoes grown is widely recognized.

Texas potato growers have had considerable trouble in recent years obtaining seed suited to their needs. At the last farmers' congress at College Station Fritz Engelhart, former president of that organization and one of the leading potato growers of South Texas, stated that a large part of the seed potatoes received from certain northern states had proved to be low in germination. Large losses resulted to Texas growers from this cause. Considerable complaint was made against Maine seed potatoes, which it was found were shipped via steamer from a Maine seaport to a Texas port. It was believed that the sea voyage affected the germinating powers of the potatoes unfavorably. At any rate much seed planted failed to produce a crop.

The Texas Irish potato crop is very important. A large per cent is grown and harvested during the winter and reaches northern markets at a time when storage potatoes are getting scarce and prices are high. The Eagle Lake district of Texas along the Gulf of Mexico is one of the most important winter potato raising regions in the United States.

The winter potato crop in South Texas is planted in January and harvested in May and June. It is as early as any American commercial potato crop on the market. The second potato crop in South Texas is planted in September, October and November and harvested in midwinter. South Texas potatoes usually reach the New York market about February and March, commanding uniformly high prices. In the Eagle Lake district winter potato raising has become a highly specialized business. Some of the potato farms are of large size and employ modern machines, such as potato diggers, to harvest the crop. Climatic conditions are exceptional for an early maturing potato crop and the only trouble which Texas growers have experienced in the last few years is the result of seed potatoes which had lost their vitality. Many fields were lost because seed failed to sprout. There is little danger of disease-infested potatoes entering the state because of the strict inspection laws.

One of the main reasons why Colorado seed potatoes should prove highly acceptable to South Texas growers is that the Divide country, where they will be grown, has an elevation of about 7,000 feet. Climatically, experts state, the Divide country approaches the character of the original home of the potato in the mountains of Peru. Potatoes grown on the Divide have greater vitality than those grown at lower altitudes. The writer inspected many potato fields in the vicinity of Elbert and Eastonville last fall and found the crop uniformly excellent. The Divide country is also fortunate in being settled by progressive citizens, who have made a success of their various undertakings. Some of the best managed farms and small ranches in the countrty are to be found on the Divide in eastern Colorado. That the ventures have been financially profitable may be inferred from the number of beautiful and substantial homes and large barns which dot the Divide. There is not the slightest doubt that with such a combination of intelligence, high citizenship, climatic advantages and soil a most excellent seed potato crop will be grown.

Need Drastic Dog Law.

Every section of the state reports loss of livestock from dogs. A law in Colorado proyides that dogs caught worrying sheep or cattle may be killed. The law is not strong enough. No provision is made to protect the man who loses the animals. There is but one way to handle the proposition and do away with many of the absolutely worthless dogs that flood the state, and that is to impose a tax on the dogs large enough to provide a fund for the payment of losses to livestock and poultry owners. The law should be amended to take care of the difficulties that arise. In order to accomplish this, farmers over the state should prevail on their representatives to support such a measure. Don't let this drop, but take it up at once and let your senator or representative know how you feel about the matter.—H. A. L.

Wrong End Up.

Excavation work on the big sewer had reached a low, mucky place and the Italian laborers were having their troubles with the soft mud.

Suddenly there arose a shout

"C'mear queek! Bringa da shov! Bringa da peek! Pietro's stuck in da mud up to his knees!"

"Tell him to wade out," shouted the foreman.

"He canna no wade—he wronga end up!"—The Milk Bottle.

Chas. Elder, Montezuma County, Pig Club Boy.

A Pig Club Boy's Letter.

Dear Farmer Putnam: I thought I would write and tell you how I am getting along with my pig. I am doing fine. He is a big one. He weighed about 60 pounds when I got him the 22d of July. I could not go to the State fair, but I went to the biggest fair in the San Juan basin. It was a fine trip. We went with Mr. Newsom, the county agent, in a car and we enjoyed the trip very much through the beautiful mountains. There was a flying machine at the fair. I will send you a picture of me and my pig in this letter.—Charles Elder, R. F. D., Cortez, Colo.

Most Miles per Dollar

THE DEALERS SAY there is no argument—the Firestone Cord, compared side by side with any other, sells itself.

No wonder. It is built to the largest standard oversize of the industry.

It has much greater air capacity than the average. It contains much more material and it delivers extra mileage in proportion. The thicker, heavier tread, that looks and feels the part of its extra mileage, is another reason why it sells itself.

And that tread is as good as it looks from the standpoint of preventing skid, slide or spinning of wheels. It has a tractive power never before equaled in a rubber tread, yet it has no inclosed hollows or suction features to be a drag on speed or a drain on power.

Specify Firestones; your dealer is ready with just your size—Cord or Fabric.

FIRESTONE TIRE & RUBBER CO.
Firestone Park Akron, Ohio
Branches and Dealers Everywhere

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Profitable Farm Poultry

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, WESTERN FARM LIFE, Denver, Colorado.

Lars Carlson On Incubators.

"A friend in need is a friend indeed." We found this true the other day when we got orders from the exalted editor to send in something on incubators that would help the readers of Western Farm Life. Naturally we thought that practical experience would furnish the best material, and knowing that our readers enjoyed what we had been able to get from Lars Carlson in the past, we turned that way again. It seems rather nervy to ask a man to donate real marketable stuff and then go sell it at a high price, and we were honest enough to tell him so, but, "Oh, that's all right; I used to be a bum reporter on a 2x4 paper once and always considered it perfectly legitimate to get anything I could for nothing, even though some of the stuff I got paid me real well."

Wonder what he meat by "bum reporter" and "2x4 paper?" If I hadn't always found Mr. Carlson mighty straightforward and pleasant I might have thought him sarcastic or ironical.

"Mr. Carlson, I've got to get something good on, or in, or about, incubators right away or lose my $3.60 a month salary. The editor wants especially to know 'Why an incubator' and if you can't help me out, I'll be going back mighty blue."

"You want to know what I think of the use of incubators?"

"That's it exactly."

"When I was a lad of sixteen, I got my first job in a grocery back in the pine woods of Wisconsin. We had no telephone and no auto delivery car in those days, but got along pretty well. I used to go out every morning and get the orders for the day; come back, put up the orders and deliver the goods, all before noon; but what grocer does that now? The order comes in over the phone, and is delivered by truck; one trip saved and ten times the amount of stuff handled. To me it seems as impossible for a farmer's wife to succeed with poultry by the old methods as for a grocer to succeed by the old one-horse delivery and take-order system. Hatching by hens is a thing of the past; not that it isn't done and won't be done for a long time, but the person who follows antiquated methods will never be a success. Hatching by hens means late hatching; few hens get ready to sit until warm spring weather, and generally in May, June or July. Late hatching means late pullets, late pullets of course lay late in winter and consequently rob their owner of the cream of the business. But hatching by hens means something worse than late chicks; it means a hatching season scattered along over several months; a multitude of small broods of all sizes; coops all over the place, any one of them with its brood of a dozen chicks, requiring as much care as a brooder house capable of accommodating a whole season's chicks; it means outdoor attention in all sorts of weather, especially bad weather; shutting the chicks in during storms in a space inadequate in size, or letting them out to be exposed and chilled; it means a discouraged, tired out wife, or neglect by the children if they are called on to do the work. Then the cockerels being late hatched, are not ready for the early broiler market and consequently are kept to make size, as though quantity ever can make up for quality and price. They cause crowding in the small coops and take up the room and care that should go to the pullets.

"Incubators are getting to be quite the thing on the farm. Some cling to the hen because they have always used her to do the hatching. Some because of indifference; 'it's of no great consequence and what's the use of bothering'; but the chief reason, in my estimation, why more farmers do not use artificial methods of hatching and brooding, is because of the expense, either fancied or real. It scares some people to think of putting $25 into an incubator, $25 into a brooder and perhaps $40 into a brooder house. But I know of a number of people who have squandered a whole $100 that way and gotten it back in increased profits the first year, not counting the comfort that went with the new way."

A Pointed Question.

"Say, Mr. Carlson, I asked you what the advantages of the incubator were, and while you have probably answered my question, won't you forget the hen a minute or two and tell me more directly where the incubator is better and not where the hen is worse?"

"Maybe I have been beating around the bush some, but if I said that the hen is not so good in this or that respect, I meant that the incubator was better, etc. But to sum up. The incubator has capacity, you can hatch a whole season's crop in one, two or three hatches; you can hatch your chicks just when you want them to give you early broilers, for after June 1 the price drops very rapidly; you can get your pullets out in time to mature them before cold weather, or at any time you want to get eggs. You have only one, two or three sizes of chicks, that many flocks only; larger numbers together and under cover where it is a pleasure to look after them; the cockerels and inferior pullets can go to market in large numbers, in one or two shipments, thus commanding a better price and making more room for the pullets remaining; the hatching season is quickly over, the broody hens can be brought back to laying with little loss of time and all the grievances attendant on sitting hens, and hens with chicks, and chicks with lice will be eliminated. I really believe that half the mortality in hen raised chickens is due directly or indirectly to lice, and that mortality is avoided in using artificial methods."

"And you think the incubator is the solution of the hatching problem on the farm?"

"No, sir, only the beginning of real success with poultry on the farm. When I was a boy we never heard the word specialist, now everybody is something of one. Then the farmer produced everything he needed on the farm and in the home, except sugar and coffee. Wheat, he took to the mil to be ground into flour; if he had more wheat than he needed for his own flour, he supplied his town customers. We used to get our flour that way. He raised his own potatoes and enough for his town customers, sometimes having a load or two to take to the store. He raised oats for the horses, barley and corn for the hogs, rutabagas, turnips, carrots, cabbages for kraut and in the head for the cellar; killed his hogs, filled up the extra stone crocks with lard, made bacon and hams and sausage; molded his own candles, made his own soap, was about as sufficient unto himself as any king ever was. He furnished a select few in the town with the same layout for their cellars and so there were no specialists in town.

"While we lived in town, our fare was the same as the farmers, being supplied by him, the only change being an occasional soup bone. Our friend farmer, brought us a hog, at $3.00 per hundred, dressed. Mother made her own lard, head cheese and sausage, and we smoked the hams and bacon in the little old smoke house on the back lot. By the way, what has become of the smoke house? The only one I ever see any more is in town on Main street,—where the boys gather to roll their own and play pool. In those days every farmer had one and every other place in town had one. Gone to make room for the specialist, I suppose, along with the spinning wheel and candle mold. Now the farmer sends his hogs to market on the hoof, buys bacon and hams and Crisco. Whether they are as good or not, whether as cheap or not, he finds it more convenient, and conveniences are generally worth all they cost. His wheat goes to mill, and he buys flour; cream to the creamery and he buys butter; a small garden may be all right but his cellar holds canned corn and tomatoes and since the war, sauerkraut is taboo.

The Garden Argument.

"I have a neighbor farmer who won't even have a garden and I can't say that his argument isn't a good one. At first I thought it was pure laziness on his part and when I asked him how he could get along without fresh vegetables in season, etc., he said, 'We used to give about half an acre of our best land to vegetables and just as sure as I needed every horse, boy and man in the hay field that garden needed cultivating or irrigating. Finally I figured the returns from that garden in actual cash and when I figured against that sum the worth of that half acre, the labor and bother and waste I just said to the wife, 'here ends the garden.' We have all the fresh vegetables we want every day in the season; my neighbors can raise them just as good as I can and he has plenty for both families and the cost is no more than it used to be when we raised our own. When fall comes I just figure the value of one pig against the vegetables we have had to buy and that pig cost me no time and worry and only half as much money as the garden used to cost me. One pig in a pasture with a hundred others is less bother to me than a half acre of garden.'

"It's a day of specialists, isn't it? and more and more we are letting the other fellow do some things for us which he can do better or cheaper. I predict that about the time farmers generally adopt incubators they'll be ready to cut them into kindling, because, even as now they cannot afford to fool with thirteen eggs under a hen in May, when they could as well have two hundred going in an incubator in April, so then they will go over to the Corners with a basket and get a whole season's batch of chicks at one swoop. Let the hatching specialist invest his money in incubators and sit up nights worrying. The farmer will be willing to pay him for doing it. A brooder house of two hundred capacity if he wants sixty or seventy pullets for eggs next winter; a bigger one for a larger number; but no four months of hatching and brooding lousy chicks."

"Say, but you are a dreamer," I interposed. "When that comes true on the average farm won't raising the chicks be too much of a chore, won't we want to go over to the Corners and buy a bunch of pullets all ready to lay?"

"I am not looking that far ahead, but for all you and I know, it may be so and I may live to see it. Nothing surprises me in the way of advancement, but I am surprised to see so many people willing to do things as their mothers and fathers did. I am ready to say right here that the man or woman who goes on his or her serene way as of yore, has nothing but failure to expect. When eggs were 15 cents in summer and 30 cents in winter, and wheat a cent a pound, it didn't matter so much about getting chicks out early, but with eggs 75 cents and up in winter, and feed upper yet, to make money in the poultry game requires business management. You know I never pretended to know

S. C. W. Leghorns, Tom Barron's Imp. Pedigreed Stock

Hatching Eggs---Day-old Chicks

450 OF OUR BRED-TO-LAY PULLETS LAID OVER $800.00 WORTH OF EGGS IN NOVEMBER AND DECEMBER. If you want layers, place your order at headquarters and make no mistake. Get the bred-to-lay kind. They make money for us and our customers; they will for you. Write for catalog, prices and facts, before you buy eggs or chicks. It's free; it tells all, write
FOWLER EGG FARM, Route I-B, Fowler, Colo.

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Made of the finest grease stock and powdered mica, it keeps energy destroying friction at the hub down to a minimum. It polishes the spindles till they shine—smoothes over axle seams and pores for easier going—leaves the horses fresher at the end of a hard day's hauling. At most dealers.

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Have you had trouble or misunderstandings over the division of water for irrigation? Do you know if you are getting all the water to which you are entitled? The Burnham measuring device is the answer.

The R. Hardesty Mfg. Co.
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We manufacture a complete line of Irrigation Supplies, such as Flumes, Pipe, Gates, and other accessories. Write for catalogues and information.

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WRITE QUICK for Catalog and SPECIAL OFFER
Nests won't cost you 1c
Your hens will pay for them in More Eggs

Get 20 to 50% more Eggs, have healthier hens, make more money, with the Everlasting, Sanitary

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Galvanized Steel Lice Proof Nests. Costs less than wood. Unlimited guarantee. Send name today for Special Offer and interesting literature. 40,000 in use.
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For Poultry, Pigeons, Dogs, Cats, Rabbits, Parrots, Canary and other birds or pet animals, Germozone is a universal and safe remedy; for colds, snuffles, roup, sore throat, loss of voice or singing, influenza, bowel trouble, distemper, sore eyes or ears, canker, gleet, loss of fur or feathers, sores, wounds, skin disease, --or other affections of skin or mucous membrane.

"My hens have never done so well as this year and haven't lost a single chick"--Mrs. Flora Kapple, Walker, Ia. "Simply grand for rabbits"--L. W. Browning, Boone, Ia. "Cannot praise Germozone enough. I use it for chickens, stock and household"--Mrs. Wm. Hoeppel, Hugo, Okla. "My bird puppies don't know what distemper is and I never had such good success before with chicks"--Curly Smith, Kennett, Mo.

Germozone is sold by most drug, seed and poultry supply dealers, or mailed postpaid in 25c, 75c and $1.50 packages from Omaha. Book on treatment of diseases free with each package.

GEO. H. LEE CO. Dept. F-28 OMAHA, NEB.

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AND FIX 'EM "RIGHT"

Honey-Comb Cores installed in automobile, truck and tractor radiators. Write for price list and information booklet.

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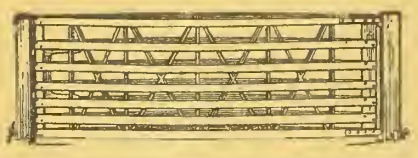

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Double bow; aeroplane construction. Light weight; can't sag, bend, twist or warp. Agents wanted everywhere. Write for particulars.
THE MASTER FARM GATE CO.
714 Equitable Bldg. Denver, Colo.

62 BREEDS PROFITABLE Pure-Bred Chickens, Geese, Ducks, Turkeys. Hardy Fowls, Eggs and Incubators at lowest prices. *Pioneer Poultry Farm.* Valuable poultry book and catalog FREE.
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Poultry Book Latest and best yet; 144 pages, 215 beautiful pictures, hatching, rearing, feeding and disease information. Describes busy Poultry Farm handling 53 pure-bred varieties and BABY CHICKS Tells how to choose fowls, eggs, incubators, sprouters. Mailed for 10 cents.
Berry's Poultry Farm, Box 66, Clarinda, Iowa

PLANS for Poultry Houses
ALL STYLES, 150 ILLUSTRATIONS. SEND 10 CENTS. INLAND POULTRY JOURNAL, Dep. 42, Indianapolis, Ind

all about the poultry game and you don't need to print what I am telling you, as I am only expressing an opinion, but the experience and observation of many years warrants me in giving your readers this advice; get an incubator or two and do it right now; don't forget brooder capacity enough and to spare; put up a snug, warm, cozy brooder house; if you mean business your first year's additional profit will square the bill."—W. E. V.

Is Lars Carlson Right?

As we started to say, "a friend in need is a friend indeed"; we consider Mr. Carlson a friend of Western Farm Life because he is always ready to respond to our S. O. S. signal, not to expound his own theories, but in the hope that his practices, in-so-far as they have proven good, may be of help where help is needed. Have you found buying baby chicks in large numbers more economical or more satisfactory than doing your hatching? Do our farm poultrymen, rather, poultrywomen, find the long season of hen-hatching burdensome and trying and expensive? Perhaps this part of the business is pleasant rather than otherwise, and friend Carlson is only speaking for himself. We invite our women readers who believe in voting to speak for themselves; surely they don't need any help from the men when it comes to expressing themselves!

FARM LABORERS

Are scarce article this season. Ask for free information about positive labor-saving methods on your farm.

GRISWOLD, 1730 Blake St., Denver.

Livestock Field Notes.

The Deming Ranch of Oswego, Kansas, announce a fine lot of bred sows and gilts for sale. These are bred for spring litters. Their herd sires are: Big Bobs Jumbo, the premium herd boar; Big Jones Again by Big Jones; Dividend, sired by Cook's Liberty Bond and a litter mate to the $1000 pig at Ed. Cook's sale last fall at Trenton, Mo.; Kansas Guardsman, a litter mate to The Clansman; Demings Special and Ranch Special. These are the futurity and junior pigs shown by them last year. Read their ad in this issue.

Dr. F .T. Daly of Cambridge, Nebr., announces his winnings at the recent Stock Show at Denver in our Livestock Department. He won the Junior and Reserve Champion sow, 1st and 4th on Junior sow pig, 2nd on young herd, 2nd on get of sire, 2nd on young herd by exhibitor, 2nd on produce of dam, and 3rd on junior boar. All these winnings were made on four head.

A public sale of Registered Guernseys will be held at the Ewing Farm near Fort Lupton, Colo., on Feb. 16th. Mr. Ewing is offering thirty head of fine cows that have been tested by the Johnstown Cow Testing Association. Read his ad in our Livestock Department of this issue.

The Sinton Dairy Co., and the Geo. T. Sinton Dairy both of Colorado Springs, Colo., are offering a few of their Registered and High Grade Holsteins for sale. This is one of the best known dairies in the state, and is an opportunity to get the right thing in Holsteins. Read their ad in this issue.

The Bonvue Farms of Denver carried off a big string of honors in the Milking Shorthorn class at the recent Stock Show. Out of eleven individuals showed by them they won seven firsts, three seconds and five thirds. Read their announcement in our Livestock Department.

The Carr W. Pritchett Ranch, La Mariposa, at Steamboat Springs, Colo., made a fine showing at the Stock Show. This ranch boasts the fact that 80 per cent of their cows are either granddaughters or great granddaughters of the great Whitehall Sultan. Read the ad on one of our Livestock pages of this issue.

One of the most remarkable records made at the Stock Show was that of Fulscher & Kepler of Holyoke, Colo. Read their ad in our Livestock Department of this issue. It gives the winnings of the sons and daughters of their herd bulls, Prince Domino, and Beau Aster.

Western Farm Life readers' attention is called to the card in this issue of Jos. Rouselle & Sons of Seward, Neb. They have some fine Percherons and Belgians. They took six premiums at the recent Stock Show at Denver.

REGISTERED JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.

H. J. VAUGHN, KIRK, COLO.

DUROC BRED SOW SALE FEB. 13th

At the Daly Farm, Cambridge, Neb.

This herd won Junior and Reserve Champion sow at the recent Stock Show. Also 1st and 4th on Junior sow pig; 2nd on young herd, 2nd on get of sire, 3rd on Junior boar.

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

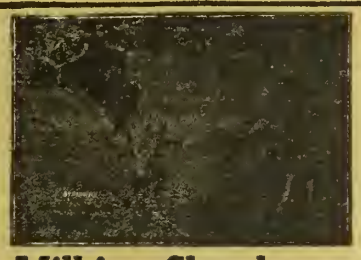
Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.

C. F. Burke, Mgr. Pueblo, Colo.



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THE OTIS HERD

To Dairymen:

Use a milking Shorthorn bull on your grade dairy cows and produce a good beef animal without loss of milk production.

Prominent winners, Denver Stock Show. Bulls for sale at reasonable prices. Headquarters Willoughby, Ohio.

Write for prices to our branch herd.

S. G. ROSE, Mgr.

Pine Valley Farms

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BIG TYPE POLAND CHINA HOGS—HERD HEADED BY BIG JUMBO, Missouri Prince, Cotton Wood King, and others.

Spring Boars and Gilts for sale.

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Herd Headed by Polled Dude 2nd 11187, 612340

Beau Donald, P. Plato and March On Blood in the Herd

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"OLD RED DURHAM COW"

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From Bates Shorthorn Blood

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Straight Bates Shorthorns are as Rare as Buffalo

We are engaged in reconstructive breeding of the "Old Red Durham" farm cow, by raising Straight Bates Bulls to head herds of farm cattle. But our supply is limited and choice is given in order of reservation.

THE CARPENTER CATTLE COMPANY

Greeley, Colorado.

DUROC JERSEYS

A few fall Duroc pigs sired by a son of Scissors, and from prize winning sows, $35 each.

Also an extra good March boar, sired by Big Bone Wonder.

AUGUST F. BORGMANN

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R. C. VAN SCOY & SON

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Phone Arvada 105-R-2.

DUROC JERSEYS

Extra good bred sows for sale. Also growthy open gilts and spring boars. Choice weanling pigs, pairs and trios, no akin.

The Nebraska Breeders Sales Co.

Lincoln, Nebr.

O. HARRIS & SONS $332,000 SALE

How Important a Part Did Publicity Play in this Great Sale?

Perhaps every one of the Western breeders who will read this issue of Western Farm Life will realize that it took something more than 143 head of prize Herefords themselves to bring the enormous sum of $332,000. Those who are making a study of marketing purebred stock will readily concede that in addition to the excellent animals offered by Harris & Sons, their reputation as breeders and the reputation of their herd were very important factors.

Their success in this sale was due to good breeding, judicious show ring advertising and continuous advertising in periodicals. Without the use of this publicity, which has extended over a number of years, this sale would not have been of sufficient importance to have attracted general interest.

This sale should teach every Colorado breeder the importance and value of good publicity. Breeders should, however, not make the mistake of commencing at the top with their publicity and be forced to taper down, but should commence at the bottom and build their publicity and enlarge it from year to year to cover a wider scope, and a larger list of prospective buyers. The breeder should first show and advertise to build a reputation for his herd locally, and in his own state.

Western Farm Life reaches 50,000 subscribers each issue, 25,000 subscribers each issue in the State of Colorado. Its columns afford the Western breeder the best sort of a medium with which to start the foundation work for profitable publicity. Each and every breeder who has purebred stock to market or expects to market in the future will find a breeders' card the best sort of an investment. To encourage the use of these cards a special low rate has been made.

Don't delay starting your breeders' card in Western Farm Life. Write us now regarding it. We do not require payment in advance for these breeders' cards. Payment can be made monthly or at other stated times to suit the convenience of the breeder.

WRITE US TODAY

ADDRESS BREEDERS' DEPARTMENT

Western Farm Life

1518 COURT PLACE,

DENVER, COLORADO.

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PUREBRED ABERDEEN-ANGUS CATTLE

Owing to crowded pasture and change of business I am closing out my entire herd of

ANGUS CATTLE AND PERCHERON HORSES

I still have 35 head of females and bull calves of first class quality.

Also a good bunch of registered Percheron mares, all ages, some coming 2-year-olds, and our aged stallion.

This livestock will be priced right if taken at once.

G. F. LUCORE, Arriba, Colo.

On Rock Island Railroad.

BRED SOWS AND GILTS

We are offering a lot of choice Poland China Bred Sows and Gilts, all bred for March and April litters.

State Fair winning blood runs through our entire herd.

Write Us Your Wants.

THE DEMING RANCH,

Oswego, Kansas.

Facts in BLACK & WHITE

Selling Purebred Holstein Cattle is Profitable

Do you realize that purebred Holstein calves bring a very liberal price? Every day this breed is becoming more and more known. Breeders are telling the public about the value of the milk. The demand today for purebred Holsteins is greater than the supply. Here is opportunity for you to get rich. Hundreds of calves every year are sold from $100 to $200 apiece. With plenty of food and ordinary care these cattle will average from 350 to 500 pounds of butter per year. Can you see opportunity here? Remember, "Holsteins are the most profitable cattle."

Send for Free Illustrated Booklets.

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Purebred bay stallions and mares, 2 to 6 years old, weighing 1,800 to 2,150 lbs. The best that the world can produce. Every one has been a first or second prize winner at Denver.

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SEWARD, NEBR.

Farmers' and Stockmens' Exchange

Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. AdvertisIng copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us In a trial advertisement. Write for proof showing how these columns pay advertisers.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

PLYMOUTH ROCKS

BARRED PLYMOUTH ROCKS—BOTH LIGHT and dark, winners at State Fair and National Western, excellent layers, a fine bunch of cockcrels, at $4 and $5 and up. A few hens and pullets. Chester Blunt, Route 1, Greeley, Colo.

JUST ONE CHANCE TO BUY A TRIO OF VAplon's White Plymouth Rocks. Have to move and will dispose of half my hens. Will sell you two hens and a cockerel for $12.50; a good cockerel for $6.50; money back if you don't think you get more than your money's worth. W. E. Vaplon, Fort Collins, Colo.

WHITE ROCKS.

LIMING'S HEAVY WEIGHT WHITE ROCKS. Eggs $2 per 15. Quality Fruit & Poultry Farm, Manzanola, Colo.

BARRED ROCKS.

PURE BRED BARRED ROCK COCKERELS, large bones, vigorous birds, $2.50 and $4. Egg orders booked. R. D. Mutz, Fowler, Colo.

RHODE ISLAND REDS

BEAUTIFUL ROSE COMB RHODE ISLAND RED cockerels; large and well matured; $2.50, $3, $4, $5. Lucy Ruppenthal, Lucas, Kans.

FOR SALE—PURE BRED ROSE COMB RHODE Island Red cockerels, from blue ribbon stock, $4 each. Mrs. Ernest Hieber, Burns, Wyo.

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

LOWER'S POULTRY FARM, ARVADA, COLO., is the oldest and largest breeder of thoroughbred S. C. Rhode Island Reds in the West. Our stock is line bred, from selected heavy laying type for seventeen years. Eggs for hatching, $12 per 100, $5 for 30. Send for catalog and price list of stock and baby chicks.

BRAHMAS

WANTED—LIGHT BRAMA AND SPECKLED Sussex pullets, from western breeder. H. A. Bushby, Roswell, Idaho.

FOR SALE—THOROUGHBRED LIGHT BRAHMA Cockerels, from prize winning stock. Best in the west. Prices reasonable. E. Grosser, 2240 Perry, Denver, Colo.

LANGSHANS

FOR SALE—PUREBRED WHITE LANGSHAN Cockerels, $3. T. R. Elliot, Merino, Colo.

BLACK LANGSHANS OF SIZE AND QUALITY. Winter layers, win wherever shown. O. I. Moon, Fort Morgan, Colo., North Star Route.

LEGHORNS

ROSE COMB BROWN LEGHORN ROOSTERS, state winners; three dollars. Rufus Standiford, Reading, Kansas.

KYFFIN'S BUSINESS BUFFS—EGG BRED S. C. Buff Leghorns, few fine cockerels, $5 each. Mrs. J. W. Kyffin, Route 2, Box 142 B, Pueblo, Colo.

TOM BARRON SINGLE COMB WHITE LEGhorns. Eggs for hatching. E. B. Morger, Fowler, Colo.

S. C. WHITE LEGHORNS—NOW IS THE TIME to place your order for hatching eggs. My hens are bred to lay, and do it. L. E. Larson, Fort Morgan, Colo.

DO YOU WANT BIG WHITE EGGS ALL WINter? We sell machines that produce them. Single comb white Leghorn pullets, cockerels, yearlings, hatching eggs and baby chicks. Ask for prices and trap-nest records. Satisfaction guaranteed. Blakeland Farm, Littleton, Colo.

RIVERSIDE POULTRY FARM SINGLE COMB White Leghorns. Heavy winter layers. Today, Jan. 1, we gathered 330 eggs from 450 pullets and 200 yearling hens. We have been breeding our Leghorns for 15 years to lay more eggs than common hens at all times, especially in winter when eggs are high. We breed from nothing but winter layers. Get Walker's strain and get winter layers. Baby chicks and hatching eggs for sale. Prices reasonable. Write for circular and price list. H. D. Walker & Sons, La Junta, Colo.

MINORCAS

SUYDAM'S MINORCAS—SPECIALTY BREEDER of Single Comb Black Minorcas. Exhibition and utility, cockerels, cock birds; hens and pullets for mating. Eggs, baby chix. Satisfaction guaranteed; write for price. H. R. Suydam, 4500 Bryant St., Denver.

ORPINGTONS.

FOR SALE—S. C. BUFF ORPINGTONS, COCKerels, farm raised. W. H. Pundt, Deer Trail, Colo.

FOR SALE—PURE BRED BUFF ORPINGTON roosters, 1 and 2 years old, $3 to $6 each; Mrs. Henry Swan, Hugo, Colo.

BUFF ORPINGTONS—COCKERELS $3, $2, $1.50 each; eggs $7 a hundred, $1.25 a setting. Rouen Ducks and drakes, $2 each. Leslie Chrestensen, Route A, Akron, Colo.

ANCONAS.

SUNNY SIDE EGG BRED S. C. ANCONA, WINners and layers. Exhibition pens $5 per 15; eggs from selected layers $2 per 15, $10 per 100. No eggs from utility stock for sale. Mr. and Mrs. J. B. Shenk, R. F. D. No. 2, La Junta, Colo.

SEVERAL VARIETIES

BABY CHICKS—ORDER EARLY, GET CHICKS from the winter layers. Price list. Sarver Poultry Farms, Hastings, Nebr.

EGGS FOR HATCHING—SILVER CAMPINES, $2; Buff Leghorns, $2; Blue Andalusians, $2; Single C. R. I. Reds, $2 for 15 eggs. John L. Miller, Arvada, Colo.

PULLETS, COCKERELS, YEARLING HENS. Write for prices of extra quality breeding stock; satisfaction, of course. Denver Baby Chick Co., Box 1323, Denver, Colo.

WANTED—200 CASES OF EGGS, THOROUGHbred chickens, for hatching; will pay fancy price; what have you? Denver Incubator Co. & Hatchery, 173 South Broadway.

MARVELOUS NEW INVENTION INCREASES your batches and prevents chicks from dying in the shell. Particulars free. Robert C. Lewis, 1202 Dartmouth Ave., Minneapolis, Minn.

BUFF LEGHORNS, RHODE ISLAND REDS—best layers on earth. Headquarters for cockerels, baby chix; hatching eggs. Write us your wants. Champney, 2057 South Broadway, Denver.

YOU BUY THE BEST CHICKS FOR THE LEAST money, from the Colwell Hatchery, Smith Center, Kansas. 150,000 to be shipped everywhere; 18 cents each, 500 for $89; guaranteed alive or replaced free.

COLUMBIA HATCHERY—WE CAN SUPPLY you with any quantity of Baby Chicks. We have 14 varieties including all leading breeds. Write for our prices, you will save money. P. O. Box 1102, Denver, Colo.

BABY CHICKS THAT WILL LIVE AND THRIVE in this mountain territory. Eggs selected from the best Colorado flocks. Remember we have the only hatchery in Denver. Buy direct from us and save reshipping. Present capacity 30,000 eggs. Incubators and Brooders. Denver Incubator Co. and Hatchery, 173 South Broadway.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

CATTLE

FOR SALE—YEARLING REGISTERED HOLstein bulls. Nels Anderson, Niwot, Colo.

FOR SALE—20 HEAD HIGH GRADE MILKING Shorthorn heifers, 8 to 20 months old. J. P. McEnroy, Larkspur, Colo.

FOR SALE—30 HEAD HIGH GRADE MILKING Shorthorn springing heifers. Geo. H. Stewart, Sedalia, Colo. Phone 82-J-5.

FOR SALE—WELL MARKED, HIGH GRADE heifer calves, $25 each. Satisfaction guaranteed. Art Rasche, Lake Mills, Wis.

FOR SALE—REGISTERED HOLSTEIN BULL calf, beautiful calf; good breeding; $75.00. Geo. S. Turner, Canon City, Colo.

FOR SALE—REGISTERED HOLSTEIN BULL calves from advanced registered dams. Excellent breeding. Priced right. Garmesa Farms, Fruita, Colo.

FOR SALE—TWO PUREBRED HOLSTEIN BULL calves, 2 and 5 months old, sired by a son of Champion Dekol, from good producing dams. Address H. F. Lombard, Concrete, Colo.

REGISTERED HEREFORD BULLS; ABOUT forty well grown, rugged Hereford bull calves. Good bone, good markings and the best of anxiety fourth breeding. Not fitted for show purposes, but the kind you will appreciate in your herd. J. O. D. Ranch, Aroya, Colo.

HOGS

BIG BONE POLAND CHINA, FALL GILTS, $40; yearling sows, $100. J. O. Hendricks, Seibert, Colo.

REGISTERED SPOTTED POLANDS. A FEW choice boars and gilts. John B. Young, Cedaredge, Colo.

FOR SALE—POLAND-CHINA PIGS, CHEAP, from weaning size up, big type (registered). Write F. L. Toliver, Fort Collins, Colo.

FOR SALE—REGISTERED BIG TYPE DUROCJersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

STOCK HOGS WANTED—WE WANT TO BUY several hundred head of pigs and hogs weighing from 60 pounds up. Let us know what you have for sale. Write Duroc Farms, 412 Cooper Building, Denver, Colo.

REGISTERED BIG TYPE DUROC JERSEY boars and gilts, the kind that brings the money at the block. Fashionably and strongly bred by our herd boar, Orion Cherry King 15th, and out of Defender sows. We are sold out on anything up to July farrow. Money back if not satisfied. J. O. D. Ranch, Aroya, Colo.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

BEST WHITE BLOSSOM SWEET CLOVER, VERY reasonable. John Lewis, Route 1, Madison, Kan.

WHITE SWEET CLOVER FANCY COLORADO hulled, scarified seed, 100 lbs. $32.00. Catalogue free. Long Seed Co., Boulder, Colo.

1,000 ONION SETS $1.00, PREPAID. CATAlogue free. Long Seed Co., Boulder, Colo.

GROW YOUR OWN SUGAR—GENUINE SUGAR beet seed, with instructions for making syrup and sugar, 4 ozs. 25c. Catalogue free. Long Seed Co., Boulder, Colo.

MINNESOTA NO. 13 SEED CORN—CERTIFIED and registered stocks. Catalogue free. Long Seed Co., Boulder, Colo.

ALFALFA SEED—FANCY WYOMING COMMON and certified Montana Grimm. Samples, catalogue free. Long Seed Co., Boulder, Colo.

WANTED—ONE TON ALFALFA SEED, ALSO sweet clover seed. Quote price and germination. Harold Ketner, Broomfield, Colo.

STRAWBERRY PLANTS.

STRAWBERRY PLANTS—DAHLIA BULBS, 150 kinds. Write for prices, all kinds nursery stock. McMullen Nursery, Box 374, Council Bluffs, Ia.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

AGENTS—WRITE TODAY FOR CATALOG OF our sprayer and autowasher. Do not miss this opportunity. Columbian Mail Crane Co., Columbus, Ohio.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

U. S. GOVERNMENT WANTS HUNDREDS OF railway mail clerks. Beginner's salary, $1,300 year. Men-women, 18 up. List positions free. Write today. Franklin Institute, Dept. 0171, Rochester, N. Y.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

IF YOU WANT TO SELL OR EXCHANGE YOUR property, write me. John J. Black, 33rd St., Chippewa Falls, Wis.

SHAWNEE OKLAHOMA—CENTER OF A RICH farming country; write for information. Board of Commerce, Shawnee, Okla.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

FARM AND CATTLE RANCHES—CHOICE LIST. If interested call or write F. E. Wrockloff, Merchants Bank, Seventeenth and Curtis Streets, Denver, Colo.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description, location and cash price. James P. White, New Franklin, Mo.

REAL ESTATE WANTED—SELL YOUR PROPerty quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., Dept. 11, Lincoln, Neb.

320, 160, 120 ACRE IMPROVED. BEST OF Weld county's non-irrigated land priced below par for quick sale. Write or see B. A. Gunn, owner, Purcell, Colo.

CHOICE BEET LAND NEAR FACTORY, 40-80-160 acres, well improved. Dairy farms and ranches; small tracts and city properties; some places for rent. C. F. Thayer, Fort Morgan, Colo.

FOR SALE—A MODERN EQUIPPED DAIRY, with a 35 to 40 gallon retail trade into Portland and Concrete. Two growing cement towns. For particulars address H. J. Lombard, Concrete, Colo.

FOR SALE—480 ACRES IRRIGATED, BOULDER county, private reservoir; 125 acres Grimm alfalfa, 62 acres wheat, 3 sets of improvements, 1½ miles woven wire. Good terms to good man; sell part or all. L. E. Chenault, 1225 Clarkson, Denver, Colo.

FOR SALE—240 ACRE STOCK RANCH, FIVE miles west of Saguache, Colo.; new 7-room brick building and garage, all fenced and cross fenced with 32-in. hog wire; 4 ft. good early water right; also have some stock. For further information address Daniel Virgil, P. O. Box 58, Saguache, Colo.

BIG LAND SALE—NEAR DENVER—30,000 acres being closed out by trustee at forced sale under order of court; rich soil; good water rights; good title; your chance to select a good farm on small cash payment and ten yearly payments for balance—all within 10 to 40 miles of Denver, and all near good railway towns. Come or write the Trustee immediately for literature. Chicago Title & Trust Co., Trustee, 701 Ideal Bldg., 17th and Champa Streets, Denver, Colo.

344-ACRE MIDWEST FARM $5,000, ON STATE road, near R. R. center; motor bus passes farm; well drained productive tillage, stream-watered, pastured; wood, timber, fruit; 10-room house, steam heat, large barns, etc. To settle quickly, low price $5,000 is made, easy terms. Details page 73 Strout's Catalog Farm Bargains 23 states; copy free. E. A. Strout Farm Agency, 831 B. A., New York Life Bldg., Kansas City, Mo.

FOR SALE—560 ACRES WHEAT AND STOCK farm; 140 acres in summer fallowed winter wheat; 220 acres in cultivation; 200 acres in pasture. New bungalow house 24x34; good improvements. All fenced and cross-fenced; also have good cane, millet and sudan grass seed for sale. Almost new Fordson tractor and 14-inch plows. Ray Gotfredson, Buckingham, Colo.

ATTENTION STOCKMEN — WE HAVE TWO stock ranch bargains. Just what you are looking for; each ranch comprises 320 acres deeded land with substantial improvements and large acreage under irrigation, and in alfalfa, timothy, clover hay, unlimited outside free range, with 4,000 acres of leased land under fence for fall pasture. These ranches are located three miles apart, 125 miles from Denver. Good shipping point, big money makers. Prices $12,000 and $13,600 on good terms. See us at once for these. Reynolds, Covey & Reynolds, 625 Exchange Bldg., Denver, Colo.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

RED CEDAR SPLIT FENCE POSTS—GUARANteed full size and A-1 quality. You pay after unloading. Send for booklet and prices, delivered your station. Kirk Company, Box 1138-S, Tacoma, Washington.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—OR TRADE FOR LAND, WALLIS Cub Tractor, with four-bottom plow, 12-ft. tandem disc and press drill. Write for more particulars. Gus Herfert, Julesburg, Colo.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

TYPEWRITER

GOOD TYPEWRITER FOR SALE CHEAP—FREE trial, easy payments if wanted. Write Bertha Payne, Shawnee, Kansas.

TANNING

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

INVENTIONS

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

GROCERIES AND SUPPLIES

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

AUTO AND TRACTOR SCHOOL

DENVER Y. M. C. A. AUTOMOBILE SCHOOL guarantees satisfaction in teaching these trades: Automobile repairing; tractor operation and repair; oxy-acetylene welding; vulcanizing and tire repair; starting, lighting and ignition; machine shop practice 334 students last year. Tuition fees moderate. Practical work under seven practical instructors. Write today for illustrated booklet. The Y. M. C. A. also conducts splendid preparatory and commercial schools for young men.

WANTED—MEN TO LEARN TO OPERATE AND repair all makes of autos and gas tractors. Hemphill Bros. have established a large standard Automotive School in the city of Salt Lake, with a complete line of equipment, including Automobiles, Tractors, Marine and Stationary Engines, 2-cycle and 4-cycle types, also hundreds of Carburetors, Magnetos, Motors, Generators, Electros, Armatures, Starters, Thermostats, Condensers, Mercury Arc Rectifiers, Viscosity Testers, Hydrometers, Voltmeters, Ammeters, Compressmeters, Motormeters, and in fact every known device used in Automotive Engineering. Hemphill Bros. operate the largest chain of Auto and Tractor Schools in the world; father and seven sons all experts and specialists. The Salt Lake management is so confident that this institution is superior to any other school in America, that you may attend this college on trial, and at the end of four weeks if this school does not prove to be the best of its kind in the world, not only will the four weeks be free, but also your fare to and from Salt Lake, and wages for every hour spent at the school. If this was not a superior different school, this offer would be suicidal. Beautifully pictured catalogs do not prove the merits of an institution; the proof of the pudding is in the eating. Come and try this school at our expense. This is not a book and blackboard affair, but a real honest practical college of Automotive Engineering. You take the tools in your hands under expert instructors. Write for free information and catalog on special rates. Hemphill Bros. State Auto and Tractor School, 343 So. Main St., Salt Lake City, Utah.

PIPE

2,500 FEET 10-INCH, 14-GAUGE SPIRAL RIVeted pipe; price, 50c to $1.00 per foot; 3,000 feet 16-inch, 16-gauge riveted pipe slip joints, 75c per foot. Above pipe ideal for irrigational work where low pressure is used. 2,000 feet 18-inch, 14-gauge slip joint new riveted pipe, 50c per foot; 300 feet 12-inch, 14-gauge double riveted flanged joint, $1.00 per foot. Above new pipe, heavily tarred. Above prices F. O. B. Colorado Springs; pipe offered subject to prior sale. The Rebuilt Machinery Co. Present office and salesroom with The Hassell Iron Works Co., Colorado Springs, Colo.

Registered Breeding Bulls and Heifers

HEREFORDS SHORTHORNS

Young sctock of both sexes for sale at all times. Our sales yard is located within two blocks of The Denver Union Stock Yards. We are pleased to show our stock at all times.

THE LOWELL PUREBRED CATTLE CO.

Union Stock Yards, Denver.

FOR SALE.

Registered Shorthorns

Five fine Heifers, from 6 to 11 months old. All sired by Choice Lad 522193, and from good milking dams.

Three young cows out of Young Donald and Colorado Archer; all safe in calf by my herd bull, Scott Free, out of Bruce Royal, a beautiful roan of pure Scotch Breeding, who won First Premium and Grand Champion at Kit Carson County Fair. **Well-Bred Growthy Stock Priced Right.**

Upland Shorthorn Farm

E. B. Watkins. **Burlington, Colo.**

ShorthornCongress

Make your plans now to attend the Third National Shorthorn Congress at Chicago, International Livestock Pavilion, February 17, 18, 19. $5,000 offered in prizes and all show cattle, 250 head, will be sold at auction at the time. Come and bring your neighbors. No admission charge.

American Shorthorn Breeders' Association

13 Dexter Park Avenue, Chicago, Ill.

Let Western Farm Life Service Bureau help solve your problems.

Combination Livestock Public Sale

10 A. M. --- Thursday, February 19th --- Longmont, Colo.

THIS SALE WILL BE HELD IN THE HEATED SALE PAVILION ON THE FAIR GROUNDS, INSURING COMFORT FOR ALL WHO ATTEND.

67 HEAD OF PUREBRED LIVE STOCK

Will Be Offered At Public Auction by the Purebred Livestock Associations of Boulder and Larimer Counties.

The Consignments Come From the Leading Breeders of the Two Counties, and Consist of Useful Well-Bred Individuals. Everything Will Be Inspected by A Committee Before It Is Allowed to Enter the Sale.

THE CONSIGNMENTS.

8 Horses 7 Percherons—4 mares and fillies; 3 Stallions. 1 Suffolk Stallion.

23 Beef Cattle 21 Shorthorns — 7 bulls and 14 females. 2 Hereford bulls.

15 Dairy Cattle 11 Holseins — 7 bulls, 4 females. 4 Jerseys—1 bull, 3 females.

21 Hogs 13 Poland Chinas; 2 Boars, 11 females. 8 Duroc Jerseys—1 boar, 7 females.

LIST OF CONSIGNORS.

HORSES.

Zang Investment Co., Broomfield, Colo.
A. B. Hamilton, Loveland, Colo.
Clarence Bixler, Boulder, Colo.
David Eisele, Longmont, Colo.

BEEF CATTLE.

Shorthorns.

Henry Harman, Boulder, Colo.
David Warnock & Sons, Loveland, Colo.
W. A. Dickens, Longmont, Colo.
Glen Martin, Boulder, Colo.
Geo. Miller, Lafayette, Colo.
Bert Hart, Longmont, Colo.
R. C. Gilpin, Loveland, Colo.
I. M. Watts, Timnath, Colo.

Herefords.

Chas. C. Stobbe, Ft. Collins, Colo.

DAIRY CATTLE.

Holsteins.

Lohey & Wales, Johnstown, Colo.
Krebble & Van Meter, Loveland, Colo.
Lee Johnson, Longmont, Colo.
E. E. Johnson, Niwot, Colo.
Marcus Harper, Boulder, Colo.
Harry Hankins, Boulder, Colo.

Jerseys.

J. D. Pancake, Loveland, Colo.
Geo. Morton & Sons, Ft. Collins, Colo.

HOGS.

Duroc Jerseys.

Bert Hart, Longmont, Colo...
Godfrey Bros., Fort Collins.

Poland Chinas.

W. R. Reynolds, Longmont, Colo.
J. A. Davidson, Longmont.
A. D. McGillvray, Boulder, Colo.

FOR CATALOGS OF THIS SALE, AND FURTHER INFORMATION, ADDRESS

D. A. JAY, 944 Marine Street, Boulder, Colorado

Will Sell at Public Auction

Feb. 10 and 11

Harriman Ranch

12 Miles southwest of Denver, 4 miles straight west of Ft. Logan, and 8 Miles northwest of Littleton.

310 Head High Grade Stock

45 HEAD HORSES—25 head mares, from 3 to 6 years old, weight from 1400 to 1950 lbs. each. Six head geldings from 1400 to 1600 lbs. each, age from 4 to 5 years. Fifteen head of 1- and 2-year-old colts, all heavy boned. One Percheron stallion 9 years old, weight 2250 pounds.

195 Head of Cattle

60 head of high grade Holstein Milk Cows; fresh and springers. Sixty head 2-year-old Holstein heifers, Thirty-three head red steers, 2-year-olds. Ten head 2-year-old red heifers. Thirty-five head Holstein heifer calves.

60 Head of Hogs

Several good brood sows will be offered. Your chance for some good stuff.

ALL FARM MACHINERY necessary to run a 1400-acre ranch will be sold. Horses and miscellaneous stuff will be sold first day of sale.

Write for further particulars to

J. A. Pearman & Sons, Owners, Littleton, Colo.

Phone Littleton 57-W or Littleton 173-J4.

COL. G. M. BANKS, Auctioneer.

YOU SAW WHAT WE DID

At the National Western Stock Show. We can sell you Cows, Bulls and Heifers.
Let us know what you want.

STILL A FEW DUROCS FOR SALE.

A. M. McCLENAHAN, GREELEY, COLO.

JEWELFIELD FARM
Big Type Poland Chinas
A few choice young Boars and Gilts for sale.
You will find no better blood lines anywhere.
Priced Right
L. L. MATHISON Pt. Morgan, Colo.

H. C. DENNIS, Auctioneer
FORT MORGAN, COLORADO
Registered Shorthorn and Jersey Cattle
Real Estate Sales Conducted. I can sell your real estate if it can be sold.
Wire at my expense for dates.
Phone: Res. Morgan 165J; Office Morgan 15

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30 HEAD Public Sale 30 HEAD

HIGH GRADE

Guernsey Cows

AT THE EWING FARM, 1½ MILES NORTHWEST OF FORT LUPTON, COLO.

February 16th, 1920

I have been breeding up this herd for ten years, keeping nothing but Registered Bulls with strong A. R. backing. All cows not coming up to my standard are culled out.

These cows are tested by the Johnstown Cow Testing Association.

The entire 30 head will be sold. This is an opportunity to get some choice Guernseys.

Records of the cows will be furnished by the Cow Tester.

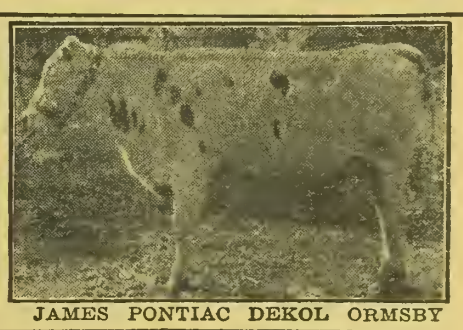
For further particulars write

W. A. EWING, *Fort Lupton, Colo.*

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.
He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
JOHNSTOWN, COLO.



JAMES PONTIAC DEKOL ORMSBY

Glendale Stock Farm

Irvindale Rowdy
Grand Champion Belgian Stallion Chicago, 1917, Denver, 1918 and 1919

Breeders of
BELGIAN HORSES and POLLED HEREFORD CATTLE

Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.

Watch For Our Sale

Of Grade Holsteins
IN MARCH

We have used Registered Sires for Thirteen Years.

No Better Herd in Colorado.

Oaklands Holstein Ranch
C. W. Curtis & Sons,
SEDALIA, COLORADO.

Do You Want a Real Bull at a Moderate Price

We have a few choice calves —some old enuff for service— sired by

Sir Johanna Bess Segis

His Dam is a 1000 lb. daughter of King Segis Pontiac Count. His sire is Piebe Laura Ollie Homestead King, only bull in the world with four 20000 lb. two year old daughters.

Ten of his get won more than half the money offered at the Utah State Fair last year in the classes under two years. Nine herds competed.

Let us send you Sir Bess' Pedigree. We should like to tell you about his sons that we are offering at $150.00 to $400.00.

Our herd is clean. Uncle Sam says so.
We guarantee safe delivery at your R. R. Express Station.

Pahgre Valley Ranch

MONTROSE, COLORADO.

La Mariposa

The Carr W. Pritchett Ranch

STEAMBOAT SPRINGS, ROUTT CO., COLO.

The Home of

La Mariposa Shorthorns

Headed by LOYAL STAMP No. 494953 a splendid grandson of the great WHITEHALL SULTAN, sired by SULTAN STAMP, one of his grandest sons and out of AUGUSTA O. A. C. 2nd.

SULTAN blood predominates in my herd, 80 per cent of the cows being granddaughters or great granddaughters of Whitehall Sultan.

LOYAL STAMP was exhibited at the National Western Stock Show at Denver this year for the first time, in just good breeding condition so that stockmen in general could judge his worth as a great bull and worthy descendent of WHITEHALL SULTAN.

I have still a few good young bulls for sale of intensely bred SULTAN blood.

I respectfully solicit correspondence and inspection.

Carr W. Pritchett, Steamboat Springs, Colo.

THE HEREFORD CORPORATION OF WYOMING

Ranch Six Miles From Cheyenne, Wyoming

Registered Herefords Exclusively Anxiety Bred

We have on hand two carloads of coming 2-year-old bulls in fine condition for service. Several cars extra good yearling bulls for sale. Write us for prices and detailed information.

OFFICES

First National Bank Building, Cheyenne, Wyo.
406 New Live Stock Exchange Building, Union Stock Yards, Denver, Colo.

RAYMOND S. HUSTED, Manager

WM. J. ROSSMAN, Ranch Superintendent. **JAMES C. ADAMS, Salesman**

Wyoming 4th

L. G. DAVIS HEREFORDS

ANXIETY-BRED

Sires in service:

The great **BEAU CARLOS 2D 352001, sire of** Wyoming and many other winners.

BONNIE WESTON 558495, son of Bonnie Brae 15th.

WYOMING 4TH 603868, champion senior yearling bull of 1919 Denver show; sired by the grand champion Wyoming.

We have a few highclass yearling bulls for sale. Ranches at Saratoga, Wyo., and Denver, Colorado.

L. G. DAVIS **SARATOGA, WYOMING**

Western Holstein Farm

HALL BROS., Props.

Breeders of the correct thing in Holsteins. Colantha-Johanna-Ormsby Families. Pedigrees full of great show-ring winnings and world's record milk and butter production. Send for circular.

BULL CALVES $200-$500 EACH

Address Box 2, South Denver Station, Denver, Colo., or visit the Farm, 5½ miles southwest of Denver on the Morrison Road.

AT THE NATIONAL WESTERN STOCK SHOW, DENVER,
January 17—24, 1920,
We showed MILKING SHORTHORNS in 11 individual classes and won:

7 Firsts,
3 Seconds,
5 Thirds.

We won first in all the groups as follows:

1st—Aged Herd.
1st—Young Herd.
1st—Calf Herd.
1st—Get of Sire.
1st—Produce of Dam.

In the get of our Herd Sire, Duke Glenrose, all four were First Prize winners in their respective classes, one was Junior Champion bull and one Junior Champion heifer. Duke Glenrose Sires Good Calves.

Write for Illustrated Booklet.

BONVUE FARMS CO., Stockyards, Denver, Colo.

C. H. Hinman, President.

Hermosa Ranch Herefords

Herd Bull—MISCHIEVOUS JR., by The Heir.

Dam full sister to BEAU MISCHIEF and dam of PRINCE IMPERIAL.

Very few high class herd bull prospects are for sale sired by Prince Imperial and other celebrated bulls.

Farm on the Morrison Road 9 miles from Denver.

T. L. DeWitt, Owner, 1550 Ogden St., Denver

COL. H. C. JENNINGS

Pure-bred Livestock

AUCTIONEER

Also conduct Sales of Real Estate

534 17th St.
Denver, Colo.
Phone M-6870

Send for our new illustrated leaflet on

THE FOREST GLEN SHORTHORNS

THE CORNFORTH LIVESTOCK COMPANY

Elbert, Colorado

Straight and Polled Shorthorn Cattle

Valentine's Last X12316 452005 at head of beef herd. Claywood White 427350at head of milk type.

STATE INDUSTRIAL SCHOOL
Golden, Colorado

LaBELLE RANCH

Home of Cherry Chief

Sire of many of Colorado's Prize-winners, has a nice lot of choice spring and fall pigs by this great boar

Also some sows bred to Cherry Chief for sale.

H. G. SQUIBB **AURORA, COLO.**

Lerna Baker Pietertje, Grand Champion Cow at the El Paso County Autumn Exposition, 1919.

We Are Offering a Few

Registered and High Grade

2, 3, and 4-Year-Old

Holsteins

These animals are all from the Sinton Dairy Company herd of 250 high grade females; and the Geo. T. Sinton dairy herd of 35 head of registered females.

At Present we have some A. R. O. Females, and every cow in the herd is capable of good records.

The Geo. T. Sinton herd is the home of Lerna Baker Pietertje. This remarkable outstanding Holstein won the Grand Champion Cow at the El Paso County Autumn Exposition held last fall at Colorado Springs. This is just an indication of the breeding we are developing at our dairy.

This stuff is all from highly bred, profit-producing stock; free from tuberculosis, and in the most excellent physical condition. This is your chance to get some REAL Holstein dairy cows.

WRITE US YOUR WANTS, ADDRESS

Geo. T. Sinton, Treas., The Sinton Dairy Company

COLORADO SPRINGS, COLO.

72 Holsteins

40 Duroc Jerseys

Public Sale

March 5, '20

AT THE LIVESTOCK AUDITORIUM ON THE FAIR GROUNDS AT

LONGMONT, COLO.

I am offering 60 head from my Registered Holstein Herd and 12 head from my High Grade Holsteins. These animals are good producers, and well fitted to be the foundation of your dairy herd.

I WILL ALSO OFFER 40 HEAD OF REGISTERED DUROC JERSEYS.

These will include some excellent individuals; and all are good growthy animals.

Col. G. M. BANKS, Auctioneer

Colonels Bashor and Sauer, Ringmen.

For further particulars of sale write

D. H. STEPHENS,

Cherwall Creamery **Longmont, Colo.**

Prince Domino 499611

Beau Aster 412145

Sire and Grandsire of the Grand Champion Hereford Female of the 1920 National Western Stock Show; Sire and Grandsire of the First and Second Prize Junior Bull Calves in 52 entries; Sire and Grandsire of the First, Third, Fourth and Sixth Prize Heifer Calves in 43 entries; Sire and Grandsire of the Champion Futurity Bull and the Champion Futurity Heifer at the 1919 National Western Stock Show; also Sire and Grandsire of the First, Second and Third Prize Junior Bull Calves in a class of 33 head; the Sire and Grandsire of the First, Third and Fourth Prize Junior Heifer Calves.

THOSE WHO ARE LOOKING FOR REGISTERED HEREFORD CATTLE OF TRULY CONSTRUCTIVE BREEDING SHOULD COME AND SEE OUR CATTLE.

We Are Always Pleased To Show Them.

Valley View Hereford Ranch

FULSCHER & KEPLER **HOLYOKE, COLO.**

There's a Satisfied User Near You

Do you realize what this means?

No matter where you live—in Maine or California—Oregon or Florida—Somewhere among your neighbors and friends you will find Delco-Light.

And where you find Delco-Light you invariably find "A Satisfied User."

And these satisfied users—over 100,000 of them altogether, are the concrete evidence of Delco-Light leadership in the Farm light and power field.

Look up a Delco-Light user in your neighborhood—

Ask him what Delco-Light is doing for him—

Note the smile of satisfaction that comes over his face as he tells you of the never-failing, day-after-day service that Delco-Light is giving him—

Of the abundant electric light that it is furnishing for his house and barn—

Of the electric power that it is providing to pump the water, operate the washing machine, the churn, the cream separator and the milking machine—the vacuum cleaner, electric iron and other similar conveniences—

Of the contentment and happiness that it has brought into his home on account of the improved living conditions.

And of the actual saving in time and labor that make it the best paying investment he has on the farm—It is little wonder that Delco-Light users are Satisfied Users.

Delco Light Company, Dayton, O.

A complete electric light and power plant for farms and country homes, self-cranking—air cooled—ball bearings—no belts—only one place to oil—thick plates—long-lived battery.

Valve-in-Head Motor
—Runs on Kerosene

Distributor

Barnett Ranch Lighting & Appliance Co., 1525 16th St., Denver, Colo.

DELCO-LIGHT

There's a Satisfied User near you

Western Farm Life

A Magazine for Western Farmers and Stockmen.

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AT NATIONAL WESTERN SHOW.

Feb·15·1920

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It has made more real friends, in a shorter space of time, than any other model ever produced by this Company. If you are at all familiar with Paige history, you will appreciate the significance of this statement.

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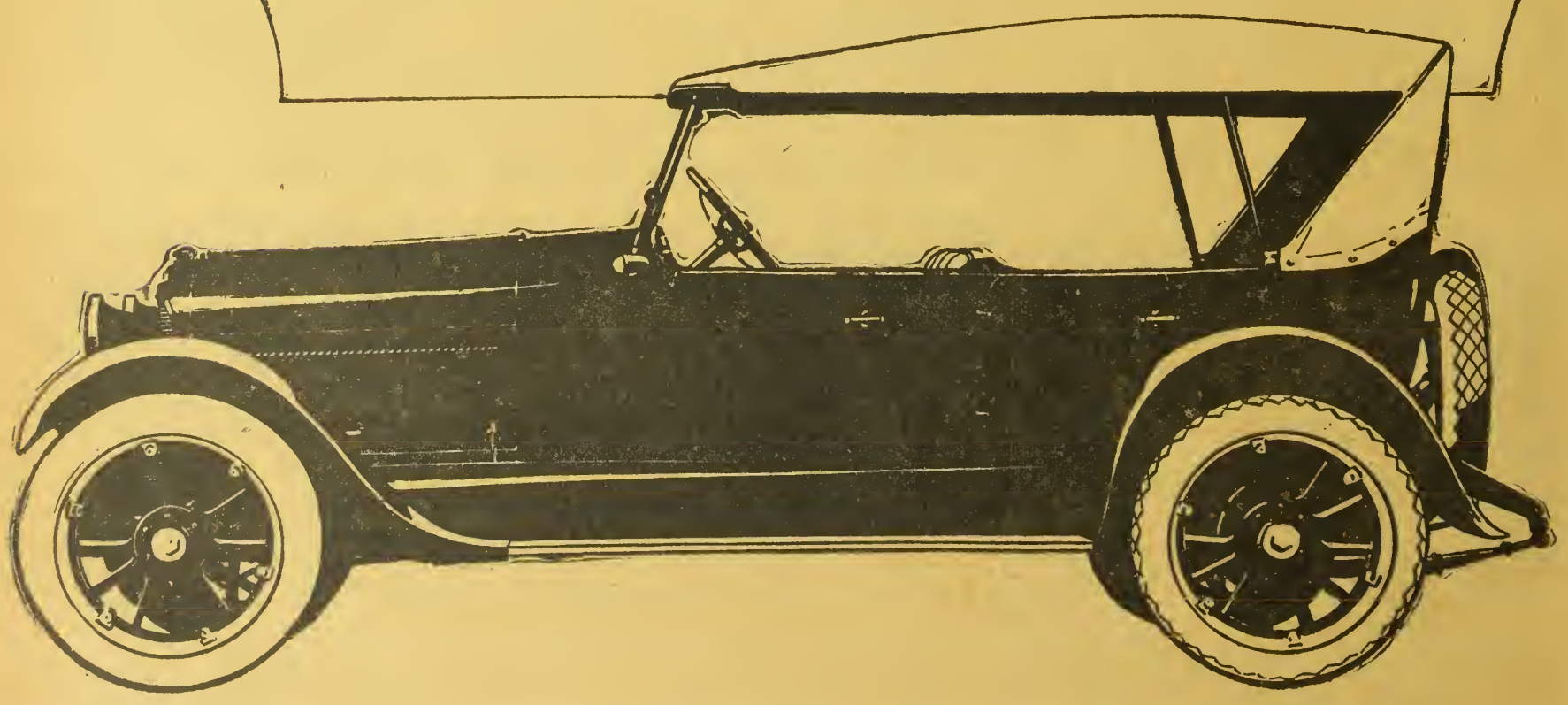

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WESTERN FARM LIFE

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Spuds Graded by Score Card at Western Show

EDUCATIONAL COMPETITION IS STARTED IN MOUNTAIN STATES.

T. S. PARSONS, Extension Agronomist, Wyoming University.

THE Western Stock Show has become a permanent establishment at Denver, but the Western Potato Show is a new departure, being held this year for the first time. There were many prophesies, however, that what the stock show is to the stock growers, the potato show will becme to the potato growers of the West. Education was the keynote of the whole exhibit and a visitor could not but go away with a much broader knowledge of potatoes than he had before. Potatoes were given scorecard grading for the first time at any mountain states exhibition.

The Western Potato Show opened at the Denver municipal auditorium on January 20 and continued three days. Seven of the western states were invited to participate in the show, but not all of them made complete exhibits. Colorado, of course, came in strong as she always does on anything that will advertise the state. Nebraska had a fine exhibit of seed potatoes, and Idaho and Wyoming made individual exhibits. New Mexico had a small exhibit of sweet potatoes.

The potato show was held under the auspices of the Denver Civic and Commercial Association. About $1,500 was paid in prizes and the interest created in better potato growing will be of great value to the growers of the mountain states. Selecting, grading and marketing were the principal phases of potato growing shown in the exhibits. The large floor of the auditorium was well filled with tables of market and seed potatoes, and tastefully arranged booths containing district, county and state exhibits were arranged around the walls of the room.

The Bureau of Markets exhibit occupied all of one end of the room and was highly instructive. The exhibit consisted of a specially constructed freight car loaded with potatoes as it should be to protect them from frost. Proper methods of sacking potatoes for shipment were also shown. Charts and pamphlets describing potato grades and giving instructions for shipping were given out to those interested. Nearby was an exhibit of potato machinery for planting, digging and grading. Improved potato growing requires improved machinery.

Demonstration of Potato Cooking.

The cooking of potatoes was demonstrated by young ladies from the domestic science department of the Colorado Agricultural College. The demonstration was well worth both seeing and eating. "There were potatoes boiled and potatoes baked; and potatoes made into bread and cake. With pretty girls to serve the same, and ask us all to come again." (Apologies to Walt Mason.) The young ladies showed that there was a good deal to be learned about cooking potatoes. Doughnuts containing 20 per cent potato flour were also served.

The boys' potato club exhibit and demonstrations were very instructive. The club exhibits took many prizes and the demonstrations given by the boys from various counties in the state were very practical. An actual field of growing potatoes was shown and the boys demonstrated planting, cultivation, treating of seed and other processes in potato production. The miniature potato field had a painted background of typical Colorado scenery and the whole exhibit was very striking. The boys were able to give even the men present some good pointers on potato growing.

The potato disease exhibit arranged by Dr. MacMillan of the U. S. potato experiment station at Greeley attracted much attention. The diseases attacking both vines and tubers were shown in a very striking manner. This exhibit will be carried on the potato exhibit car which will make the rounds of the potato growing sections of Colorado, Nebraska and Wyoming during the month of March. Some of the best of the seed and market exhibits at the Denver show will also be taken on the car. E. P. Sandsten of the Agricultural college will have charge of preparing the exhibit car, which insures it being a good one.

Lauck Was on Deck.

W. H. Lauck of El Paso county, "the original county agent," was on deck with a fine dry land seed potato exhibit which was easily first of the dry section exhibits. The Table Rock Farmers' Club was responsible for the fine exhibit. Lauck has a way of doing things and of getting things done. He is "up in the air" when in his county, but he gets down to bed-rock in all of his work. The Denver show demonstrated that good potatoes can be grown at high altitudes. The potatoes from Grace Park Ranch in Eagle county, raised at an altitude of 7,600 feet, were as fine as any potatoes at the show.

The San Luis valley, another high section, came in with a fine exhibit. We used to think that the San Luis valley was too high to raise anything, but times have changed. This section first came out as a pea growing section. Now it is making an equal reputation in potato growing. The Brown Beauty potatoes which formed a part of this exhibit were especially fine. Potato flour was also shown with the exhibit, this being made by a factory recently established at Monte Vista, Colo.

The Greeley section upheld its reputation in potato growing with a very fine exhibit in charge of County Agent Knapp. Market and seed potatoes of many varieties were shown and this section took its full share of premiums. Greeley has long been known as a great potato growing section and is doing its best to hold on to its well earned reputation. This section is especially fortunate in having the government potato experiment station located there and in having many good potato growers. Greeley is the home of E. R. Bliss, president of the Colorado Potato Growers' Association. Some of the Wyoming dry land seed potato growers are hoping to supply the Greeley growers with some of their seed another year. Wyoming is new in the potato game and is looking to Colorado as a good example to follow.

The state exhibits were not strong, Colorado and Nebraska being the only ones shown. Nebraska was given first place, having a large number of very fine seed potatoes on display. The booth was tastefully decorated in colors and was in charge of H. O. Werner, associate horticulturist of the Nebraska Experiment Station. The Colorado exhibit was in a well arranged booth, but consisted of only a few varieties of potatoes. Many other states will doubtless have exhibits another year, as the show will be under better headway by that time. E. R. Bennett, the potato specialist of Idaho, was there with some good individual potato exhibits and took a number of prizes back to his state.

An Instructive Exhibit.

One of the most instructive exhibits at the show was that of the Colorado Potato Improvement Committee. This exhibit occupied a space at one end of the room. Maps and diagrams showed what had been done and the future work contemplated by the committee. Bulletins and circulars describing better methods of grading and marketing potatoes were given out to interested visitors. Some very fine certified seed potatoes from Minnesota were also shown. Wisconsin and Minnesota have developed the potato growing industry to a high stage of perfection and it is here we look for the best seed potatoes, and their methods of certified seed production are being copied in the West.

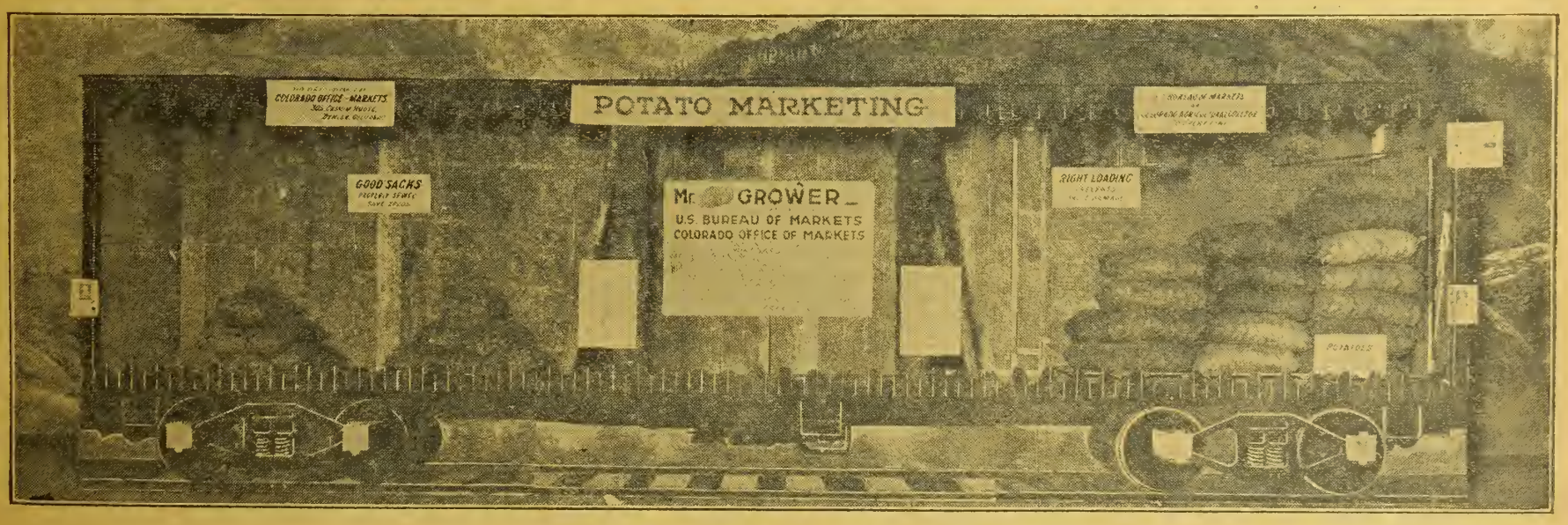
The Colorado Potato Improvement Committee is made up of the agricultural college horticultural department, the extension division, the Colorado office of the United States Bureau of Markets, the Colorado Potato Growers' Association, the agricultural press of Colorado, the Colorado Farm Bureau and the agricultural departments of the Colorado railroads. These forces make up a strong aggregation and should do much for the potato growers of Colorado. The production of certified seed potatoes is becoming more and more important, and surrounding states will doubtless organize along Colorado lines for the improvement of their work.

Among the most instructive and interesting parts of the potato show were the marketing conferences and other meetings held by the delegates from the various states. The delegates were guests of the agricultural and livestock bureau of the Denver Civic and Commercial association at a luncheon given in their rooms. At this meeting an address on marketing was given by C. E. Bassett of the North American Fruit Exchange. The address was full of good advice and was given the strictest attention by all present. The keynote of Mr. Bassett's address was good grading and co-operation.

Milward Judged the Show.

Other meetings were held at which addresses were given by Prof. J. G. Milward of the Wisconsin Potato Improvement Association, Dr. MacMillan and W. C. Edmundson of the Greeley potato experiment station, E. R. Bennett of Idaho and others. Mr. Milward judged the potatoes at the show. The Colorado Potato Growers' Association was reorganized and officers elected for the next year. Everyone at the show was impressed with the fact that Wisconsin and Minnesota are in the lead in potato growing, but there is no reason why the mountain states cannot compete successfully with them, espe-

(Turn to Page 33.)



COLORADO OFFICE OF MARKETS EXHIBIT AT WESTERN POTATO SHOW.
Points brought out by exhibit were: Eliminate unnecessary loss in potato marketing by proper loading and by proper sewing of sacks. Full sized freight car was used in pointing this lesson to growers and shippers.

Selecting a Producing Cow for the Dairy Farm

POINTS THAT DENOTE POWER TO CONVERT FEED INTO MILK.

H. A. LINDGREN.

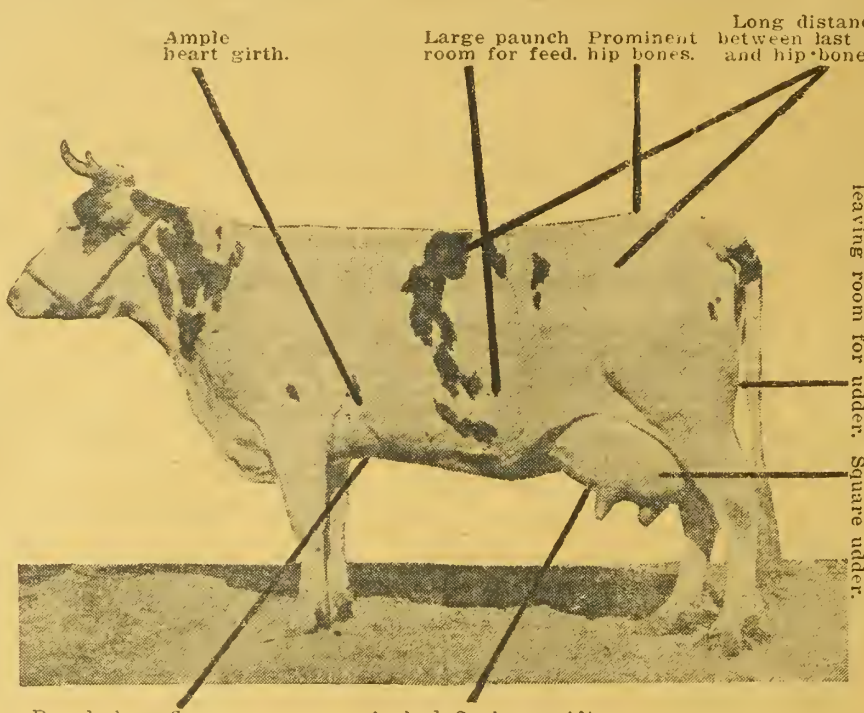
IN order to get the best results in the dairy industry, next to a good dairyman, the selection of the cow should be given most consideration. Where one can go into a cow testing community and select on records, that is the most desirable. However, this is rarely possible and the selection from type is the course necessary to pursue. It has been found beyond the question of a doubt that certain points in conformation are associated with production. Every dairy breed has its own characteristics and in order to bear all these in mind it is necessary to study them carefully. This is not always possible with the average farmer, for that reason he should bear in mind certain points that are distinctly dairy type rather than breed characteristics in the selection of the cow.

It is sometimes difficult to decide on the breed to select. Personal preference is usually the deciding factor. However, it is wise to bear in mind the community interest in settling this matter. This is especially valuable in the disposition of the surplus stock. Buyers of dairy cattle usually go to a community noted for some particular breed they are interested in. Aside from this, the matter of breeding is more easily handled where all are interested in one breed.

It is unquestionably true, that strong, vigorous animals are better able to perform the function for which they were intended, than those that are constitutionally weak. In looking at the cow see that she had a good heart girth with a broad chest floor and a strong, vigorous head, free from bullishness.

If a cow is to produce an abundance of milk she must have a large capacity which is shown by a roomy barrel, long and deep as viewed from the side. A good length from the last rib to the hip bone should be associated with this.

As viewed from the side, the cow should have a straight top line, carrying up well to the root of the tail. A sloping rump is undesirable from appearance if nothing else. A level rump and plenty of length between the hip bone and pin bones, is desirable and indicates a correspondingly roomy space for udder expansion.



Good Type of Dairy Cow.

As viewed from the rear she should show a roomy condition in the pelvic region, as this insures less difficulty at time of calving.

She should be well cut up between the hind legs with the udder extending well up in the rear. A thin thigh allows more room for udder expansion than one that shows a beefy tendency. As viewed from the side the flank should be well arched, which condition indicates room for the udder in that region.

The udder itself should be squarely built and pliable. The teats should be well placed on the four corners of the udder. Every quarter should show good development. A long pendulous udder is not desirable.

The milk veins should be large, well crooked and extend far forward, to the well, where the vein enters the abdominal wall. This indicates good circulation and is associated with production.

A soft pliable skin is an indication of good condition physically. There are other minor points of less importance that are often considered but those mentioned will be a guide to the selection of the right kind of cow.

We all like Western Farm Life fine and also Mr. Putnam's letter. We don't wish to miss even one copy of your good paper, as we all scramble to get it first.—Eldorado V. Martin, Grover, Colo.

Why Corn Flourishes in Rocky Mountain Region

ANALYSIS OF CAUSE FOR THE RAPID INCREASE IN ACREAGE.

ALVIN T. STEINEL, in The Agricultural Review.

WHAT is the cause of the astonishing development in corn production in Colorado, and adjacent mountain states? Has the corn plant suddenly adapted itself to climatic conditions hitherto considered too severe for successful culture of that cereal? Has the climate changed? Or, must we revise our estimates of the true nature of corn and accept it as the most adaptable feed and forage crop of the semi-arid west, thus discarding the grain sorghums?

These questions crowd the investigator who inquires into reasons that lie behind the remarkable corn statistics that are coming from the Rocky Mountain region. Answers are quite apparent to farmers familiar with this region and its climate. First, let it be said that the sudden rise of corn is due to silo building; second, that it does not crowd out a single acre of grain sorghum; third, the climate has not changed, and fourth, the corn plant is not undergoing any remarkable transformation. Indeed, it is only coming back to its native heath when it finds a suitable environment in the mountain country.

Now, after the last statement I think I see a thousand corn experts raise their hands in holy horror! The corn a cool climate plant! Never! Corn needs hot nights. If it does, we have them in Colorado. Personally I do not put it that way. Corn needs a warm soil, and that we have during our growing season, no matter what the temperature of the breezes that sweep over our Colorado corn fields after sundown.

We said something about cool night breezes. In that statement, we have the secret of why corn flourishes in Colorado, while it may dry out and fire a hundred miles east of the Colorado line. That too, is the reason we have a distinct corn belt—if we wish to so call it, in the states that are under the influence of our mountain climate.

The reason we have been slow to learn that corn likes our climate lies in a wrong conception of climatic influences. We had conceived of the ideal corn growing territory of the United States as lying in the vast Mississippi basin, petering out gradually northward into Minnesota, the Dakotas and Wisconsin, eastward toward the Alleghenys, and westward to the region of the one hundredth meridian. At about that point, we said, corn growing becomes too precarious for profit because of drouth and hot winds in western Kansas and Nebraska, and because it is too cool as we approach the mountains and gain an elevation of 4,000 feet and upward.

For the hot wind territory we recommended Kafir, milo, feterita and allied grain sorghums, and we hoped by developing such hardy strains of the same family as Kao Liang, which has its habitat in Manchuria, to obtain a frost and cool weather resistant grain and forage crop for our mountain states.

But what has happened? Farmers have upset the plans of experimenters and persisted, against expert advice, in growing corn under supposedly adverse conditions. Result? In the strip of plains country where, especially on upland, a hot, dry summer has usually been disastrous to corn, the grain sorghums are surviving and fitting in admirably, answering every purpose of corn for feeding or forage, grain or ensilage, but in the higher and cooler country, beginning approximately at the Colorado line, corn has demonstrated its superiority over all other feed crops, both under dry farming and irrigation.

In the course of as brief an article as this on such a large subject it is impossible to more than mention the factors that are responsibile for this change in our cropping program. Let the mind go back, however, for a brief glimpse of ancient American history. Corn was developed on this hemisphere, probably on the southern continent by the ancient Peruvians. Springing from a tropical parent, exact genus unknown, corn in its finished, domesticated state was grown at varying elevations in the Andes mountains in a cool climate. As far as our present knowledge goes, thanks to archeological research, the highest civilization of the Peruvians, who in cultural development were at least the equal and have often been compared with the Egyptians under the Twelfth dynasty—was attained by populations that inhabited arid regions at high elevations. In a word, corn was grown many centuries ago under the magnificent terrace farming system of a race that ante-dated the Incas. It is grown today at 6,000 to 11,000 feet by the descendants of these ancients. While it is commonly believed that corn was originally developed in the tropics there is nothing of record to confirm this. The best evidence we have that it reached its greatest development under temperate and arid conditions comes to us in the report of the Peruvian Expedition of 1915 of the National Geographical Society and Yale University. A study of that report should convince us that even though enfeebled by generations of adaptation to the ideal growing conditions of the North American corn belt, the plant soon regains the hardiness bred by its Andean environment when grown in Colorado or other mountain states at 5,000 to 7,000 feet.

We must bear in mind that proximity to the equator in the Andes of Peru merely modifies the climate on the heights and that some of these plateaus often have a sub-arctic or Alpine climate as severe as that of the North American Rockies at somewhat lower altitudes. Corn at 7,000 feet in the Rocky Mountains undoubtedly meets no severer climatic conditions than corn at 10,000 to 11,000 feet in the Andes in the vicinity of the equator. The conditions are approximately comparable.

I have followed the story of corn in Colorado for 18 years. It was here when I came, but I heard its failure predicted; saw it fail in dry years; saw it given up in many sections for the grain sorghums and have observed with some astonishment its return as the king crop for the silo. Lest someone say, "Oh, the silo, that is different," let me hasten to add that we want our corn ripe for silage in Colorado and it is ripening, even where our frost free period is only 100 to 125 days.

There is another stubborn fact that we have been overlooking and it affects not only corn but many other crops—the frost free period at 5,000 feet and at 500 feet does not mean the same thing to plant life. A temperature that might kill corn at sea level will not curl a leaf at 5,000 feet, because of the lack of humidity, so the growing process in the fall is not always ended when the mercury slides down to the mark theoretically indicating a killing frost.

The water requirements of corn are exacting, but pound for pound not more so than for many other plants profitably grown in the semi-arid region. The plant wants water at just the right time to do its best, but if we follow careful conservation practice we keep it growing on stored moisture, keep it looking green and cheerful as any live thing—plant, man or animal does in a sunny but cool summer climate. Under irrigation corn is an easy crop to grow and one of our most profitable. One or two irrigations will make the crop, if we have a normal summer precipitation and plant on well prepared, rich ground. The irrigator in Colorado is getting 15 to 18 tons of rich corn ensilage per acre and selling it to feeders at $10 per ton—often more. Who would not grow corn at such a rate of return?

I saw corn during the past summer in the Arkansas valley of Colorado at 4,000 feet under irrigation that made 80 bushels per acre; I have authentic reports from the Grand valley, 4,400 feet, of 87 bushels; I saw corn in the San Luis valley at 7,700 feet that ripened; saw field after field at 5,000 feet in Boulder county that made 50 to 60 bushels; saw thousands of acres on dry lands making 25 to 40 bushels of as good grain and forage as one ordinarily sees in northern Iowa or Southern Minnesota. We have built more than one thousand silos in the state within the last twelve months. What other evidence could be offered of the fact that corn does make a profitable crop under the climatic conditions prevailing in the Rocky Mountain region?

A little statistical information will be of interest. In 1919 Colorado's corn acreage was 671,000; in 1918, 610,000 acres. The latter figure is double the acreage of the last census year, 1909. Our average yield in 1919 was 16.7 bushels, which is low compared to the corn belt, but we must remember that the bulk of the crop is grown on non-irrigated land. Our average on irrigated land is almost double the United States average. On the dry lands corn is an established crop, a paying crop, a necessity. The dry land farmer must have either corn or the grain sorghums to succeed, because livestock is essential to his success. On our irrigated lands farmers have but lately discovered the value of corn. Figure it yourself—yields from 50 to 60 bushels of grain, 15 to 18 tons of forage, with silage at an open market value of $10 a ton for the cattle feeder. An intertilled crop, resulting in meat and manure, clean land, good preparation for a succeeding crop—what could equal it in the rotation?

How Curtis & Sons Make Farm Dairying Pay

HIGH PRODUCING COWS ARE RESPONSIBLE FOR THEIR SUCCESS.

H. A. LINDGREN.

Mr. and Mrs. C. W. Curtis and three of their six sons.

PRACTICAL dairying is bound to win out where it is consistently carried on in a business like way. Mr. C. W. Curtis, "Oaklands Ranch" of Sedalia, Colorado, is one of the progressive dairymen of Douglas county. His is a most interesting story and goes to show what is possible if the proper attention is given to the business.

The Curtis property of 2000 acres is situated 4 miles from Sedalia. West Plum creek runs through the farm and furnishes water for irrigation. Three hundred acres is being cultivated. Both dry farming and irrigation farming methods are employed. The entire farm is used for dairying. Mr. Curtis has recently purchased 3,000 acres not far away for the purpose of raising stock cattle. One valuable point in connection with this enterprise is that Mr. Curtis has six grown sons who are partners in the business and the unusual is true that they are deeply interested in the work of the farm. This is because they have been given a part in it. All of the boys have had training at the Colorado Agricultural College which gives them an advantage in their work.

The policy on the farm is to market everything raised through the livestock. This enables them to realize all there is in the business in a direct way. Two concrete silos are a part of the equipment. Alfalfa hay, oats, wheat, and corn constitute the crops grown. A large part of the land not cultivated affords pasture for the stock.

Mr. Curtis has owned the 2,000-acre farm for more than 30 years. During all of that time, dairying has been the major industry carried on. The first 20 years a common herd of cows was kept. Twelve years ago he started with a registered Holstein bull and 3 cows, which was the nucleus for the present purebred herd. He has graded up his animals until now they show the result of the careful selection of bulls.

In 1907 the bull Neilson Toga No. 41262 was purchased from Provost & Haver of Pueblo. This was the first registered bull. In 1909, they purchased Sir Gem Pietertje Johanna No. 58265. He was sired by Gem Pietertje Paul De Kol by Gem Pietertje and on the dam's side, traced to Johanna Rue 2nd's Paul De Kol. He was purchased from W. M. Cox, Whitewater, Wisconsin. The next sire was Western Anna Thersa Lad 96819 purchased from Hall Bros., of Denver. This bull traced to Colanthas 4th Johanna. He proved an excellent sire and is the sire of a number of the best cows in the herd today. The next bull purchased was Nakol Sir Johanna No. 119537 from Geo. E. Stephenson of Waverly, Pa. This bull was sired by Pietertje Ormsby Segis Burke.

In 1916 King Piebe Pride Pontiac 182955, was purchased from W. G. Marshall, Whitewater, Wisconsin. This bull was a grandson of King of the Pontiacs, one of the truly great bulls of the breed. In 1918, Oakes Home Farm Esprit was added to the herd.

From these bulls a herd of outstanding conformation and production has been developed, as shown by the fact that with the cows freshening at all times of the year the average production of the present milking herd of 31 cows is over 32 pounds each daily. The whole milk is sold to the creamery at Sedalia for which they are getting 80 cents per pound butterfat.

The feed used at present is corn silage, alfalfa hay, and a grain ration of oats, ground wheat and oil meal. The cows are in the pink of condition. This herd was for two years in the Douglas County Cow Testing association or until the association was discontinued, so that records can be seen on most of the cows.

The sons are operating the farm and have decided on disposing of their grade herd to make room for the purebreds of which they now have 42 females. On March 2nd they will sell close to 70 head of excellent grade and purebred animals. This will be an opportunity for those wanting high producing cows, to get something that is bred right with plenty of size and excellent conformation.

There is no evidence of discontent on the part of the firm but an interest in the business which with the proper attention to the detail accounts for the success they are having. They take pride in the work and are always glad to have visitors come to see what they are doing.

THE CURTIS HERD OF HOLSTEINS ON CREEK BOTTOM PASTURE.

A Model Dry Land Farm and a Suggestive Rotation

BASED ON ACTUAL PRACTICE ON EASTERN COLORADO FARMS.

Sound advice for the dry land farmer was to be gained from a very attractive exhibit prepared by Prof. O. S. Rayner of the Farm Management Department of Colorado Agricultural College at the National Western Stock show.

The lesson was presented in the form of a 320-acre model farm and it was based on what is being done by some successful farmers in Lincoln and Kit Carson counties. It did not seem to impose upon the beholder the advice or suggestions of theorists, but to present in clear and graphic fashion a composite picture of methods that are bringing results on eastern Colorado farms.

Growing plants—wheat, rye, barley and alfalfa—gave a vivid hue to the little farm with its neatly modeled miniature house, barn, silo, and other buildings, complete in every minute detail. On either side of the house were patches of alfalfa, just through the ground and neatly laid out fields of small grain with the plants up two or three inches, one field lying fallow, and a good sized area of native pasture reserved for the stock.

These details were the attractive part of the exhibit; the things that caught attention. On the wall as a background for the farm appeared charts that told the story of a six-year rotation set forth in the accompanying table.

The farm on which this rotation applies has four acres reserved for buildings, flanked on two sides by the alfalfa, each of the fields comprising eight acres. Directly back of the buildings lay the 100 acres of native buffalo grass pasture, the balance of the farm, approximately 200 acres, being in crop or fallow, the fields being in 33 acre parcels. The livestock carried demands a silo capacity of 200 tons, preferably held in four silos, the cropping program providing for ample forage to fill. The livestock to be kept comprises five work horses, 15 milk cows, 7 two-year-old heifers and 7 yearlings, 14 calves, 1 bull, 3 sows, 24 pigs and 100 hens. This is a program based on livestock with wheat and cream as the principal cash crops.

A chart set forth the advantages of the rotation as follows:

1. Small grain planted on cultivated ground.

2. Feed crops constitute nearly two-thirds of the cultivated area.

3. Two grain feed crops—corn and barley. If one fails the other may succeed.

4. Cash crop, wheat, constitutes one-third of cultivated area. This is a profitable money crop in a good year. In a bad year it becomes a reserve crop and is used for feed to avoid disposing of valuable livestock.

5. Summer tillage on one-sixth of the cultivated area, this field to be manured the previous fall and manure has about ten months to decompose and become a part of the soil before another crop is planted.

6. Each field is covered with barnyard manure once in six years and also receives green manure when plowed for summer tillage.

7. The fall rye furnishes early spring pasture until plowed under for green manure and summer tillage.

8. Fields arranged in this manner allow for a minimum amount of fencing.

9. All small grain crops in one field and all cultivated ground in another field.

10. Silage capacity to save surplus feed grown in years better than average.

11. Six sources of income—wheat, cream, cattle, hogs, poultry, eggs; when one fails some of the others may succeed.

12. This farm can be operated by four horses, a tractor that will pull a three-bottom plow and one extra man during the cropping season.

Some disadvantages of this system:

1. Considerable capital is necessary and a man with small capital will either have to rent or organize his farm on a smaller basis and expand as his capital increases.

2. Unless a man has family labor he must expect to hire some extra help, if he is to do the work satisfactorily. However, this is usually more of an advantage than a disadvantage, as two-man farms are nearly always more profitable than one-man farms.

The charts did not show it, but Prof. Rayner's figure on the normal gross income which such a farm should produce annually was $3,297. Cream sales would represent $1,000 of this total.

The model farm created much discussion. What appealed to the farmers from the plains was the fact that it was based on sound practice and that the program outlined meant maintenance of fertility.

	A	B	C
1920	Corn. Wheat drilled between rows	Wheat drilled to fall rye pastured; and plowed in June.	Rye and fallow. Drilled to fall wheat.
1921	Wheat	Rye and fallow	Wheat.
1922	Rye and fallow	Wheat	Cane.
1923	Wheat	Cane	Barley.
1924	Cane	Barley	Corn.
1925	Barley	Corn	Wheat.

	D	E	F
1920	Wheat plowed and planted to cane	Cane. Listed in fall, drilled to barley in spring.	Barley, plowed and planted to corn.
1921	Cane	Barley	Corn.
1922	Barley	Corn	Wheat.
1923	Corn	Wheat	Rye and fallow.
1924	Wheat	Rye and fallow	Wheat.
1925	Rye and fallow	Wheat	Cane.

The Highway Problem.

When we consider the size of the State of Colorado, the relatively small amount of taxable property, the growing competition of western states for the tourists' travel which is coming to be materially influenced by the condition of state highways, we begin to comprehend the importance of Colorado's highway problem. It does not lend encouragement to the situation to learn that a concrete road project in Massachusetts recently reached an estimated cost of $127,864 per mile, that a bituminous brick or concrete road in Ohio will average $67,716 per mile, and a concrete or brick road in Pennsylvania will average $64,015 per mile. This road problem is growing more serious for Colorado each year and it now calls for the combined wisdom of all the people to solve it.—Boulder County Farm Bureau Bulletin.

Test Every Ear of Corn if You Want a Stand

VARIOUS METHODS OF TESTING FOR GERMINATION DESCRIBED.

J. C. HACKELMAN.

THERE are several germinators on the market, most of which are satfactory and, when used with reasonable care, give excellent results. These testers are all constructed on the principle of supplying a limited amount of moisture in a chamber, the temperature of which is kept more or less uniform.

These commercial testers vary in complexity all the way from the simple box-like chamber, heated from below with a lamp, to the much more elaborate one which is heated by electricity and in which the temperature is very accurately maintained by a self-regulating thermometer or rheostat.

Some farmers are using old incubators quite satisfactorily. The incubators can be used with sand or sawdust or with moistened cloths. In the former case the trays are filled with sand or sawdust and the kernels imbedded. In the latter case cloths are spread in the tray, the kernels placed on a cloth and other cloths spread over them. In both cases, of course, moisture must be supplied.

Still another type of germinator which is being used is the grain sprouter employed by poultrymen for preparing trays of green feed for chickens. These sprouters work quite satisfactorily where the temperature is mild enough, or where the temperature in the sprouter can be controlled. Where the sprouter is employed, sawdust is frequently used to fill the trays. A cloth is spread over this and is marked off in squares. Another cloth covers the kernels, and in case more than one layer is tested, another cloth which is marked off in squares is spread over this. This process may continue until three or four depths are tested in each tray of the tester. The last layer should be covered with a cloth, and then, a sawdust pad, old sacks, or carpet should be spread over this to hold the moisture. The cover should be moistened down daily with warm water.

The type of germinator to use is of little consequence so long as the conditions which favor germination are provided. The essential precaution is to supply enough moisture and warmth to cause the seed to sprout. These conditions must be provided.

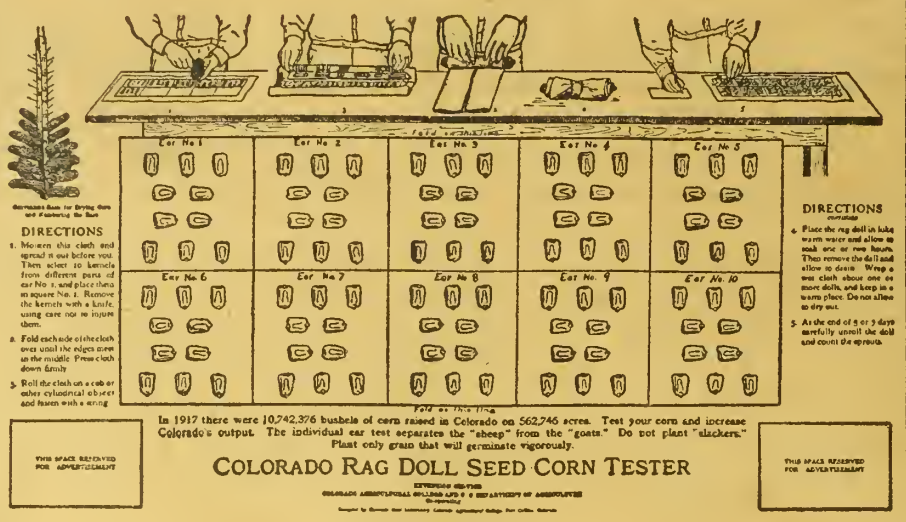
Home Made Testers.

The kinds of germinators in which the farmer is naturally most interested are those which are simple, quickly and easily constructed at home. There are several such germinators and when carefully handled will give almost equally satisfactory results. The most common ones are: Dinner plate germinator, sand box germinator, sawdust and cloth box germinator, and the rag doll germinator.

Dinner plate tester.—The first or dinner plate germinator is perhaps the simplest of all. This tester is not very valuable where individual ear tests of corn are to be made, especially if there are many ears; but where bulk tests from shelled corn, or where a "shotgun" test from a large number of ears is to be made, this method is fairly satisfactory. A large piece of blotting paper, or several thicknesses of cloth, should be spread out in a plate. This cloth should be saturated with water, the kernels of corn placed on this cloth, and then the remainder of the cloth folded back over the kernels. This upper cloth should be moistened thoroughly, but not sufficiently to cause water to stand in the lower plate. A second plate should be inverted over the first, containing the blotter or cloth and the corn, and then the germinator set aside. This should be observed daily and if it begins to dry, more water should be sprinkled over the cloth or blotter.

Sand box germinator.—The second or sand box germinator consists of a box about three inches deep and of any convenient size, filled with sand, and then marked iff with strings stretched across the top of the box each way, making 2½ to 3 inch squares. Then by lettering the squares down the left hand edge of the box A, B, C, etc., one can locate a given square, as for example, C—6 immediately. By labeling the ears as the grains are selected for the test, the good and bad ears can be distinguished when the test has been made.

This type of germinator has a few objections, which in many cases, perhaps make its use almost prohibitive. First, sand is sometimes not available; second, such a box is heavy and unwieldy; third, after the test is made the sand should be removed and re-sifted to get it in best shape for the next test, and fourth, it is objectionable because of the dirt, especially when it is used in the house.



Sawdust box germinator.—The third, the sawdust box germinator, may be made similar to the sand box, except that here the sawdust is simply used to retain the moisture and the corn is placed on a cloth marked in squares which have been numbered. This cloth may be marked with a pencil. The next step is to spread over the kernels a thin cloth, thin pad filled with sawdust or a few thicknesses of cloth. A too thick pad or too heavy a covering of cloth must be avoided. Two thicknesses of flannel or three or four thicknesses of muslin will be ample. This should then be kept moist and, like the sand box, should be in moderately warm but not hot, room.

Rag doll tester.—The rag doll tester, which is perhaps the least expensive and about as satisfactory as any, can be made of a piece of muslin 18 inches wide and of any desired length, depending on the number of ears to be tested. If the tester is to accommodate twenty ears of corn, a piece of cloth 18 inches wide and 4 feet long will be ample.

The cloth should be marked off in 2½ or 3 inch squares. These squares may be smaller or larger as occasion demands, but in general the 3 inch square is large enough to accommodate as many kernels as will be used—usually not more than ten. At least 6 inches of cloth should be allowed on each end of the tester beyond the squares.

After the kernels have been removed from the ear and placed in the numbered squares, the sides of the cloth may be folded over and the "doll" may then be rolled up without fear of molesting the kerenels. The cloth which was left at either end permits starting and finishing the roll without losing the kernels.

The rag doll should be thoroughly moistened either by sprinkling with warm water or by immersing in a bucket of warm (not hot) water for two or three hours. After the cloth has been thoroughly saturated it can be put away in a warm place. The rag doll must not be allowed to dry, as moisture is essential. A good method of maintaining the moisture in the rag doll tester is to put it in a shoe box, or small wooden box, and cover it with moist sawdust. As with other testers, the sprouting kernels must not become chilled, as this will not only retard, but may actually prevent, the germination of the grain.

Maintaining Temperature.

Where sand or sawdust box or rag doll is being used in a room or building where there is danger of chilling during the night, some effort should be made to keep the temperature up and prevent serious injury of the test. Where it is possible to watch the tester and make sure no trouble from fire is encountered, a lantern burning very low can be utilized to keep the tester warm. By inverting a large wood box over the germinator and the lantern, a temperature may be maintained which will not chill the seedlings. No lantern should be used unless it could be examined at frequent intervals during the evening and thereby run no risk from fire. If the lantern is used, the inverted box should be set up on bricks or blocks to permit free circulation of air.

Where germinators are used in school houses, or other buildings where the heat is not maintained during the night and where no one has opportunity to examine it frequently during the late afternoon and evening, a hot plate or some sort should be used. Bricks or rocks which have been heated can be wrapped in cloths and then placed under the box to provide a warmer temperature than could be maintained otherwise. The hot bricks or stones should not come in direct contact with the germinator and thus cook the grain.

Interpreting the Test.

The kernels, if given favorable conditions for growth, should begin to show sprouts freely on the third day. This is too early to estimate accurately the vitality of the seed, and the final reading should not be made before the sixth or seventh day. This will usually allow the first stems or sprouts to become an inch or more long. The reading of a test is the most painstaking part of the whole operation, if it is done accurately. Kernels will be found in all stages of germination and the efficiency of the test depends in no small degree upon the accuracy of this reading.

Where six kernels have been taken from an ear, the test should show six healthy sprouts of equal stockiness and vigor. If one kernel fails to grow, the ear should not be used as first class seed, but should be placed in the reserve for use in case it is impossible to obtain better seed. If more than one kernel fails to produce a good healthy sprout, this ear should be permanently discarded as unfit for seed.

There will be cases where all six kernels finally succeed in producing sprouts but when they delay sprouting, the ear should be discarded. This sort of ear is worse than a dead one, since the dead one can be recognized readily, but the slow, weakly germinating ear, if planted, would, under the most favorable conditions, produce a poor, weak stalk. Another dangerous sort of ear to use would be the one which has six sprouts, only four of which were vigorous. Such an ear should be discarded because these weak kernels would probably fail to sprout in the soil.

In selecting ears for planting as the result of a germination test, only those which show six perfect sprouts, strong, healthy, and vigorous, should be chosen. Weak and dead kernels mean a poor stand and a reduced yield.

Test Every Ear.

Every ear of corn should be tested for germination before planting. This advice is good every year, but especially so this year, because there is a shortage of good seed corn and the tempetation will be strong to plant anything that looks good. Drouth in some sections cut down the yield and the quality. Then too, there will probably be more corn planted this spring than ever before, in Colorado and neighboring states; because of the increased interst in the crop for silage, and because of the sucessful tests made in some of the mountain sections that heretofore have been considered too high for corn. The accompanying aricle describes various methods of testing seed corn. Colorado and Idaho have seed laws that protect the farmer against poor seed put out by dealers, but most corn growers save their own seed, and for these it is important to test every ear, if they expect to get anything like a full stand.

Colorado Corn Club Boys Giving Demonstration in Testing Seed at the National Western Stock Show.

Making Sure of Binder Twine.

The United States has long depended for much of its supply of binder twine on henequen from Yucatan. The uncertainty of the supply during the past several years has caused serious anxiety lest there should not be enough binder twine to harvest the increasing crops of grain in this country, and the United States Department of Agriculture has been making diligent efforts to find new sources of supply or new regions where binder-twine fibers may be produced. The chief of the Bureau of Plant Industry reports encouraging results.

The conditions in limited areas, extreme southern Florida and on the larger keys, are regarded as suitable for the production of sisal and henequen fibers, provided the cost of land and of labor is not too high to permit successful competition. Henequen has been cultivated successfully for several years in Cuba and the plantations are being increased, but thus far they produce scarcely enough fiber to supply the cordage mills on the island. Conditions are regarded as favorable for the production of binder twine fibers in limited areas in Haiti and over a much larger area in southern Santo Domingo.

Experimental plantings in Porto Rico have resulted in the establishment of a commercial plantation near Yauco and trial plantings near Quebradallas and on Mona Island have given promising growth. In the Virgin Islands excellent conditions for the cultivation of sisal have been found on St. Croix. In the Philippines the introduction of modern fiber-cleaning machines has resulted in increased plantings of sisal and private capital has bought and installed machines to develop the industry in a larger scale.

Poultry and Eggs for Sale.

In the "Farmers and Stockmens Exchange" columns in this issue of Western Farm Life will be found advertised poultry stock and eggs of almost every strain and variety. This department is well to the back of the magazine. Look it up. You will find what you want at the right price.

The Previous Chapters.

Lounging in a cafe in a drowsy West Indian town a health seeking tourist finds himself protected from the wrath of a drunken sailor by an adventurer in white duck who calls the tourist by name: "I might as well be honest with you. The cards couldnt have fallen more to my liking. For I wanted a chance to talk with you—Scott!

"That's my name, but you have the advantage of me." This from Robert Harden Scott. the tourist. Explanations, comparison of notes and the two are soon on a footing of mutual confidence. the adventurer proving to be Grayson, a forgotten college mate, who has knocked about the world in search of excitement and who has before him the prospect of the greatest adventure of his life—if his new-found friend Scott will advance the capital needed for an expedition of exploration to the wreck of the Zenobia, and will agree to accompany him, to share in the search for a mysterious cargo.

The Zenobia, Grayson explains, was a three-masted yacht; a big boat, close to four hundred tons, seaworthy, owned by a man named Perham, who made long cruises in her, practically lived aboard, solitary chap, not given to taking company along. A year ago he was up the Mediterranean; called at Egyptian ports. Then he returned to American waters showing up at Havana; then sailed supposedly for New York, but never got there. Wrecked? Yes, the Zenobia was wrecked, but in waters where no northbound boat ought to be. There Grayson, taking passage in a little schooner whose skipper was his friend, found the wreck, two dead men aboard and another dying from a broken head.

Little beyond details concerning ownership of the Zenobia was learned from the dying man, who soon shuffled off, but Grayson and the skipper made a partial exploration and found—Egyptian mummies in the hold! The skipper could not hold his crew of superstitious negroes after the discovery of the mysterious cargo and Grayson was obliged to return to civilization, to look for a partner. His fortunate meeting with Scott solved the problem. They journey to Witch's Island and begin exploration of the wreck and then things happen.

CHAPTER VII.
The Woman Intervenes.

The story of the next two days is briefly told—toil, unrelenting, difficult, disappointing in results. Progress was made, to be sure, but it was by inches, so to speak, instead of the feet and yards we had hoped for.

To begin with, Grayson had the diver's trade to learn. In the next place, he worked at a disadvantage, due in part to lack of light but even more to the mass of wreckage left by the explosion. Lines parted under the strain of the extemporized winch set up beside the hatch—it was really a cleverly contrived machine, but developed malevolent ability to go wrong at critical times; hooks slipped; there was trouble now and again with the air, though here the skipper could hardly be charged with the fault. Grayson had laughed at my notion that he had anything to fear from the little man, and had gone below as tranquilly as if he were not putting his life at the mercy of one who well might be cherishing an ugly grudge.

"Oh, he's a sailor, and used to taking what comes to a sailor," he said, carelessly. "Very likely he had a grouch that night, but he slept it off. Don't bother your head about trifles, Scott. If your're seeking real worries, I'll try to find some full-sized ones for you."

As a matter of fact, a pessimist might have hit upon abundant food for gloomy thought. The raffle below was like a puzzle, in dealing with which a false move merely increased the complexity of the problem. Sometimes a timber, dragged out of the jam at cost of much effort, seemed to shoot another bolt in the door we were trying to open. You will remember, too, that working as we were with crude apparatus, the output must seem sadly disproportionate to the labor involved; which in my case, at least, was rendered doubly wearing and fatiguing by the tropic sun. Jose and the skipper bore it as salamanders are reputed to bear fire, but I had no such immunity.

Picture, then, the wreck late on an afternoon, the sun close to the horizon, the shadows broadening where they were cast by the broken line of what had been the port rail, the half-submerged deck littered with the clutter dragged from the hold, the skipper overhauling the air-pump, Jose coiling the hoisting line, and Grayson wearidly removing his diver's dress. Despite the sunshine it was not a cheering scene aboard the Zenobia, and willingly enough my glance strayed overside and across the shining blue water, rippling in the light, steady breeze and catching the slanting sunbeams in a thousand glittering points. Like a smiling lake it ran to the sheltering line of the island to windward, but midway was something which made me cry out in amazement.

A boat—a white yawl—was there, in the very middle of the picture. It was moving slowly, for there was but one oarsman; and it was headed straight for the Zenobia. And in the stern was a second figure, slighter, erect, graceful; the figure of a girl.

"Where the devil are they from" Grayson was beside me. "A boat like that can't make this port as a finish to an afternoon's row."

The skipper had a sailor's keen vision. "Over the island, sah!" he sang out. "Schooner's main tops'l, sah."

By his help we made it out, a triangular bit of white showing above the trees.

"That's it—somebody's put them over and gone about his business." There was a furrow in Grayson's brow. "That'll have been a queer trick, though—for any island drogher. She'd have been all for a squint at us, and what we were about. Her people must have sighted the Pera through one passage or the other. And a woman along—oh, Lord!"

For a moment all of us silently watched the approaching boat.

"Marooning?" I queried. "I've heard of such things being done. Only—only——"

"Aye, they've been done times enough in these waters," Grayson growled, "but not this way. There's luggage stowed fore and aft—trust marooners to take such trouble with their marooned. And by all the gods of war and peace, a woman!"

"And a young woman, at that"

"Right you are! There's no burden of years on those shoulders."

"Or wisdom of years in that head?"

"Else it wouldn't be here," he agreed. "It's no place for——" There he broke off, and whistled softly. "Scott, tell me, you get no hint? There's no stirring of memory, no——"

Again he paused. "What? With a veil and a Panama hat drawn down like an awning," I objected. "In that disguise I wouldn't know my own sister, if I had one."

"The point's well taken," said he, and fell silent.

The boat came on slowly, holding its course till it was within easy hail. Then its bow swerved a trifle. As it came broadside on to us, Grayson spoke.

"Boxes forward—stores, likely—and suit cases aft. No; it's no involuntary landing."

"Why don't you hail 'em" I suggested. He put out his hand to his mouth. "Boat ahoy!" he shouted.

There was no response, but the boatman ceased rowing. The woman bent toward him. Evidently they were taking counsel.

"Boat ahoy!" Grayson bellowed again.

The oarsman turned his head, and surveyed us very deliberately. And now, I confess, I felt a stirring of memory, but a faint stirring, vague and uncertain. It was as if I half recalled seeing the man or somebody very like him, somewhere, at some time—recent or remote I could not have told for the life of me. But as I racked my brains for fresh hint of time or place, the woman spoke and he bent to his oars, rowing the same slow, steady stroke as before. His motions, it was to be noted, were stiff, with a manner of more knowledge of the business in hand than recent practice in it.

"Umph, social pair!" I commented, but Grayson made no reply.

The boat rounded our bow at a respectful distance, then steered for the beach of the largest island, on which, as you know, we had set up our housekeeping. It had drawn close in before Grayson arrived at a decision.

"We'll land, too," he declared. "Those people may not care to talk to us, but we've got to talk to them."

"And we'll make it plain talk, eh?" said I.

"So far as in us lies," quoth he drily.

With the skipper and Jose at the oars, our yawl made a swift passage from the wreck, but the newcomers were wasting no time. The white boat was beached, the passenger ashore, and the oarsman was landing her freight, when our bow touched the sand perhaps fifty yards from her. Grayson waded to dry land, and I was close at his heels.

The strange man paused in his labors, and advanced to join his companion, who had strolled a little way toward the fringe of trees. She waited for him to come up, turning to face us with no evidence of any feeling but complete composure. She had freed herself of the veil, but the drooping brim of her hat still half hid her features. That she was young there could be no doubt; there was youth in every line of her figure. As to her station in life a more cunning eye than mine was needed to gain hint from her attire for she was dressed very simply in jacket and short skirt of some khaki-like material, with leggings of the same shade to complete the costume.

As tranquilly as if she were on her own doorstep, instead of fresh landed on a lonely isle of the Caribbean, she awaited our coming, her ally taking stand at her elbow. Jose and the skipper, halting by our boat, curiously watched the scene, while Grayson and I plodded along the sand until we were within a dozen feet of the girl and her comrade. Then we pulled up. I had expected my partner to open the conversation, but he stood silent. Out of the corner of an eye I saw that he was gazing fixedly at the girl, who, in turn, was regarding him. Yet ours was a question to be settled without delay.

"Madam," I said, "what are you doing here?"

It was a blunt query, and, it may be, gruffly put. But it had its effect. She raised her head proudly, and for the first time I had a clear view of her face. There was no need now to tax reluctant memory. I had seen her but once before, but the picture she had then made flashed itself upon my brain.

"Good Lord!" said I to myself. "The girl of St. Thomas"

Then I minded my manners, and pulled off the old cap I wore. "I—beg your pardon——" I began helplessly. Her eye was meeting mine, and in it I read with most unflattering certainty that I met small favor in her sight.

It is a sore pity that first impressions may prove so persistently abiding. Here was I, a decent citizen according to my lights and in purpose no persecutor of beauty in distress or need, fated to fill with suspicion one to whom I most gladly would have made gentler appeal. Yet small blame was hers. Before her was a man, toil stained and sweat begrimed, a man whose face was fiery red and swollen and shaded by a half week's growth of beard; and a man who spoke rudely, harshly, threateningly. I marked the repugnance in her eyes—wonderful eyes they were, and, by the same token, eyes no man willingly would see clouded because of him.

"I beg your pardon," said I again, in haste. "Don't misunderstand me. I didn't mean to frighten you."

"I am not frightened." She said it promptly, with a coolness which carried conviction.

The man beside her stood stiff as a ramrod, like a soldier at attention. There was nothing hostile in his attitude, but there was something bespeaking vigilance and disciplined readiness to obey orders. Even in that early stage of our acquaintance I had no doubt of the relation of the two. It was for her to issue commands and for him to carry them out. Of course, I recalled him now; he was the chap, luggage burdened, who had followed her so respectfully from the St. Thomas pier. But though I recalled him, it was subconsciously, with no notion that he could be more than a supernumerary.

"Madam, I repeat." I began anew but Grayson interrupted me.

"Permit me to explain. We—my friend and I—find ourselves in an embarrassing predicament. We are here on an errand, which, is in a measure—er—er—confidential." He had the grace to hesitate at the word. "We are on special service, in a way; and, to put it frankly, we were somewhat amazed by your arrival."

Her gaze shifted, and rested on him as steadily as it had rested on me. Apparently it found more to its liking, and no wonder! The burning sun which had played havoc with one Scott's beauty had but added to Grayson's deep, even, becoming tan. In working garb though he might be, he looked the gentlman. Moreover, he had spoken gently, deferentially, soothingly.

"You are doing something on the yacht?" She put her question accusingly, yet without the icy chill which had lurked in her address to me.

He bowed gravely. "It is true. You saw us aboard her, you know, as you came in."

"You must desist—at once."

"Eh?" I ejaculated. "What's that?"

She didn't look at me. "At once!" she repeated—to Grayson.

He shook his head. "Forgive me if I suggest your request is—er—er—unusual."

"It is not a request."

His eyebrows rose at that and at the tone in which it was uttered.

"Do you mean it is an ultimatum?"

"Yes—if you wish to call it so."

"We have been busy on the yacht for some days," said Grayson, mildly. "We have come to feel quite at home on her. You'll pardon me, therefore, if I urge our need of enlightenment. You bid us quit the wreck——"

"Because it is mine," she said, simply. "You are trespassing on my property, sir."

CHAPTER VIII
A Question of Title.

I remember I resisted a temptation to laugh outright, and conquered only by an exertion of will. Also I fear the temptation was the stronger because of pride smarting from a very fresh wound. But resist I did. Something there was in the girl's naive air of certainty and determination which demanded respect, if not assent. Of course, it was preposterous, her laying claim to the hulk; as preposterous as would have been claim of ownership over the islands and the sea round about them. Yet I kept a straight face, and waited for Grayson to deal with her.

A moment he hesitated; I fancy her coolness and her assurance puzzled him more than the weight of her claims.

"I must raise a legal point," he said at last with due gravity. "The Zenobia was totally wrecked; she was abandoned by her crew; she has lain here for months, a hunting ground for all the looters who chose to visit her. Possession in her case is more than nine points in the law; it's the full ten."

"And being in possession, you refuse to withdraw?" Color was mounting to her cheek, but she held herself admirably in hand.

"I'm afraid I must decline."

"But you have no legal right——"

"Unluckily, you miss my meaning," said he. "I have a right, and it is a legal right, by what passes as the law of these seas, at any rate. It is wrecker's law."

"And I have the right given by the law of any civilized land," she told him. "The Zenobia was my father's ship: I am his only heir."

"Perham's daughter!" said I under my breath. "Oh, the devil!"

Grayson phrased his surprise more prettily. "I was unaware, believe me, that salvage operations were contemplated by the—the family of the late owner. And I must suggest it would have been wiser to undertake them far earlier than this, Miss Perham."

He threw the slightest stress in the world upon the title he gave her, and she understood.

"I am Miss Edith Perham," she said. "Perhaps it is true I should have come earlier, but—but—" for the first time she hesitated—"but there were reasons for—for delay. Yet I do not see that there has been any change thereby in my right to my own. The yacht was my father's; now it is mine. Could anything be clearer?"

"In one sense, no; another sense—and it is a legal sense, unfortunately—the case might be much clearer. Anybody is free to land upon these islands; anybody is equally free to board a wreck which has long lain deserted."

"And to remove whatever he can? To steal it?"

"But it is not stealing," he argued.

Her lip curled slightly. "I do not recognize the distinction."

"You must!" cried Grayson with sudden heat.

There was a flash of anger in her eye. But she held her voice even. "I decline to recognize anything except that your sea-law seems to be the law of the strong hand. And to that I do not bow."

Now, I own I was moved to fresh admiration of this girl, bravely facing overwhelming odds in this lonely corner of the earth, begging no favors, but resolutely demanding what she believed to be hers of right. I plucked at Grayson's sleeve, but he shook off my hand.

"Miss Perham," he said, "in this situation it is possible for all of us to act unwisely, but the most foolish thing we could do would be to quarrel needlessly. You find us at work on the wreck. We have made some progress, but so far we have come upon nothing of a penny's value to you, or to ourselves, or to anybody else. On the other hand, we have made a considerable investment in our venture. We have a plant—of a sort—for our operations. We expect to carry them on, and we hope, eventually, to reap a profit. If we were to withdraw, as you desire, you would find yourself helpless. You could not take up the work where we dropped it. You have no wrecking crew, no apparatus."

"I can send for both."

"How, may I ask?"

"In New York I was told that sailing vessels call now and then at the islands; people in St. Thomas told me the same thing."

"Did they mention how great an interval there might be between such calls?"

"No," she said, reluctantly, then added: "They didn't speak definitely, but I inferred that schooners came rather frequently. And we are provisioned for a long stay, if necessary."

If there was a touch of defiance in this, Grayson chose to ignore it.

"You may be here for months without a sail showing above the horizon," he said, "and you're far from the steamer tracks."

"As I quite understood," she answered, coldly.

"Why didn't you charter a schooner and a diver?" he pursued.

Again there was the rebellious flash in her eye. "You are inquisitive, sir."

"With good and sufficient reason, it may be. Will you not give me the benefit of the doubt?"

Again the quick color stole into her cheek. "Chartering a vessel and hiring men would involve more expense than I care to incur, unless I must. I wish to learn if they are required."

"This, then, is a preliminary visit, a tour of inspection?" Grayson was as serious as if he were addressing an agent of a wrecking syndicate instead of a young woman whose venturesome feet had brought her where she surely had no business to be. "You came, first of all, to see what remained of the Zenobia? I understand. But, if you did not charter a boat, you at least secured passage on one—from St. Thomas, I mean."

If he were not winning her confidence, he was bringing her to a more communicative mood.

"American schooner brought us. Her captain was very kind. He transferred us to that white boat outside the islands. He didn't dare sail among the reefs, he told us."

"That is, he gave you a lift, which didn't take him too much out of his way?"

"Exactly. He was bound for Colon."

Grayson's expression was thoughtful. "I wonder if there was much talk of

(Turn to Page 38.)

Necessity of Milk in the Diet

STATE DAIRY COUNCIL IS ORGANIZED.

H. A. LINDGREN.

NO OTHER food satisfies the wants of nutrition as efficiently as does milk and its products. It is found that the knowledge of its value as a food is lacking among the general public. To acquaint the public with the value of milk is the purpose of the State Dairy Council recently formed at Denver by the dairy interests of Colorado. Representatives from the producers, ice cream manufacturers, milk distributors, butter manufacturers, cheese manufacturers and condenseries were present at the organization meeting. The hope of the new organization is to interest all concerned in milk production and handling to take part in the program to inform the public regarding the value of milk and its products in human nutrition.

The idea for a Colorado State Dairy Council was born at the meeting of the State Dairymen's Association held at Fort Collins in December. It is felt that the program is a worthy one and should receive the consideration of all concerned. In order for the council to be successful, funds must be provided sufficient to carry on an effective form of advertising, bringing out the importance of dairy products in the human ration.

Officers and directors were chosen as follows: A. T. McClintock, manager Beatrice Creamery Co., Denver, president; Roud McCann, secretary State Dairymen's association, secretary-treasurer; Gilbert Landell, manager Colorado Condensed Milk Company, Fort Lupton; H. Brown Cannon, president Windsor Farm Dairy Company, Denver; H. D. Parker, Greeley, Guernsey breeder; W. T. Letford, president First National bank and dairy farmer, Johnstown; H. J. Wallsmith, manager Corbett's Ice Cream Co., Denver; C. B. Frink, president Frink Creamery Co., Larkspur; D. W. Thomas, secretary Agricultural and Livestock Bureau, Denver; James P. McEnroy, dairy farmer, Larkspur; R. L. Loesch, Holstein breeder, Montrose; J. W. Gingrich, president Midwest Creamery Co., Denver; Leo Shope, secretary Denver Milk Producer's association; Prof. George E. Morton, state dairy commissioner, Fort Collins.

This organization has an important place to fill. It is not for the benefit of any one phase of the dairy industry but for the entire field. Every branch should be actively associated with it and lend its support to keep the importance of dairy products before the people. Few realize that they are buying food nutrients cheaper in milk than in any of the commonly used foods. Many have seen the charts that show the relative food value of milk as compared with other foods. These are based on chemical analyses and though they show the importance of milk as a food product, they fail to show the fact that there are certain other properties that place it in a class by itself. It is possible to supply the nutrients found in milk through the use of other foods, such as eggs, meats and cereals, but when it comes to supplying the fat soluble A and water soluble B—vitamines—which are essential to promote growth in man or beast, no other food satisfies the want as does milk or milk products. It has also been found that the lack of these two substances brings on serious bodily ailments.

Experiments by Dr. E. V. McCollum of Johns Hopkins University, have demonstrated the importance of these products on the growth of animal life. The information should be in the hands of every parent, in order that they may realize the value of milk and supply it abundantly in the daily ration for their children.

Dr. McCollum, in concluding an address before the National Dairy conference at Chicago had this to say:

"Milk is our greatest protective food and its use must be increased rather than diminished. The liberal use of milk has made us what we are. No family has the right to purchase any meat until each member has at least a pint of milk daily and this I regard as below the optimum. Milk is just as necessary for the maintenance of health in the adult as in the young. I have sought in vain for several years for a diet which was not of a character which could support growth in a young animal, but which would maintain an adult in a state of health over a prolonged period. I have become convinced that we should adhere throughout life to such diets as will induce normal growth in a child of three to five years, if we would maintain the highest state of physical well-being of which we are capable. Let me repeat that the dairy industry has made us what we are, and that any further reduction in our consumption of milk and its products will be reflected in a lowering of our standards of public health and efficiency."

Organizations of consumers have sought to boycott milk. It is the duty of those who are interested to prevent

There are no substitutes for dairy products—and healthy children.—National Dairy Council.

The Expenditure for food now is—

	Per Cent.
Meat and fish	35
Milk and its products	20
Bread and cereals	15
Fruit and vegetables	13
Eggs	6
Sugar	5
Miscellaneous	6
	100

The expenditure for food should be—

	Per Cent
Meat and fish	12
Milk and its products	44
Bread and cereals	13
Fruit and vegetables	17
Eggs	6
Sugar	3
Miscellaneous	5
	100

such a condition of thought. That is the purpose of the State and National Dairy Council and every one connected with the dairy industry should be actively affiliated with it in order to prevent a decrease in the production of dairy products, through an indifferent attitude on the part of the general public.

There is only one way in which to combat this propaganda and that is to give the consumer the truth about the value of milk in the diet and show him that, in comparison with other foods, milk, butter and cheese are cheap even at high prices. This is not favoring a continuation of war prices, but merely asking justice for the dairy farmer who, as long as he must pay war prices for labor and feed, should not be expected to do business at a loss. He is ready to get back to normal as quickly as any other class, and he has a right to object when efforts are centered on making him the goat.

Poisoning English Sparrows.

The following methods of preparing poison bait for English sparrows have been found very satisfactory and convenient.

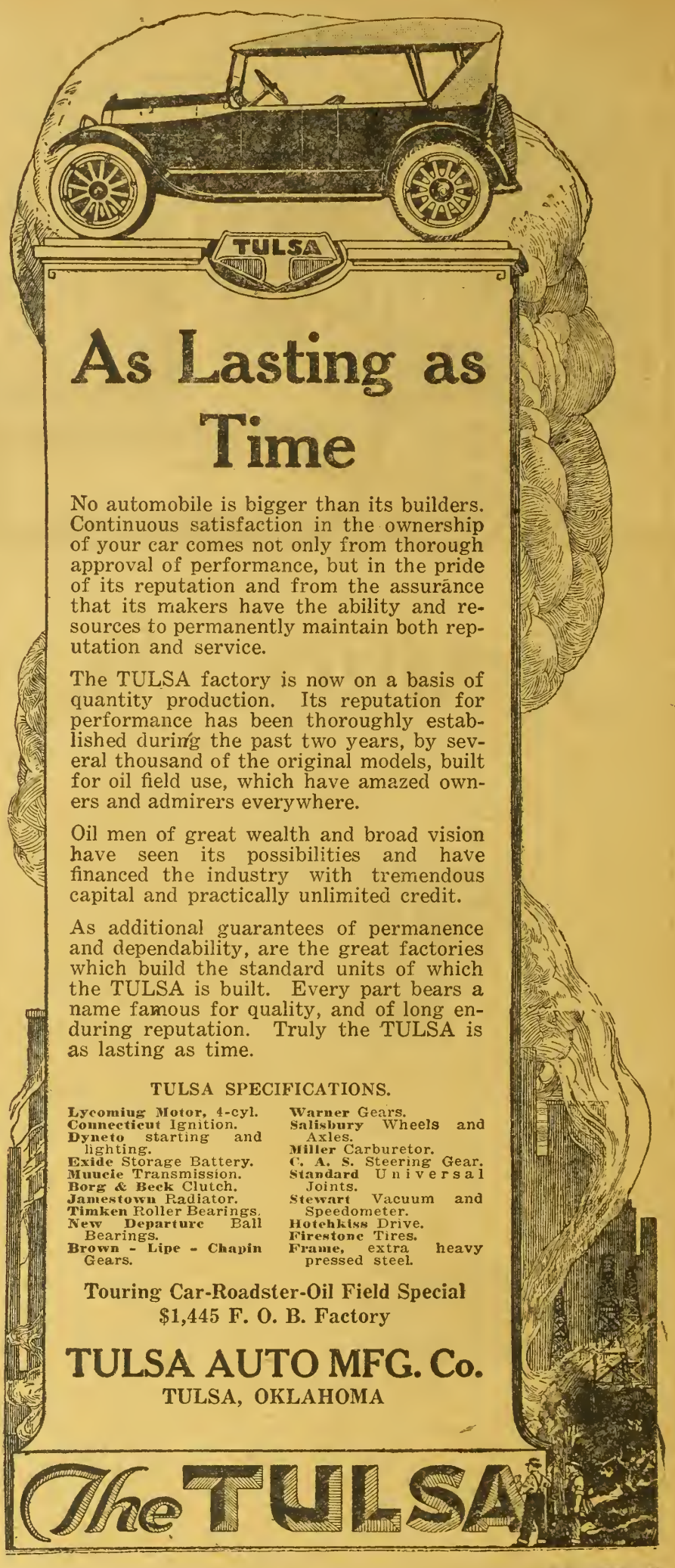
Method No. 1.—Dissolve one-eighth ounce of strychnine sulphate in one pint of boiling hot water, then in this poison solution soak about two quarts of wheat for about twelve hours.

Method No. 2.—Heat to boiling point one-fourth pint of water, then add one teaspoonful of gloss starch dissolved in a little cold water; heat and stir until the mixture thickens. Add to this starch paste one-eighth ounce of powdered strychnine and stir well. Pour the poison mixture over about two quarts of wheat and stir until each kernel is coated.

The poisoned wheat should be scattered thinly where the sparrows are likely to feed. Roofs, back-yards and unused poultry runs are favorable places to put out the poison bait, and every precaution should be taken to not endanger the domestic animals. The best time to poison sparrows is during the winter when snow is on the ground, when food is scarce and when some of the other more valuable birds have gone south. It is of great importance to the farmers to preserve the other birds, for they are very beneficial in destroying injurious insects. Sparrows are very wise, and soon leave where danger lies, so the dead birds should be removed from the place where the poisoning is done as soon as possible.—Bureau of Biological Survey.

Permanent Buildings Needed.

Good farm buildings and equipment properly arranged play an important part in making the farm a paying business and a good place to live. Suitable buildings well equipped improve the health conditions, make the work easier, satisfy the hired help and make possible greater production. The tendency in building construction is toward a permanent type of structure. Many farmers are now building of concrete and clay block. Others are treating the lumber for their buildings with creosote products to make them permanent.



As Lasting as Time

No automobile is bigger than its builders. Continuous satisfaction in the ownership of your car comes not only from thorough approval of performance, but in the pride of its reputation and from the assurance that its makers have the ability and resources to permanently maintain both reputation and service.

The TULSA factory is now on a basis of quantity production. Its reputation for performance has been thoroughly established during the past two years, by several thousand of the original models, built for oil field use, which have amazed owners and admirers everywhere.

Oil men of great wealth and broad vision have seen its possibilities and have financed the industry with tremendous capital and practically unlimited credit.

As additional guarantees of permanence and dependability, are the great factories which build the standard units of which the TULSA is built. Every part bears a name famous for quality, and of long enduring reputation. Truly the TULSA is as lasting as time.

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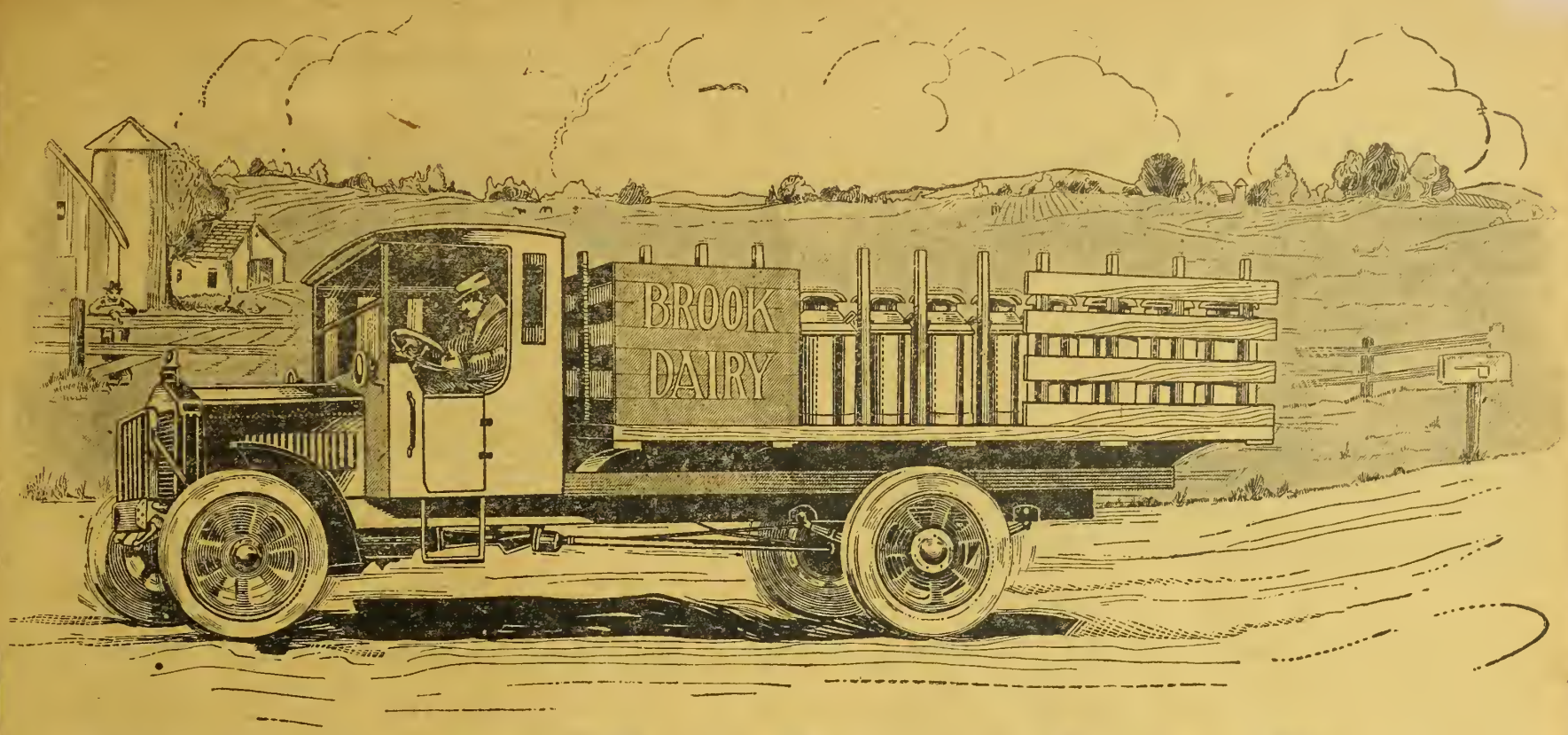
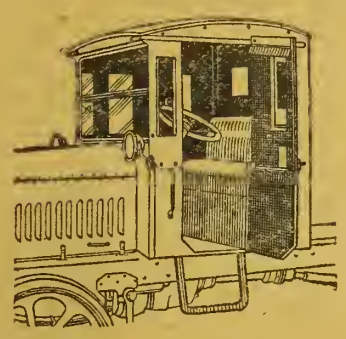
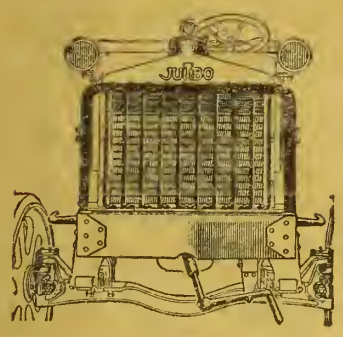


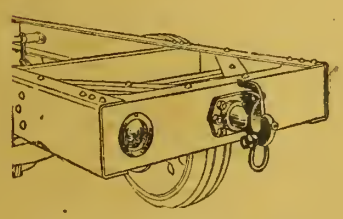
JUMBO --- The Complete Truck



Steel cab with three-man seat, fore doors and sliding sash curtains.



Radiator guard, shutters, pig-tail towing hooks, over-size thrust in steering knuckle.



Reinforced frame, tail light mounted flush with frame, spring draw bar for trailers.

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WHEN you buy a Jumbo, you get a **complete** truck. There are no extras to buy except the body most suitable to your particular business.

Jumbo trucks are built stronger than other trucks to give you more years of steady, dependable service at lowest possible upkeep cost. All equipment that makes for efficient operation is **standard** on Jumbo trucks.

This generous provision in the matter of equipment, listed on this page, is typical of Jumbo construction throughout. Jumbo trucks **must** give you unusual service---that's the idea around which our business is built.

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JUMBO
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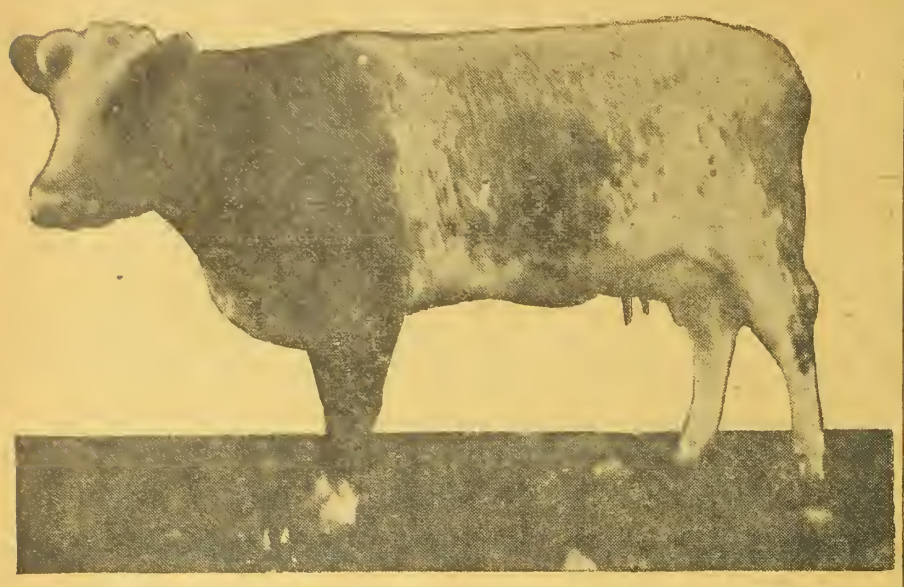
New Zealand Milking Shorthorns

INTERESTING ACCOUNT OF A CATTLE SHOW.



A New Zealand Milking Shorthorn Heifer owned by John Nixon of Canterbury.

WE of the mountain states of North America are discussing Milking Shorthorns, pro and con. We still hear it said, and by people whose opinion should have weight, that "there are no dual purpose cattle." While we are TALKING about the dual purpose here, farmers on the other side of the great waters, some across the Atlantic in Great Britain and others in the Antipodes, in far off New Zealand, are GROWING this type for beef and milk. The question as to the usefulness of the dual purpose type is not being discussed, because it is considered a settled matter that this strain of Shorthorn answers the demand for a meat and milk combination, a dairy farmer's cow and a calf that can be converted into beef.

There will be further discussion on this point in forthcoming issues. The present article has for its purpose a review of a cattle show held in the south of New Zealand some time ago, in which Mr. John Nixon, father of a well known Colorado agriculturist, was the winner of championships in the Milking Shorthorn classes.

Mr. R. S. Nixon, the son, who now lives at Grand Junction, and was formerly manager of the Colonel Dodge estate near Denver, has received a newspaper clipping telling of his father's winnings. The Nixons have grown Milking Shorthorns for years. Mr. R. S. Nixon says it is a settled fact among New Zealand farmers that this type is the true dual purpose; they are making money out of them, keeping up the fertility of their soils and maintaining the dual qualities of the breed. The test of years is behind these cattle in New Zealand, as well as in the British Isles.

The following interesting account of the New Zealand show is taken from the newspaper clipping furnished us by Mr. R. S. Nixon:

* * *

The display of cattle taken all round was up to a high standard both in point of quality and in numbers. Shorthorns were particularly strong, Canterbury and Otago breeders joining forces with the Southlanders in making one of the best displays seen on the new show grounds. Ayrshires were also forward in good numbers, the best entry for several years, and Friesians were the next most prominent breed. There have been no Hereford cattle shown at the Southland show for many years, but Mr. James King showed yesterday the cow he paid the top price for at Mr. E. Short's sale last year. This typical cow may induce other breeders of the province to come forward in this breed again. Southland is famous throughout the Southern Hemisphere for its Hereford cattle, and now the war is won, it is to be hoped the Wiamahaka Estate and other breeders will reproduce examples of their herds at future shows.

Fanciers of every breed yesterday had something to tickle their palates, for most of the recognized winners were put down by newcomers, and naturally when champions fall, there is great scope for discussion and argument, and there was plenty of it yesterday. Much of the criticism was, of course, rather wild and emphatic, but it is well to remember that the judges were all men of high reputation in the stock world. The fervor of the critics, however, is an indication of the interest shown in judging, which is highly creditable, even if the expressions used at times showed an entire lack of discretion.

Shorthorns.

Judge: Mr. W. B. Cunningham, Brookside, Canterbury.

The advent of Mr. Jno. Nixon, of Killinchy, Canterbury, with a very strong team from his successful herd raised the Shorthorn section quite out of the ordinary. Just a few months ago, the Knapdale Estate competed at the Christchurch show, and won no less than six firsts and the male championship. Mr. Nixon was a competitor there also, and therefore showed plenty of spirit in coming all the way to Southland to meet the Knapdale cattle on the home ground. Other visiting exhibitors, in addition to most of the local breeders, were Mr. David Murray of Clydevale, and Mr. William Waddell, of Waikaka Valley.

The judging was an entire reversal of the Christchurch placings, the Canterbury breeder coming out on top, securing the male and female championship, and reserve championship for females, and nine first prizes. Commenting on the section generally the judge characterized the display as very creditable. A noticeable feature was that many of the winners at Christchurch were on the ground, which gave the show rather more than a provincial standard. There were some nice cows in the aged class, Mr. Nixon's cow ultimately being chosen as champion. Mr. Nixon's first prize 3-year old heifer, which was reserve champion, was not looking at her best owing to recent calving. The winning 2-year old heifer (Knapdale Estate) will make a good cow some day. The yearling class was well filled, and some good animals were shown. In the male section, the champion and reserve champion bulls were both good animals, but of quite different types. Some useful animals were shown in the other bull classes.

The champion cow, Mr. Nixon's Lady Broadstamp, has a practically unbeaten record, and was champion at Dunedin in 1916 and 1917, while when shown as a two-year old at Ellsmere she beat the Christchurch champion of that year. The local breeder, Mr. George Anderson, was second in the open class with a cow of his own breeding, Mr. Wm. Waddell third and fourth, in a class of nine very good cows. Mr. Waddell scored in dry cows from Nixon and Anderson and again in a class which called for cow, dry or in milk, showing best milking qualities. The judge recommended that cows in this class should be shown in milk.

The Secretary's Report

Recommendations in the annual report of Secretary of Agriculture Houston include the following:

Investigational work.—Continuance and enlargement of investigational work, particularly such as is required to insure fuller control of destructive plant diseases and insect pests.

Rural life.—Increased support by states for rural schools, with courses of study related to the problems of rural life, construction of good roads, and adequate provision for the requisite sanitary and medical services, including hospital facilities in rural communities.

Increasing yields.—Preparation by American agriculture for the period of competition, which is to be expected with the return to normal world conditions, by increasing the productivity of areas already under cultivation and by utilizing the services of the most experienced and judicious agricultural leaders in determining where, when, and how to bring into cultivation public and private unused land. Full studies of distinctive regions with a view to assemble all existing data on productivity, cost of making the land available, present tenure and prices, type of agriculture best adapted to conditions, possible returns, etc.

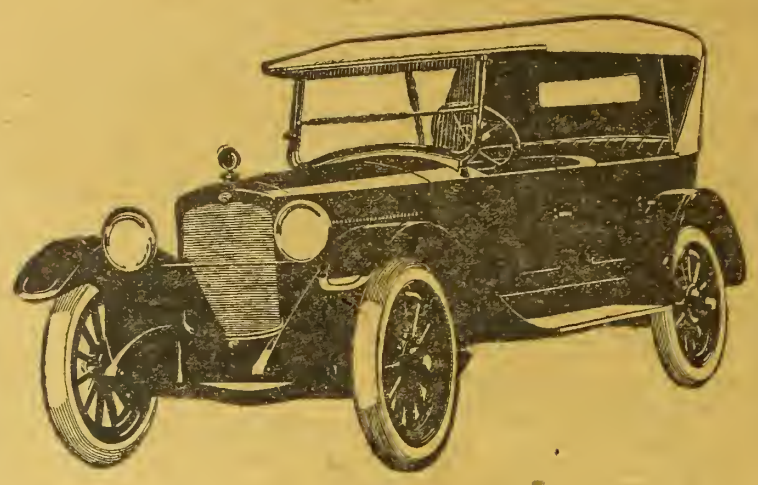
Aid to farm seekers.—Systematic aid by governmental agencies, through their agricultural machinery, to persons seeking farms, by furnishing them reliable information, by giving them special assistance and guidance, and, where conditions are favorable, by assisting in the development of well-considered settlement plans.

Tenancy.—Definite efforts to change the conditions of leasing so as to improve the methods of agriculture, increase the period of occupancy, and insure a fair division of returns, the state to provide by law for a system of compensation by owners to tenants for unexhausted improvements and for setting up the necessary administrative machinery. Serious thought to the problem of limiting absentee landlordism. Measures to retard the increase of tenancy, and to make the road to farm ownership as smooth as possible, partly by providing more liberal credit facilities.

Good roads.—Continued federal participation in the building of good roads by making available from the federal treasury, to be expended under the terms of the present federal law, as amended, and through existing machinery $100,000,000 for at least each of the four years beginning with the fiscal year 1922, if the financial condition of the nation permits it.

Further assistance in marketing.—The doing of everything that legitimately can be done to eliminate wastes and abuses in marketing and to promote orderly distribution.

IT SURPASSES COMPETITION



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CLEVELAND, OHIO

Rural Progress Due to the Auto

FARMERS PRONOUNCE IT THE GREATEST FACTOR

ALVIN T. STEINEL

WHAT is the greatest single factor in bringing about improvement of rural conditions now so evident in Colorado and neighboring states?

I have asked several farmers this question lately and the answer in each case, after giving time for thought, was "the automobile." When I began to ask this question I had in mind our great strides in rural school improvement and it was somewhat of a surprise to have an answer different from what was expected, especially from men who are strong advocates of rural school improvement, and of other good things that are coming to us. But on reflection I could not help but agree. When we get right down to the bottom of the question we must admit that it is the automobile that is responsible for the broader social outlook of the farmer; and that carries with it rural school improvement and other advancing steps up the ladder of rural progress. The first man who answered "automobile" when I wanted him to say "consolidation of schools" explained about this way:

"Consolidation of our schools is the finest thing that has come to my community since I have lived there, and that is nearly thirty years. But consolidation was not feasible or economical without the automobile. I don't mean by that that we could not have brought our children to the consolidated school by horse drawn bus, but I mean that, without the automobile, there would never have been the favorable sentiment in the districts which carried consolidation by all but a handful of votes. If you will stop and think a moment you will realize that it has been the neighborhood contact made possible by rapid transportation that gave us the result at our school election. I can recall fifteen years ago when it was a rare thing for me to speak to more than two or three of my neighbors in the course of a week—and we live in a well settled irrigated section, too. It was only on nice Sundays that we met at the little church, or possibly on Saturdays when we drove to town to do our trading. Now seldom a day passes but what I get into the car and drive over to one or two of my neighbors to consult with them about the price of beets, the price of grain for my lambs, the question of getting cars to ship some of our stuff from the siding, or some matter of school administration or politics in which I am interested. The telephone goes a long ways, of course, in transacting business from farm to farm and farm to town, but it does not compare with personal contact. You men in town no doubt find it the same way; a short personal call will settle a matter in five minutes much more satisfactorily than a tin-minute phone call. In this way the automobile has given me a chance to mix with my neighbors, and the same thing applies to my wife and children. I think I am safe in saying that three or four times a week the wife takes the car out for a run over to Mrs. Long's or Mrs. Harris', or some other neighbor, or goes to the school house for a chat with the teacher about how the children are getting along, or goes to town for a visit, or a meeting of the club.

"We never dreamed that this would be possible fifteen years ago, and the change has come upon us so gradually that few of us realize what is at the bottom of it. Just stop and think what would happen right here in Weld county if we were all suddenly deprived of our automobiles? It would mean slipping back into the benighted and isolated days of the horse and buggy, the little one-room district school, the slow moving mail delivery cart, instead of the rapid flivver, the four or five hour trip to town instead of the forty-five minute round trip journey. It's hardly possible to realize how we ever got along without our cars in the old days. The automobile is the farmer's most urgent necessity; his auto truck comes next, and having these, all other good things are added unto us. That includes school consolidation with the auto vans for carrying the children, community spirit in road improvement, social contact, farm bureau activities, use of the county agent, and the greatest thing in the farmer's life—a satisfied family, content to remain on the farm, because the farm has been modernized."

Having listened to this explanation from a man who has made a success of farming through hard work and the application of knowledge acquired through constant study of his problems, I had to admit that he told the truth. What he says applies to a greater or lesser degree to most western communities where auto owning farmers are in the majority. The farmer who looks upon the automobile as an item of expense instead of an asset makes a serious mistake. If auto ownership by farmers is a liability, then there are millions of mistaken farmers in the United States. A brief analysis of automobile statistics will be of interest. Estimates quoted recently in the Literary Digest show the official register of commercial and passenger automobiles in the United States to be 7,602,000. Based on a total population (estimated) of 105,000,000 and counting five persons to the family, this means a car for every third family in the United States.

Figures for Colorado show 110,000 automobiles owned in this state January 1, 1920, about one car for every ten persons. While the proportion of ownership to population is greater in the rural districts than in town, the potential market for the future, nevertheless, is the country, because every farmer needs an automobile and a truck. This is true of Colorado and to the same extent of Wyoming, Idaho, Utah and New Mexico, the auto registration for these states being as follows: Wyoming, 22,000; Utah, 35,000; Idaho, 43,000; New Mexico, 20,000.

Farmers who are interested in automobiles—and that includes everybody—will see something worth while at the Denver Auto-Motive show, to be held in the stadium at the stock yards, March 2 to 6. It is announced that the value of the exhibits will run to a million and a half, and that the Denver show will surpass any similar exhibition ever held in the west. It will be a gathering time for dealers and the buying public, and everything in the automotive line—automobiles for pleasure and business, farm trucks, vans and busses will be on exhibition.

The Income Tax Report.

The time is here for the payment of the 1919 income tax. Forms have been sent to all citizens and are to be filled in and returned with your tax return not later than March 15. A careful study of this form will give a fairly clear idea of what information is necessary.

It is wise for the farmer to keep certain records of his year's work, as it will be of untold assistance to him when figuring his income tax. The nature of the information desired is the amount of money received for grains sold, seed, livestock, fruit, vegetables and any other cash crop of the farm. Also the wages, salaries or commissions received by all members of the family. The farmer must also have knowledge of the money paid out for everything in the handling of the business. From this information the net income is determined and the tax computed.

Every year we hear remarks such as, "Next year I am going to keep accurate account." This is a point that would be of untold value to show the leaks in a business as well as being valuable in determining the income tax.

Let Western Farm Life Service Bureau help solve your farming problems. All questions answered promptly.

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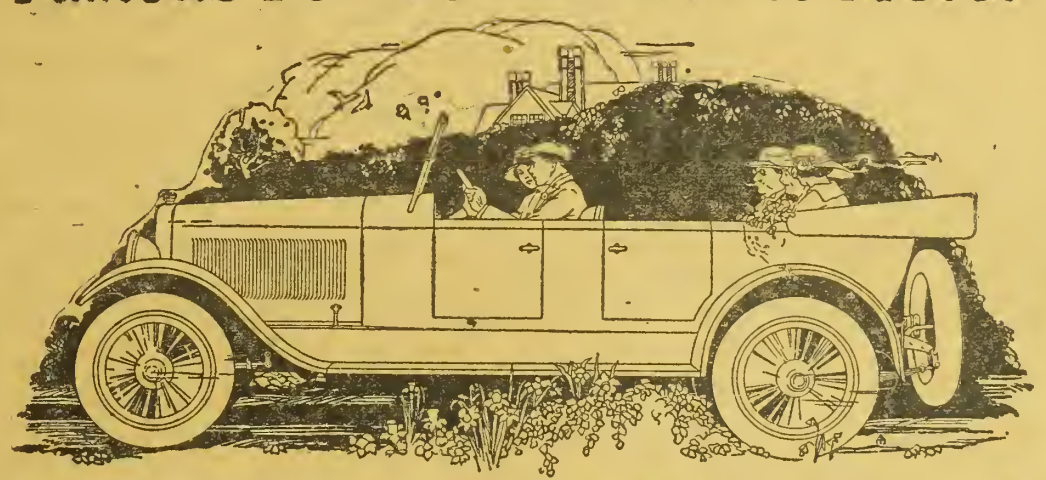

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CLEVELAND, OHIO

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No Time to Read?

We hear that so often from farmers who are busy—"no time to read." And yet, are we just to ourselves when we fail to take time from the arduous duties of the farm to study our problems as they are presented to us from time to time through the farm press? The editor knows from the nature of the questions that reach his desk how much good material is overlooked. Time after time we answer the same questions, although the answers have been published several times. We are here to give service and we will answer the same questions day after day, if they are asked. That is not the point. The object of this reminder is to call attention to the importance of giving your farm magazine a careful examination on its arrival.

Look through this issue. Are your sows about ready to farrow? In the department devoted to dairying and hog raising there are suggestions from the associate editor that should be helpful. Have you been troubled with wild oats in your wheat fields? Look for the article by Prof. Robbins on control of that pernicious weed; there will be suggestions in it for this spring that might save you money. Are you figuring on putting out some corn? Then read the article on seed testing, which may mean the difference between a good stand and a partial failure. A score of other timely subjects are handled in this issue.

Western Farm Life seeks to present practical and timely information. You are paying us for this and we want you to get your money's worth. There is only one way in which you can benefit through your subscription, and that is to become a real reader and not only a nominal subscriber. Take time to read; it will pay.

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"West of One Hundred."

Under the caption, "West of One Hundred," there has appeared in the Country Gentleman a series of articles purporting to depict conditions in the dry farming regions of the West. Twenty years ago such romances were written and widely circulated with a closer relationship to the truth. Any one writing them today is either deliberately misrepresenting conditions, or writing without personal knowledge of the subject. In either case a publication enjoying public confidence to the degree that one might expect of the Country Gentleman should choose its subjects and authors with greater care. Mr. E. V. Wilcox bolsters his argument against dry farming by citing the west Texas drouth of '16, '17 and '18 and recent dry years of eastern Montana. He pictures "West of One Hundred" as a sandblown desert where settlers come and go with the changing seasons, and uses incidents happening along the fringe of this great country in the effort to make his readers believe he is depicting general conditions.

If he does not know, the editors of the Country Gentleman show know that the system called "dry land" farming has redeemed millions of acres in a dozen western states; has caused these states to acquire a permanent and prosperous population; has built up towns, cities and states and is today one of the most flourishing farming regions of America.

A romancer in search of atmosphere and color for a good yarn can find it anywhere "West of One Hundred," not because the country is poor, but because the settlers were drawn largely from the cities and came without experience and capital into a new country to meet unusual conditions. That the majority remained and made good is the best evidence that the methods of moisture conservation through deep plowing, summer fallowing and other means of what might ordinarily be called good farming, are the right practices.

One of the articles suggests "drouth insurance" as a possible remedy for crop failures. We who have lived on dry land farms and know the game from experience and have our homes and bank accounts to show for our success "West of One Hundred," carry drouth insurance, but not in cash premiums, but by applying the now well established principles of moisture conservation, growing drouth evading and drouth resistant crops, by a cropping program that makes ample provision for livestock, by storing crops in silos for winter feeding, with a reserve for possible drouth. Thousands of us today are getting better cash and tonnage returns from our land than the farmers of the East, and we live in a country that is blessed with a healthful climate. We use more land, because our operations are on the extensive rather than the intensive plan. That we are succeeding is vouched for by income tax returns, assessors' reports, bank statements, and soon will be quite evident also from the census of 1920, which is now being taken.

Western people are aware of these facts, and it is hardly necessary to refute the statements of the Country Gentleman, yet one does not wish to pass without protest such a subtle and carefully concocted libel on the semi-arid country as is contained in the Wilcox articles. The author has sacrificed every consideration of fairness and justice to obtain word painting material from the unfortunate circumstances of three dry years in the southern plains and three in the northern plains country. He wrote a story that would sell in the East. He put in enough truth to answer critics, padding here and there with what the farmers in eastern Washington are saying or doing, or what Arizona is bringing forth along dry farming lines, but leaving the impression that failure is written over the face of the semi-arid West. There are people in the East who still think of this country as "the Great American Desert," but we insist that no magazine has the right to foster that impression for the sake of what the editors of the Country Gentleman, no doubt, considered a "good story."

✦ ✦ ✦

Controlling the Market.

The other day a subscriber asked for pointers that would aid him in handling the affirmative side of a debate on a resolution to the effect that the farmer should fix prices on his own products. We tried to help him with some food for thought and perhaps this line of argument will interest others. Farmers all over the country are thinking along economic lines and some of these thoughts are being crystalized into action. Questions are being asked and they demand answers; and no question presses for solution more strongly than this one of why the farmer has allowed control of the market to remain entirely in the hands of the middleman or merchant. We have discussed this matter with our subscriber along the lines which follow.

Many reasons might be cited as to why the farmer should fix the prices at which his own products are to sell, but the fundamental reason is that he is the best judge of the value of what he raises, because he knows (or should know), what the product has cost him, in cash outlay, labor, land rental, interest on investment, etc.

The farmer is the only producer who does not set prices on the articles he produces. The manufacturer has his costs carefully figured and he sees to it that his sales price covers cost of production plus a profit, sometimes fair and sometimes unfair.

Why does not the farmer fix prices on his produce? Because he is not in control of the machinery of distribution. The entire world trade is in the hands of the merchants, middlemen, or tradesmen, whatever we wish to call them. This has been true for ages. As civilization has grown more complex, there has been more and more of a tendency for the producer to confine himself exclusively to production and turn over his products in bulk to the distributor, who takes care of the marketing. As long as this machinery of trade is in existence, backed up as it is by the banker who furnishes the money, the farmer will probably find it most convenient to continue the present arrangement. There is no reason, however, why he should longer let the middleman fix the prices. It is up to the farmer to change this condition by a process of organization and education. The first thing he needs is to keep an accurate account of cost of production. This can be furnished him by the Department of Agriculture, for various staple crops. The next thing necessary is to educate the city consumer up to a point of appreciating the difficulties under which the farmer labors in producing his crops.

Another step is direct marketing from producer to consumer. This can only be done with certain products that leave the farm ready for the table. It is not practical with wheat, which must be milled, or livestock which must be slaughtered, but can be done to a greater or less extent with eggs, poultry, fruits and such like, if the farmers producing these things get together in co-operative marketing associations. Such associations should get in touch with associations of city consumers who can handle farm produce in large quantities directly to their members, eliminating the middleman.

Societies of this kind are in existence in England. In America there are societies doing co-operative marketing for the farmers, but we know of no successful ones among consumers, though there may be some. However, this plan would take care of only a small percentage of the farm grown stuff. The biggest part of the problem remains—namely, marketing the wheat, sugar beets, hay, livestock, etc., which can only be done through some manufacturing channel.

Progress is being made in sugar beets in this state. The growers have gotten together and arranged a schedule of prices which they are asking the sugar companies to pay. If what they ask is fair they should have it, rather than let the manufacturer dictate the price, as has been the custom in the past.

The wheat problem is a harder one, because of the enormous quantity of wheat that is grown and because of the differences in cost of production between various regions. Flour sells at uniform prices in given regions, according to cost of manufacture, plus transportation and profit to the miller. For that reason a uniform price governs the cost of wheat to the miller. We call it the "market price."

This price, we are told, is based on demand and supply. That is, if the supply is short, crop conditions in general poor, it means that the demand will be hard to fill and prices will be high. If, on the other hand, there is a big supply of wheat the price will be low, regardless of what the wheat has cost the individual farmer to produce. It is quite evident that this uniformity must exist, because wheat is a product of world trade and subject to influences of world demand, and as long as it is left solely to these influences no one has a right to complain.

However, the thing that the farmer has a right to kick about is speculation in wheat, or any other of his products. Speculative values are governed by "futures," and "futures" is a speculative term meaning a guess on what the demand and supply will be at a coming date. The speculative market on grain and provisions is maintained for the sole and exclusive benefit of a class of parasites whose business should be outlawed by the national government. There is a place for the broker who deals in actual commodities, who buys and sells hay, grain and provisions. He is entitled to his commission for bringing seller and buyer together. But the bulk of the business on the grain exchanges in futures; a buying and selling and re-selling in which the commodity never moves, though half a dozen different speculators take a profit on the transaction. This sort of trading must be outlawed as the first step toward a fair market. We need sound economic legislation, a sound agricultural policy for the nation—something we do not have—and we need a better understanding between the producer and the city consumer. Organization, education, publicity, legislation, are all means to the end.

The Branding Iron

A fellow named Hoover took our white bread from us, made us drink our coffee without sweetening, forced us to stint on all luxuries, cut down our portions of meat, ordered us to quit eating pork on certain days, and beef on others, and in general assumed control of our appetites and habits, and instead of kicking him after he lost his season of authority we are talking about running him for president! Queer people, aren't we? Wouldn't the logical punishment be to make him vice president?

* * *

Secretary of Agriculture Meredith has been flooded with telegrams asking him what he was going to do about cutting the high cost of living. Why wire Meredith? Aren't the farmers doing everything possible, by producing food and working long hours at it? These telegrams belong to the Secretary of Commerce and Labor. They should be referred to the short-hour-half-week labor union organizers and the superfluous middlemen, and not to the Department of Agriculture.

* * *

Wisconsin is the banner silo state, with 71,000 as its total, based on figures gathered last spring. The increase over 1918 was 7,000. New York claims about 70,000 silos, Illinois 38,000; Indiana 36,000;Ohio 35,000, and Iowa 25,000.

* * *

Co-operative feed buying is being carried out on a practical basis in Fremont county, Idaho, with a reported saving of $4 per ton on a shipment of 150 tons brought from the Lower Snake valley. Four communities in that county pooled their orders for seed oats for this spring. That's practical farm bureau work.

* * *

Smith: Who are you working for now, Jones?

Jones: Same people—wife and five children.—Passing Show.

* * *

Prohibition has brought sunshine into many homes; also moonshine.—Saguache County Farm and Livestock Reporter.

What do you know about moonshine, Sauder?

* * *

According to a report sent out by the the Extension Department of Idaho University there was $10.27 saved for every dollar expended in farm bureau work in Idaho in 1919. Savings totaled $2,820,217 for an expenditure of $274,509. These figures were prepared for submission to the county commissioners of Idaho at their annual convention in Boise recently.

* * *

It looks very much as though the League of Nations would have to be classified with the minors, at least for the coming season.

* * *

A good roads booster has figured out that we would save $119,000,000 a year in tires and gasoline if we had a system of federal highways. If we could save that in advance and then build the highways the argument would have a stronger appeal.

Substitute for Paris Green.

Additional experience confirms the conclusion, reported last year by the Bureau of Entomology of the United States Department of Agriculture, that arsenate of lime may be used in all situations as a substitute for Paris green, and that for pomaceous fruits—apples, pears, and quinces—it may prove a satisfactory substitute for arsenate of lead when used with lime or fungicides containing lime. A less expensive substitute for nicotine sulphate also is being sought.

"feb. 20"

If the label on your magazine reads "feb. 20" your subscription expires this month. You, no doubt, intend to renew. By doing so at once you not only extend us a big favor, but will make sure that you will not miss a single issue of Western Farm Life.

Send us $1 for a two-year renewal subscription, or $2 for a five-year renewal subscription.

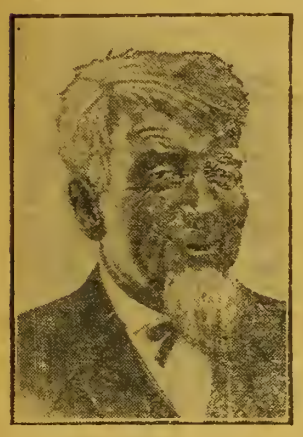
We appreciate your past subscription and hope you appreciate our magazine enough to renew now.

After you have renewed, watch the address label on your paper to see that you have been given proper credit.

WESTERN FARM LIFE,
Denver, Colo.

Comment by Farmer Putnam

HE GETS A LETTER FROM HIS FRIEND HOLDEMBACK WHO HAS GONE TO A HIGHER ALTITUDE.



THIS here is about a old friend of mine and not fur the general public, but all them as wants to read it kin do so and them as don't, vicey versey. I got a letter from him—that is Isaiah Holdemback. He's gone clear off up to Hot Sulphur Springs in Grand county, to take up ranchin', havin' sold out his dry claim in Arapahoe county. The doctor advised him to go to a higher altitude on account of his heart. You see his case is pecoolier. Isaiah warn't no angel in his younger days and it left him with a desire fur strong licker. Not that he is whatyou'd call a drinkin' man, leastways not accordin' to our Missouri standards—but he had to have somethin' every day fur heart spells. I hope I ain't a-tellin' too much about his family secrets, but I reckon you-all want to know why he was ordered to go to a higher altitude fur heart trouble, instead of goin' to a lower place.

Isaiah was a neighbor of mine back in Platte county, Mo., and after he settled down he got so peaked and thin with ager and palpetashun that somethin' had to be done. Of course back in them days we didn't have but one prescription fur them kind of complaints and plenty of it, and it was easy to git and cheap. Isaiah didn't stint hisself on medicine. He was a liberal and open-handed cuss with hisself and others, but the more medicine he took the wuss off he got, till finally the doctor ordered him to go to a higher altitude.

This was four years ago and he knowed we was out here, so he come and follered us, buyin' a relinquishment. Well, things went all right and he got some better fur a while, but in the last year he's been complainin' ag'in. Just before he left fur Grand county he sez to me:

"You see, Tom, the trouble ain't that my heart is gittin' wuss but that it's runnin' along too durned well, because I'm so used to this altitude now. When I fust come out I had to take medicine right along, but lately I've been improvin' too rapid to suit me. It ain't good fur a feller to change his habits so suddent, and as my system don't call fur as much medicine as I think I ought to have I'm goin' higher up.

"I'm no drinkin' man, you know that Tom, but I been used to my dram every day. I ain't the kind of a feller that'll take medicine just fur the taste; they's got to be somethin' the matter with me before I'll touch the stuff. Lately I been feelin' so all fired good that I hain't got the heart to ask Doc. Gleason to subscribe fur me. You know, Tom, I wouldn't violate no law. I'm a law abidin' and respectful citizen and I wouldn't do nuthin' ag'in my government even fur a bar'l of red licker.

"I went to see Doc. Gleason the other day and I sez to him, 'Doc., would it affect my heart if I was to move up to Grand county and took up a homestead about 7,500 feet?' Doc. scratched his head and sez: 'Isaiah, I reckon it would be fatal to you except fur one thing.'

"'What's that, Doc., let me have the truth; I kin stand it if it kills me.'

"'Well,' he sez, 'Holdemback, if you must go way up off in them high mountains to live, the only thing that'll off set your palpetatin' heart action is the forbidden fruit of the corn plant—sour-mash bourbon.'

"'It's a turrible situation,' sez I, 'but I've got to bear it as best I kin. How much is the prescription, Doc., and where kin I have it filled?'"

Well, that's about all the preliminaries that's necessary to introduce Isaiah and set him off on his trip to Hot Sulphur with a suitcase full of life saver and a written order signed by a M. D. fur more of the same if the altitude begins to show on him. Isaiah is a long headed feller. Nuthin'll stop him when he goes after anything and I reckon if he gits used to the altitude and cain't take his medicine with a clear conscience any more he'll move on up to the top of Rabbit Ear pass.

Now let's read what he has to say about his trip to the upper part of the world, which is reached only by the Moffat road and not always by that road.

(Isaiah, please note in third line, I made it read darn instead of ——. The editor don't allow no profanity in this here paper. He sez it is read by respectable people. He don't know it all.)

Dear Tom:

Well I got here all O. K. after a long hard trip on this D. & S. L. which stands fur Darn Slow Line in this country. We started out-a Denver headed east. I thought all the time they was mistaken and wanted to git off, but I didn't say nuthin' and sure enough they soon found their mistake and headed back west ag'in like they ought to a-done in the first place and got straightened out on a bee line fur the mountains.

I settled down in my seat; that is, my half, as the train was sure full, fur a good straight ride into Middle Park. Well, we hadn't gone more'n about ten mile till I looked out the window and the blame train was headed back away from the mountains. I begin to git pretty oneasy about it, but soon found they was only runnin' a bluff, cause pretty soon they turned around and made a good run right at them hills. After a while the brakeman come through and turned on the lights. I thought this sure is a slow line if it takes all day fur him to go through the train and light up, cause it was only about ten in the morning then and a nice clear day. It wasn't long before I found out what was up. The first thing I knowed the car got all dark and the smoke begin to roll in the windows to beat all, just like the engineer was layin' down a smoke screen, so's people on the plains couldn't see us. Then everything was clear ag'in and we was in plain sight of everybody. I asked the feller on the seat with me what was up and he told me that we was goin' through the tunnels. I guess you have heard of them tunnels. We sure run into a nest of 'em. It seemed that we wasn't no more then out of one till we was in another. I was all mixed up in my directions as we was twistin' around so much. They turn some of the shortest curves you ever seen. That Moffat road engineer has got you and your Maxwell beat fur short turnin'. Onct the fireman went to throw in some coal and just then the engineer made a short turn without tellin' him about it and instead of throwin' the coal in the firebox, he throwed it right into the cook stove on the diner.

Everything went on alright till we got to Tolland and then we sidetracked fur a freight and waited around fur a while. I looked around and saw a engine comin' down the track ahead of us just throwin' snow to beat the cars. I didn't see no use in his makin' such a fuss and throwin' so much snow as there wasn't any one out there to snow ball, but purty soon I heard somebody talk about a snow plow and, sure enough, it was one of them big rotary plows. Well, the wind was blowin' so it nearly blew my head off every time I looked out the window, so I kept inside pretty close and didn't see what was happenin', but purty soon we got started and the old snow baller was on the front of us gittin' ready to snow ball any bear that come along. We didn't see no bear but the feller at the head kept in good practice all the time. Purty soon we got to the top and waited around in one of them big snow sheds. I found out why they call them snow sheds. They store snow in them fur the summer tourists.

After we got started down they went along purty fast, cause the hill was so steep they couldn't stop. The train butcher come along and started to tell all about Middle Park. Well, I looked out both sides of the train all the way down and I didn't see no park. It's just one grand jumble of mountains all over, with here and there a little wide place where somebody has a few buildings and corrals; people here call 'em ranches, but they ain't nuthin' like the ranches that you and me is in the habit of runnin'.

Well, we kept on comin' down the hill and purty soon the brakeman come through and called "Sulphur" I didn't like the idee because I had took all the sulphur I needed when I was a boy. I asked a few questions, wise ones as I always ask, and found it was Sulphur Springs, the place I was headed fur. The train stops down in the willows along the river, so nobody will see you gittin' off and you kin sneak up on the town and locate before anybody knows you're there. I saw the most people crippled up and layin arund at the hotel but I kept still and soon found that they was here takin' baths in the spring. I thought it was a long time fur them to wait to take a bath, cause the weather didn't look like spring would open up fur several months. But say, Tom, you wouldn't guess it, they got hot springs here that has water in 'em, and seem to cure people of anything they has got. The water has got sulphur in it and that's how the town gits it's name. I thought maybe it would do me good, so I put some in my medicine but it spoiled the taste of it.

I got a place to sleep and had a good supper. It was gittin' along about seven thirty and past my bed time so I turned in. I got up at usual time and had to wait fur everybody else to git up so I could git some breakfast and while I was waitin' I wrote this. I am goin' out after breakfast to see the town and the springs and will let you hear from me ag'in. Give my regards to Josephine and the boy; that is, if you're on speakin' terms with 'em. Mandy is still out to Boulder; thought I'd better git a place to live before she comes over. Am feelin' fine so fur and hope this altitude don't git too familiar. If I git to feelin' too blamed good I'll move on up higher. This weak heart of mine is sure a blessin' in disguise.

ISAIAH HOLDEMBACK.

You folks up around Kremmling and Hot Sulphur kin make yourselves friendly with Isaiah; he'll be stirrin' around as soon as the snow goes off, on the lookout fur a good homestead or grazin' claim.

Thoas Jefferson Putnam.

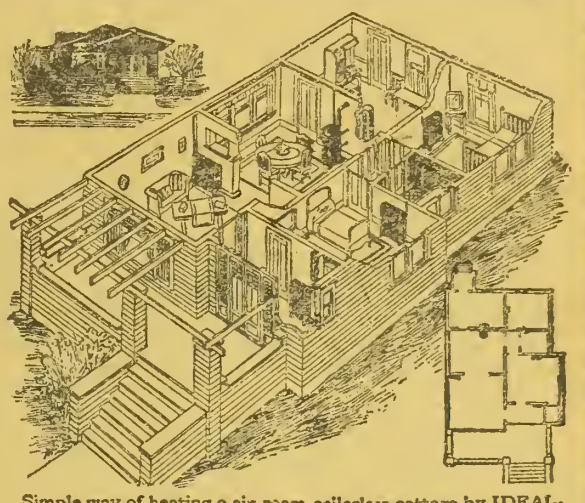
Give your home a square heating deal

New IDEAL-Arcola Radiator-Boiler

A farm house during these severe winters is only half-a-home indeed, unless it is comforted cheerily throughout with an IDEAL-Radiator Heating Outfit. Warms every nook and corner, keeps floors and halls free from chills and drafts. In fact, makes the whole house inside like summer time. The IDEAL-Arcola Radiator-Boiler does it.

The IDEAL bargain in low-cost heating

This new invention—the IDEAL-Arcola Radiator-Boiler takes the place of a parlor stove and throws off its soft June-like warmth through the room. The IDEAL-Arcola is hollow-walled—the space being filled with water, which as it is heated circulates over and over constantly through piping to American Radiators set in adjoining rooms. All the rooms are therefore warmed uniformly from the one fire. Your house is warm and snug all over.



Gives utmost comfort and coal saving

No cellar is needed—everything is on one floor. Water pressure is not necessary. The IDEAL-Arcola Radiator-Boiler heating outfit is more durable than the building itself. It will never rust or wear out or need repair. Investigate at once and have your dealer give you a quotation on an IDEAL-Arcola Outfit for your home. Shipped complete ready to install and operate.

Simple way of heating a six-room cellarless cottage by IDEAL-Arcola Radiator-Boiler and five AMERICAN Radiators.

Catalog showing open views of houses with the IDEAL-Arcola Radiator-Boiler in position will be mailed (free). Give your farm home and your family a square heating deal by finding out all about this most successful and economical method of heating.

Sold by all dealers. No exclusive agents.

AMERICAN RADIATOR COMPANY

Write to Department F-27 Chicago

Paying for It.

A businesslike man stepped into a butcher's shop. "A piece of beef for roasting!" he ordered, briskly.

The meat, mostly bone, was thrown on the scales.

"Look here!" remonstrated the man. "Your're giving me a big piece of bone!"

"Oh, no, I ain't," said the butcher, blandly, "Ye're payin' for it!"—Exchange.

Have You Poultry and Eggs to Sell?

You can find buyers from among our 50,000 readers for all the poultry and eggs that you have to sell. If you will send in a little "ad" for the "Farmers and Stockmens Exchange." A little "ad" in this department will do the business. Try it.

The highest point in America is Mt. McKinley in Alaska. The lowest place is in Death Valley, California. The Elevations of these places are 20,300 feet and minus 276 feet respectively.

Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Proof on Homestead.

1. Will you please give me information as to the following Family lived on homestead three years with only one five months off. When we went to prove up only took one man that had lived near here for three years; other man had lived near only two years and proof was rejected on account of the two year man, and fifteen days given to supply further proof. Letter was delayed and when it reached us the fifteen days were more than up. Went before a land lawyer and took two witnesses; that was months ago and said lawyer says he had heard nothing from it. If we receive no word from it, will it he necessary to make new proof and will it make a difference, as we have been off said place a year now?

2. Can a woman hold half a homestead or at least keep husband from selling it if they should separate?—Subscriber, Colorado.

1. Write your land office where the land is entered for full directions as to what you will have to do. It is not clear from your question and in any event the land office will know precisely what is required and will tell you.

2. A woman, wife, may enter a homestead on the margin of the entry which gave her husband title to land which is occupied as a homestead and by so doing will prevent the sale of her land homesteaded without her signature. "Homestead" as used in this connection does not mean the same as a government homestead. This homestead is permitted under a state law.—Hamlet J. Barry, 724 Equitable bldg., Denver.

Ownership of Real Estate.

A has a piece of real estate. B attaches it and it is finally sold for taxes to C. To whom does it belong, B or C? —J. P. R., New Mexico.

The land belongs to C. Why did not B sell the land under his attachment? I cannot tell from the question. If he had sold it and acquired title it would have been his. But whoever owns the land must pay the taxes, or on sale for taxes the tax title holder acquires the paramount title.—Hamlet J. Barry, 724 Equitable Bldg., Denver.

Work on Oil Claims.

What is the law in regard to oil claims? What labor must be done thereon?— T. A., South Dakota.

Oil claims are entered the same as placer claims. Work of $100 per annum is required and when not less than $500 has been expended upon the claim patent may issue by the government.—Hamlet J. Barry, attorney, 724 Equitable Bldg., Denver.

Sunflowers as Forage.

What would be the comparative value for feed as harvested between the sunflowers and rye or oat hay?—G. W. M., Pitkin county, Colo.

Sunflowers in this country have not been used as a hay or fodder except in a small way. We have no information as to the comparative food value of sunflower stalks as compared with rye or oat hay. From our knowledgs of the plant, would say that it would be more palatable than rye but not so valuable as oat hay. It is worth trying. The larger tonnage possible in case of the sunflowers would be in their favor.

Dairy Development Plan.

Can you give me any information on the Holstein Dairy development plan? I would like to get a few cows that way, and I think a lot of other farmers would like to get in on that kind of a deal.—D. S. R., Larimer county.

You will note that it takes an organization of business men to furnish the necessary capital to buy the cows, which are turned over to the farmers under the terms of a four year lease. Perhaps you could get your County Farm Bureau to take this matter up. There is, no doubt, a dairy improvement committee in your Larimer county organization, and by getting in touch with the farmer who is chairman of this committee you may be able to work up interest in a leasing plan.

Storing the Moisture.

I want to plant a small dry farm orchard this spring just for home use, also a few shade trees about the place. I have a dry farm about 22 miles southwest of Pueblo. I think the elevation is about 5,500 feet here. I expect to be able, in a year or so, to irrigate from flood water, but this will be mainly in the spring, but expect to give dry farming culture to conserve the moisture. I would like for you to suggest some of the best varieties of cherries, apples, plums, and crab-apples and any other additional fruit you think would do well to plant a few trees of. For shade trees I would like something that grows reasonably quick. I am also thinking of planting a grove of some desirable tree to use for posts and wood in a few years. What would you suggest for this?

I expect to seed down 30 acres of land to alfalfa for sheep pasture. This is alongside 200 acres of native grass pasture. What variety of alfalfa do you think would be best for this purpose? How would Baltic do? Is there any other grass such as brome grass or something else that would be good to mix with this? The soil is a loose, mellow, sandy soil.

I expect to build a ditch to use flood water in the spring. The creek comes from the mountains and only runs during rainy spells. Sometimes from a wet melting snow and sometimes from a hard, steady rain, usually three to four days at a time. I expect to seed down alfalfa and soak it good when the water is running and also winter wheat or other small grain. Some years under the ditch I would plant corn and not expect to irrigate then; and other years I might not get any water at all to irrigate with. You see, the land would be soaked thoroughly some years and some years only get the natural rainfall. Some farmers tell me this would not work, for if once irrigated, land must continue to be irrigated. I would like for you to advise me the probable result of this method, whether it is advisable to do it or not.—E. L., Pueblo county, Colo.

An article about trees appeared in the Western Farm Life of January 15 which contains the information you request. For posts, I would recommend the black locust. The catalpa is also used for this purpose, but it is impossible to know just how it will do in any locality until tested.

The alfalfa that we know most about, and that has been most thoroughly tested is the Grimm. New varieties like the Baltic, hairy Peruvian, etc., are always being introduced; but until they have stood the test of time and extensive planting it would be unwise to use them. The Grimm is a fine, vigorous, leafy alfalfa growing at altitude of 8,500 feet without intertilling; in fact it has given satisfaction everywhere from New Mexico to Montana.

It is quite true that when crops are started with irrigation the watering must be kept up at regular intervals. The reason is that the roots form a few inches under the surface and do not go down to any depth to speak of. Like the old cow that has always been fed in the barn, they will not start out and rustle for a living.

The best method of handling the water that you can store in the early spring would be to soak up a piece of land, and plant the crop on it afterwards. Then the roots will follow the moisture line as it becomes deeper and will act like any dry farm crop. If you can soak up a field six or seven feet deep with the help of careful mulching you can raise a crop without any rain. Some years ago I talked this matter over with Dr. Alwey of Nebraska university and he decided to test it. He planted some wheat in cylinders six feet deep and filled with soil well wet up. The wheat matured heads and grain, the roots going to the bottom of the cylinders which were placed under a rain proof roof.

If land were irrigated and soaked down only two or three feet it would still be of immense value to crops. Lots of the irrigating of the future, I believe, will be done along these lines when people understand it. The flood water that you are able to catch in your reservoir from the summer rains could be utilized to advantage for irrigating crops about to mature which as every dry farmer knows, always need just one more rain.

Brome grass is the only thing I would ever plant with alfalfa at the rate of about a bushel to the acre. In a pasture it affords a change for the sheep and they are less liable to bloat. It does not make much of a growth the first year, and for this reason is not hard on the alfalfa; but after a while it preempts all the vacant places denuded by gophers and seems to stool out just where most needed. No grain or nurse crop should ever be planted with alfalfa on the dry farm; but brome grass is neither of these. It is simply a filler which does not compete in any way with the alfalfa while the struggle to become established is taking place. After the first year irregular irrigations will not injure alfalfa because the roots are already at depth, but winter watering when ice may form on the crowns causes trouble.—E. R. Parsons.

Cement Lining for Cisterns.

Please tell me what you can regarding cement in lining cisterns and the cost? —D. K., Nebraska.

For a dense clay soil it is frequently customary to plaster a 1:2 mixture of mortar directly on the clay, being sure that the clay is dry. This is put on to a thickness of about one inch. For a sandy soil, which you probably have in North Platte, it is better to make a form about one foot smaller in diameter than the cistern, let the form down into the cistern and pour a 1:2:3 mixture of concrete around it. This will make a wall six inches thick and if well spaded so that no air spaces are left in the concrete, it should give you a strong, waterproof cistern.—Portland Cement Association, Denver.

Residence on Homestead.

Does a man have to be on his homestead within six months from the time he files or from the time his filing is allowed?—N. M., Morgan county, Colo.

A homesteader is required to take up his residence within 6 months from the date of his entry of the land. That means from the time your filing is allowed.

Teeth Grow Dingy

Because You Leave a Film

All Statements Approved by High Dental Authorities

Teeth Are Ruined by It

This is why the daily brushing so often fails to save the teeth.

The cause of most tooth troubles is a slimy film. You can feel it with your tongue. It clings to teeth, enters crevices and stays. Ordinary brushing methods do not end it. So, month after month, the film remains and may do a ceaseless damage.

That film is what discolors—not the teeth. It is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea—a common and serious trouble.

Now a Way to Combat It

These facts have been known for years, but dental science found no way to effectively combat film. Now that way is found. Able authorities have proved it by careful tests. Leading dentists all over America are urging its adoption. And millions of teeth are now cleaned daily as they never were before.

The method is embodied in a dentifrice called Pepsodent. And to spread the facts, a 10-Day Tube is being sent to everyone who asks.

Based on Active Pepsin

Pepsodent is based on pepsin, the digestant of albumin. The film is albuminous matter. The object of Pepsodent is to dissolve it, then to constantly combat it.

The way seems simple, but for long it seemed impossible. Pepsin must be activated, and the usual agent is an acid harmful to the teeth. Now science has discovered a harmless activating method. And now active pepsin is embodied in an ideal tooth paste, modern in every way.

The results are quick and apparent. One sees at once that Pepsodent means whiter, safer teeth. Make this ten-day test in your own home, in justice to yourself.

Pepsodent PAT.OFF. REG. U.S.

The New-Day Dentifrice

A scientific film combatant now advised for daily use by leading dentists. Druggists everywhere are supplied with large tubes.

See What Ten Days Will Do

Send the coupon for a 10-Day Tube. Then note how clean the teeth feel after using. Mark the absence of the slimy film. See how teeth whiten as the fixed film disappears. Compare your teeth in ten days with your teeth today. Then decide for yourself what is best. Cut out the coupon now.

Ten-day Tube Free (349)

THE PEPSODENT COMPANY,
Dept. 184, 1104 S. Wabash Ave.,
Chicago, Illinois

Mail 10-Day Tube of Pepsodent to

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From FACTORY to YOU

Avoid delays and avoid paying an extra profit, by getting

Vapor Tight Piston Rings

straight from our factory. We manufacture all sizes--*and sell direct to users, at factory prices.* Two VT Rings to a piston prevent any leaking in cylinders--and produce the maximum compression.

Order *NOW*--giving cylinder diameter and exact width and depth of grooves in pistons; or write for our new descriptive Circular--we send it FREE.

Vapor Tight Ring Co.

Box 1772-G Minneapolis, Minn.

Three Questions Answered.

1. Is there any practical way of keeping birds from destroying berries without shooting them
2. Will you give the comparative values of horse, cow and sheep manures as a fertilizer?
3. Are coal ashes a benefit or detriment to the soil?—J. C. Mc., Wyoming.

1. We know of no good way to get rid of birds except by shooting or poisoning. Scare crows are sometimes used but they are effective only in keeping away smaller birds.

2. The following table gives the chemical analyses and value per ton of manure of the three classes of animals mentioned. From this table you will see that sheep manure is considered to be worth much more than that of either horses or cows, because of the higher percentage of nitrogen, phosphoric acid and potash contained therein.

	Water Per Cent.	Nitrogen Per Cent.	Phosphoric Acid Per Cent.	Potash Per Cent	Value Per Ton.
Sheep	59.52	0.768	0.391	0.591	$3.30
Cows	75.25	.426	.290	.440	2.02
Horses	48.69	.490	.260	.480	2.21

3. Coal ashes have no fertilizing value and would be a detriment to most any soil to which they are applied.

Good Marketing Service.

Answer to inquiry from J. S. J., Las Animas county, Colo., referred to the Colorado Office of Markets:

We have before us your letter of February 4 requesting the names of firms to whom to ship your alfalfa hay. It is noted that you have several carloads of alfalfa ready for shipment. We assume from this statement that the hay is baled and ready for loading on cars. We are enclosing herewith a copy of our Colorado Market Reporter issued under even date. On page 3, column 1, under market quotations on alfalfa, you will note that Denver dealers are paying $24 to $26 per ton for standard grade alfalfa delivered Denver. You will also note that a few dealers quote standard grade alfalfa at $22.50 f. o b. car Colorado common points. In case you decide to ship to the Denver market, may we suggest that you get in touch with the following Denver hay dealers:

Harrington Merc. Co., 2000 Market St.

Ady & Crowe Merc. Co., 1900 15th St.

F. C. Ayres Merc. Co., 20th and Wazee Sts.

J. D. Best & Co., 1630 19th St.

Empire Feed & Fuel Co., 1628 19th St.

We understand that Kansas City on January 31st was quoting standard grade alfalfa at $30 to $36.50 per ton. We are advised that the carload rate on baled alfalfa from Aguilar, Colo., which we believe will be your shipping point to Kansas City, is $6.80 per ton. Your rate from Aguilar to Denver on baled alfalfa will be $3.80 per ton. Should you decide that it will be more profitable for you to ship your hay to the Kansas City market you should also figure on a commission for selling by Kansas City hay dealers of 75 cents per ton. We understand that the Kansas City Hay and Grain Exchange now has under consideration the matter of charging $1 per ton for selling alfalfa hay, although we do not believe that this additional charge has been put into effect officially.

Kansas City, as you know, is the key hay market of the country and hay shipped to this market is sold largely on the consignment basis. Cars are sidetracked and broken open and buyers are allowed to enter and inspect the hay. The hay is usually sold to the highest bidder. Kansas City maintains an inspection service on alfalfa, and should you ship to this market your hay would be sold on the grade named by the inspector. The Denver Hay and Grain Exchange also maintains an inspection service on hay, and should you ship to Denver hay dealers who are members of this exchange, your hay will be given a so-called "side door" inspection and will be sold on the grade named by the inspector.

Following is a list of Kansas City hay dealers, in case you decide to ship to this market:

McCune-Moore Co., Kansas City Mo.

North Brothers, Kansas City, Mo.

National Hay Company, Kansas City, Mo.

Carlisle Commission Company, Kansas City, Mo.

Dyer and Company, Kansas City, Mo.

It is generally impracticable to give a complete list of dealers, and in furnishing a partial list in an effort to aid you, it should be understood that no discrimination is intended and no guarantee of reliability implied. We will appreciate being advised of your success in marketing your hay. If we can be of any further service in this connection, please do not hesitate to call upon us.—Stuart L. Sweet, Field Agent in Marketing.

VETERINARY ADVICE

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Pig Has Rheumatism.

Answer to G. M. S., Douglas county.

The gilt is probably affected with rheumatism, which is more common with hogs than other farm animals. If there were soreness of the feet from foot-rot, or other disease, we should expect some swelling of the legs. The causes of rheumatism are many and cures are uncertain. Keep the pig on the ground and not on plank or cement floors. Avoid conditions which will permit the pig to become overheated in the pen. A straw stack is the worst possible place for pigs to sleep. They come out steaming hot, and when the weather is cold are quite sure to become chilled and contract pneumonia or rheumatism. It may be well to have your local veterinarian prescribe treatment according to conditions— G. H. G.

Tumor from Wire Cut.

I have a 3-year-old filly which has a wart on one front leg just below point of shoulder. It began to grow about a year ago and now is five or six inches in diameter. It came over wire cut; could it be removed?—C. L. J., Custer county, Colo.

The tumor coming at the seat of a wire cut precludes the probability of its being an ordinary wart. It may be malignant and it may not; this can only be determined by sending a piece of the tumor to the laboratory for examination. If it is a warty growth it may be excised or treated daily with castor oil. If malignant it will continue to grow and would probably recur if removed. Removal of the tumor would be attended with considerable danger from hemorrhage. If its removal is undertaken it had better be done by a competent veterinary surgeon.—G. H. G.

Abscesses in the Jaw.

I am having a peculiar trouble with my cows. Lumps or swellings come on their jaws, or around their throats. Sometimes when the cow coughs the lump will break and run. Some show swelling on the side of the jaw or throat resembling distemper in a horse.—E. P., Las Animas County, Colo.

The abscesses on the heads of your cows are no doubt caused from eating barley straw, foxtail grass, three-awned grass, porcupine grass, downy bromegrass. All are mechanically injurious if contained in the hay. The chances are that it is either the awns of barley or foxtail. Remove the cause immediately. Open the abscesses as fast as they form and clean them out with the fingers and by injecting a warm antiseptic solution.—G. H. G.

Depends On Terms of Lease.

Let me know how long a person can remain in a store after receiving notice to vacate the place.—D. P., Las Animas county, Colo.

It depends on whether the store is being rented by the month or under a written lease covering a longer period. If rented by the month you would be entitled to 30 days' notice to vacate.

Seeds Tested Free.

I have some grain that I wish tested for seed. Will the Agricultural college make this for me and what are the charges for same?—C. C., Teller county.

If you will send one half pound samples of all grain you wish tested to the State Seed Laboratory, Ft. Collins, Colo., the test will be made for you free of charge.

Hearty Praise from Cleveland Six Owners

The Cleveland Six will dominate the light car field because it is so much better. It will lead because it gives so much more in smooth-flowing power, in ease of riding, in style and quality, than other light cars. Thousands of Cleveland Sixes are on the road right now, performing in every sense and in the last degree right up to expectations.

Dealers demanding much have driven Clevelands thousands of miles across country, over every kind of roads, putting the car to every conceivable test. And they say there is no other light car like it. No other that will do so much and do it so well and so economically.

Cleveland owners are enthusiastic about its ease of driving. "It handles like a feather," "You can drive it with one finger." "It just almost steers itself." These and hundreds of other phrases of praise come from enthusiastic Cleveland owners.

"It steps out as fast as any car that was ever built." "The speedometer slips around to forty or fifty before you know it." "There's practically no vibration." "It fairly glides over sharp hills and long mountain climbs." Cleveland owners tell us all these things and they will tell you if you ask them.

"It's a regular automobile." That's the answer of everyone who knows the Cleveland Six.

To really know and appreciate the Cleveland, to understand all that we mean when we say it is so much better, you must *ride in it* and *drive it*.

MODELS AND PRICES

Touring Car (Five Passenger) $1385
Roadster (Three Passenger) $1385
Sedan (Five Passenger) $2195
Coupe (Four Passenger) $2195
(All Prices F. O. B. Factory)

There are Cleveland Six dealers in more than a thousand cities and towns. There is one where you live, or nearby. Arrange to see the Cleveland. Catalogue mailed on request.

CLEVELAND AUTOMOBILE COMPANY, CLEVELAND, OHIO

$1385

One Fault, Doesn't Come Often Enough

Willard, Colo., Dec. 22, 1919.

Western Farm Life, Denver, Colo.:

Gentlemen—Am sending one dollar for a renewal of my subscription to Farm Life for two years. Like the paper fine. It's a dandy. The only fault I see about it is it doesn't come often enough.

Wishing you a Merry Christmas and a Happy New Year, I remain, as ever,

Your subscriber,
J. H. IRVIN,
Willard, Colo.

Don't Want Western Farm Life Stopped.

Sandy, Utah, Feb. 2, 1920.

Western Farm Life, Denver, Colo.:

Dear Friend: No, indeed, I do not want to stop it. I think it is the best farm paper I ever had. It has such good advice in it.

Please add the R. F. D. number and the number of the box to my address for I lose some of the issues because there are other Jones's around here. I do not want to lose one of them; they are too valuable. I remain,

Yours truly,
ROBERT JONES,
Sandy, Utah.

WESTERN Farm Life

A WESTERN MAGAZINE FOR WESTERN FARMERS AND STOCKMEN

DENVER, COLO.

To All Subscribers of Western Farm Life:—

I warn you not to be caught unprepared! Uncle Sam says you must make out and have ready your income tax report by March 1st, 1920. Penalties await those who do not obey. To relieve you of a great deal of the worry and bother, I have secured 1350 sets of the "Simplicity Income Tax Service."

This service consists of the following:

The Simplicity Farm Record, a 68-page record book, with space for every transaction on the farm, with instructions so simple and clear that you can keep the most accurate account.

The Farmer and the Income Tax, or, 59 Points Made Clear, a book by C. B. Stiver, Tax Expert, explaining every detail of the income tax law, in language all can understand.

The Tax Question Blank, a legal form containing the questions you will have to answer before making out your tax return.

If any point of the income tax law is not clear to you and you will write to our Free Service Bureau we will send you an answer by return mail, without cost to you.

Subscribers who have used the Simplicity Income Tax Service say they would not be without it.

I am going to make you two propositions on these books.

First: Send me one dollar and I will credit your account two full years ahead and send you free "Simplicity Income Tax Service" set, two books and question blank, postpaid.

Second: Get some friend to subscribe for WESTERN FARM LIFE for two years for one dollar, send us his name with the dollar and I will send you "Simplicity Income Tax Service" set, free and prepaid.

I only have 1350 sets and no more can be secured for this purpose under a prohibitive price. So it's a case of first come first served. Don't take any chances; be prepared; send me your order NOW.

Thanking you, I am
Very truly yours,

H. H. Johnston
Publisher.

FREE with a new or renewal subscription to Western Farm Life, a complete SIMPLICITY INCOME TAX SERVICE SET, consisting of Farm Record Book, Income Tax Question Blank and The Farmer and The Income Tax Book. This entire set will be sent FREE and prepaid with a two-year subscription to Western Farm Life. New or renewal subscription. The subscription price of Western Farm Life is two years for $1.00.

Wants Another for This Year.

Alamosa, Colo., Jan. 24, 1920.

Western Farm Life:

Dear Sir—We are so well pleased with the "Simplicity Income Tax Record Service" we got of you last year that we would like to get another.

If you have one let me know and I will send the money. Yours truly,

HENRY JONES,
Alamosa, Colo.

Milking Shorthorn Exhibit.

The feature of the Milking Shorthorn show was the increase in number and quality which has been constant since its inception three years ago. The grand champion bull, Lee Buttercup, shown by Bonvue Farms, is a son of Charlotte B, with a record of 15,145 lbs. of milk in one year and an eight-year average of 10,118 lbs., which was a world's record when made. Victoria, the cow winning first in the Record of Merit class has just completed a record of 15,175 lbs. This record is said to be exceeded by only two living cows of the breed.

Another feature of the show was the get of Duke Glenrose, chief herd bull of Bonvue Farms, but now under lease to Pine Valley Farms. The four animals sired by this bull were each one a first prize winner in class. One was junior champion cow and another junior champion bull. The six nearest dams of Duke Glenrose averaged on official test 11,517 lbs. of milk, and the fact that the young things sired by him were such consistent prize winners speaks well for the future of the herd in which he is used.

Wyldemere Farms, Littleton, had a very excellent exhibit, especially in view of the fact that this establishment has been breeding Milking Shorthorns but a very short time. They were quite successful in the show ring.

Bonvue Farms showed five females in milk in the various classes, four of which have qualified with a record of merit under class "A."

Finley McMartin of Claremont, Minn., entered his herd, but conditions at home made it impossible for him to send them. This was a great disappointment to the Colorado exhibitors who would welcome a chance to measure their progress against some of the well known eastern herds.

The Milking Shorthorns were judged by R. A. Cook of Independence, Iowa, secretary of the American Milking Shorthorn association, whose work gave satisfaction to all the breeders. Mr. Cook said that the showing of dual purpose cattle was larger than that at either the Iowa or Minnesota state fairs last fall. He expressed surprise at the size and quality of the herds entered. The awards follow:

Bull, 3 years old or over—1st, The Bonvue Farms Co., Denver, Colo., on Lee Buttercup.

Bull, 2 years and under—1st, The Pine Valley Dairy and Farms Co., Colorado Springs, Colo., on Roan Prince; 2nd, J. B. Benedict, Littleton, Colo., on Baron Bates.

Bull, 1 year old and under—1st, H. Bert Cave, Littleton, Colo., on Glen Buttercup; 2nd, J. B. Benedict, Littleton, Colo., on Royal Glenside; 3rd, The Otis Herd, Willoughby, Ohio, on Prince Broadhooks.

Senior bull calf—1st, M. L. Wight, Elizabeth, Colo., on Kirklevington's King; 2nd, The Otis Herd, Willoughby, Ohio, on Favorite Duke; 3rd, J. B. Benedict on Wyldmere Marquis.

Junior bull calf—1st, Bonvue Farms Co., on Bonvue Royal Sharon; 2nd, Pine Valley Dairy & Farms Co., on Pine Valley Welden; 3rd, Pine Valley Dairy & Farms Co., on Pine Valley Clay.

Cow, 5 years old or over—1st, Pine Valley Dairy & Farms Co., on Blue Bell; 2nd, Bonvue Farms Co., on Pioneer Princess; 3rd, Bonvue Farms Co., on Oxford Annie.

Cow, 3 years old and under 5—1st, Bonvue Farms Co., on Raindrop; 2nd, Bonvue Farms Co., on Lady Premier; 3rd, Pine Valley Dairy & Farms Co., on Pine Valley Countess.

Cow, 2 years old and under 3—1st, Bonvue Farms Co., on Auriole Oxford; 2nd, Benedict, Littleton, on Unis 5th; 3rd, J. B. Benedict, on Rose Claywood.

Senior yearling heifer—1st, Pine Valley, on Duchess Clay; 2nd, Bonvue Farms on Cressida Queen; 3rd, Bonvue Farms Co., on Princess Beauty.

Junior yearling heifer—1st, The Bonvue Farms Co., Denver, on Bonvue Annie; 2nd, The Pine Valley Dairy & Farms Co., on Roan Duchess; 3rd, The Bonvue Farms Co., on Caroline.

Senior heifer calf (6 shown)—1st, The Pine Valley Dairy & Farms Co., Colorado Springs, Colo., on Roan Clara; 2nd, J. B. Benedict, Littleton, Colo., on Wyldemere Snow Drop; 3rd, The Bonvue Farms Co., Colorado Springs, on Bonvue Honora.

Junior heifer calf—1st, The Bonvue Farms Co., on Bonvue Princess Clay; 2nd, J. B. Benedict, Littleton, on Wyldemere Princess; third, The Bonvue Farms Co., Denver, on Bonvue Abbie, 4th, The Pine Valley Dairy & Farms Co. on Pine Valley Daisy; 5th, The Pine Valley Dairy & Farms Co., on Pine Valley Maid; 6th, J. B. Benedict, Littleton, on Wyldemere Daisy.

Aged herd—1st, The Bonvue Farms Co., Denver, Colo.; 2nd, The Pine Valley Dairy & Farms Co.

Young herd—1st, Bonvue Farms Co., Denver, Colo.; 2nd, Pine Valley Dairy & Farms Co., Colorado Springs; 3rd, Bonvue Farms Co., Denver.

Calf Herd—1st, Bonvue Farms Co., Denver; 2nd, Pine Valley Dairy & Farms Co.; 3rd, Bonvue Farms Co.

Two animals, either sex, produce of one cow—1st, Bonvue Farms Co., Denver, Colo.

Senior champion bull, 2 years old or over—The Bonvue Farms Co., Denver, on Lee Buttercup.

Junior champion bull, under 2 years old—H. Bert Cave, Littleton, Colo., on Glen Buttercup.

Grand champion bull, any age—The Bonvue Farms Co., on Lee Buttercup.

Senior champion cow, 2 years old or over—The Pine Valley Dairy & Farms Co., Colorado Springs, Colo., on Blue Bell.

Junior champion heifer, under 2 years old—The Bonvue Farms Co., Denver, on Bonvue Princess Clay.

Grand champion cow or heifer, any age—1st, Pine Valley Dairy & Farms Co., Colorado Springs, Colo., on Blue Bell; 2nd, Bonvue Farms Co., Denver, on Bonvue Princess.

Record of merit cow—1st, Pine Valley Co., on Victoria; 2nd, Bonvue Farms Co. on Raindrop.

Swift & Co. special for best exhibit of Milking Shorthorns, won by Bonvue Farms Co.

Handling Sandy Soils.

Most everyone knows that sandy land blows more or less badly. Accordingly, there has developed a practice of not plowing sandy lands in the fall, leaving some kind of a stubble or vegetative covering on the land in order to protect it from blowing. Often, however, it would be of advantage to give some kind of fall tillage. So many inquiries have come to Colorado Agricultural College, asking what might be done in the way of fall preparation and still not encounter the serious dangers from the soil blowing in the winter, the question was put up to Alvin Kezer, Agronomist of the Experiment Station, who replied:

"Much of the sandy land cannot be safely fall plowed because in our dry, windy climate the land is likely to be badly damaged by blowing, as unprotected plowing on sandy lands blows badly in the winter and spring. If it were not for this blowing, fall plowing would be of a great deal of benefit, in that it would kill weeds, stop the weeds taking moisture from the soil, put the soil in better shape for catching fall and winter moisture. It is possible to get practically all the benefits of plowing and almost completely stop the blowing by breaking out the land with the lister in the fall. If it is possible to do so, the listed rows should run crosswise the prevailing direction of the winds. This listed land can be middle broken in the spring and worked down into a seed bed for other crops. It will almost completely control blowing. It catches rains practically as well as plowed land and catches snows very much better. It is possible to practically control sandy lands blowing by furrows crosswise the prevailing direction of winds spaced at proper intervals on lands where the entire surface is not listed."

State Is Selling Trees.

The State Forester, Fort Collins, Colorado, offers for sale at cost to the people of the state 30,000 small ornamental trees grown under contract by the United States Forest Service in government nurseries at Halsey, Nebraska, and at Monument, Colorado, for delivery this spring.

Last year 76,000 trees were sold in small lots, usually 50 or 100 to a purchaser, chiefly in the non-irrigated portions of eastern Colorado. This year a smaller supply is available.

Each purchaser agrees to report annually during several years regarding the results obtained in order that the possibilities of these species for use in various parts of the state may be learned. Orders accompanied by remittances will be received up to March 15. The following is a description of the stock and prices:

Deciduous trees—(in lots of 25) American Elm from 20 cents to 60 cents according to size; honey locust, from 25 to 90 cents; black locust, 20 cents; Russian olive, $1.15 to $2.00; ash, 50 cents. In lots of 100 the trees may be had for approximately twice as much as for lots of 25, thereby paying the purchaser to order larger lots.

Evergreen trees—(In lots of 25) Western yellow pine sells for 65 cents. Jack pine sells for 75 cents. For lots of 100 see above.

The country's biggest rancher—what he thinks about the packers

Robert J. Kleburg is manager of the "Million Acre Ranch" in Texas. He keeps about 40,000 breeding cattle. The following is from his remarks made recently before a committee:

"Their (the packers') business prospers most when they have an ample and regular supply of live stock from which to draw.

"It therefore follows, as a matter of course, that it is to the interests of the packers to foster, not to hamper, live stock production. In order to do this they must pay the producer of live stock a fair price for his products, so that he, the producer, may be enabled to stay in business.

"I therefore contend and believe that the producer of live stock who conducts his business properly has nothing whatever to fear from the packers. He needs the packers to prepare his product for the market and to distribute it.

"Without the aid of the packers the production of live stock could not exist as an industry.

"I can well remember when there was no real market for live stock in the part of the country in which I lived—southwest Texas.

"In those days we drove the steer to the butcher's pen. The butcher would slaughter him, throw away the head, horns, hoofs and other offal, and give the producer credit for so much meat at his shop. All of this waste is now saved and marketed. * * * *

"I believe that when a business is as big as the packers' business, that business has to be conducted properly and on business lines and on principles of fairness to the public.

"I do not believe they can afford in their own interests to conduct their business in such a way that it injures the great mass of people with whom they do business. * * * *

"Nor do I believe that the packer can control the law of supply and demand."

Swift & Company, U. S. A.

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The Wild Oats Menace.

ild oats constitutes one of the prin- weed seeds in dockage of Colorado at. During the pure seed campaign ounty agents were asked this ques- "What constitutes the chief dock- in wheat in your county?" Prac- ly every one gave "wild oats" as the answer. It is particularly prevalent in those sections where it is the practice to plant grain on the same piece of land several years in succession.

There is an erroneous opinion held by some that tame or cultivated oats may, under certain conditions, become "wild." Cultivated oats and wild oats are distinct species, and it is as impossible for cultivated oats to change into wild oats, as it is for the house cat to give birth to wild cats. If wild oats plants make their appearance in the field be assured that they grew from wild oat seeds.

The wild oat plant has slender stems, which are long, and hence it usually stands above the cultivated oats, and as a rule shatters its seeds before the small grain crop. The beards attached to the back of the "seed" are strongly bent, thus differing from common oats. Again it is distinguished from the latter by the "sucker-mouth" at the base of the "seed."

Wild oats is an annual plant and propagates entirely by seed. The most ommon way in which wild oats is introduced into a community is by means of impure seeds. A few wild oats seeds in a sowing may, in several years, cause serious damage. Irrigation water is an important factor in the dissemination of the seed. Wild oat seeds will live in the soil from two to six years. They do not, as a rule, germinate until the season following their ripening.

Some of the chief precautions to be observed in controlling wild oats are as follows:

1. Do not plant grain on the same field year after year. This is the principal reason for heavy infestations with wild oats.

2. Do not "stubble in" grain; that is, do not disk—harrow all stubble fields and drill in the grain without further preparation. Wild oats is bad under this system.

3. Do not cut badly-infested fields of grain for hay, unless it is done prior to the time of ripening of wild oats; otherwise wild oats seed will be distributed in manure.

4. Do not feed screenings containing wild oats, unless they are first thoroughly ground to destroy the seeds.

5. Do not use seed which has any wild oats seed in it. Have a purity, as well as a germination test, made of every lot of wheat planted.

There are a number of makes of fanning mills and wild oats separators which will, if properly operated, remove wild oat seed from wheat seed.

6. Establish a seed plot on each farm or community setting aside sufficient acreage to produce the seed for next year's crop. Pull the wild oats and other weeds by hand. It is worth while.

7. Induce germination of seeds in the ground and destroy the seedlings before they reach any size.

8. The most feasible and practical method of wild oats eradication is one which involves the use of alfalfa or intertilled crops or both in the rotation. In these sections where wild oats is prevalent, it has seldom failed to disappear before a proper system of crop rotation.

9. Mow weeds along roadsides, and along ditches.

10. Organize to secure community action.

The following method of control has given good results: Plow in the fall and harrow the following spring to induce the germination of wild oat seeds. Plow the young plants under, prepare the seed bed, and plant to a quick-maturing crop like barley, millet, or Sudan grass. These crops will tend to smother the wild oats plants. Follow harvesting with plowing, and the next spring, harrow to induce seed germination, then plow under the young plants and sow a cultivated crop. The sugar beet is an excellent crop with which to combat wild oats, because there is so much hand work.—W. W. Robbins.

Beet Tops for Silage.

Many beet growers contend that beet tops are worth from $10 to $12 an acre when grazed. Where the beet grower does not have stock to utilize the pasturage it is common to sell the tops to stockmen at from $3 to $6 per acre, or even higher. In the absence of complete data from well-defined experiments in feeding beet-top silage, the U. S. Department of Agriculture cites the experience of several careful feeders as indicating the genuine value of this by-product of the sugar beet field. One large cattle grower reports that the shipping "shrink" on cattle fed and "finished" by using beet-top silage as a generous part of the ration, is not greater than the "shrink" commonly had with cattle that are fed and finished with grain, alfalfa and concentrates.

Persons who have not used beet-top silage are cautioned to feed it lightly at the start. It is also important that moldy silage found on or near the surface or sides of the silo be carefully removed and destroyed, as such food is even more dangerous than moldy hay or straw.

The essentials involved in making good beet-top silage are substantially those necessary to making good corn silage. The mass should be packed thoroughly to exclude air and then sealed air-tight. It is not necessary to run the tops and crowns through the silage cutter, though some feeders prefer to do so to avoid the possibility of choking animals on the crowns.

The average cost of gathering the tops and piling, packing and finishing the silo is approximately $1 per ton. As a preliminary step it is particularly important that the tops be gathered and put into small piles promptly after the beets are topped, and that the dirt and sand be removed. This can be easily done by shaking the tops well while the leaves are fresh.

A structure commonly used for putting up corn silage is entirely suited for beet-top silage. Because the beet tops pack very densely the structure may sometimes crack under the pressure and thus allow air to enter. However, a silo well built is reasonably safe. If one does not have an ordinary silo, cash outlay is not necessary to make beet-top silage, for a natural earth silo can be used quite satisfactorily. The earth pit which can be quickly made by the use of a team or scraper should be deep and narrow instead of wide and shallow. Under certain conditions concrete side retaining walls are advisable for such storage places, but ordinarily the earth sides and bottom covered with straw have been found satisfactory. When the natural earth silo is used special care is necessary in packing, and, after filling, the top should be covered with beet pulp or earth to exclude the air.

Pulp, another by-product, is the fibrous mass that remains after the saccharin matter has been removed from the sliced beets commonly called "cossetts." The best way for the grower to store a portion of this pulp for winter feeding is to spread it on top of the beet tops in the silo. This effectually seals the silo and prevents the silage mass from freezing. At the same time the heat from the silage warms the pulp, thereby hastening its curing and rendering the pulp as well as the silage excellent for stock feeding.

Silage is not a balanced ration, but, being a carbohydrate feed, it goes well with alfalfa hay which is rich in protein. Fermentation in the silo corrects the cathartic salts in the beet tops and crowns. The best feeding practices show that the beet-top silage reduces hay requirements one-half in feeding for beef or mutton or milk production. Beet tops will increase the flow of milk with ewes at lambing time. It is best to start feeding only about one pound per head per day and gradually to increase to about three pounds per day. —U. S. Department of Agriculture.

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Company Offers Flat Rate.

The Great Western Sugar company has announced that it will pay a flat rate of $12 a ton for beets grown in 1920. Coupled with this announcement was the decision to pay a bonus of $1 per ton for each ton of beets delivered out of the 1919 crop. The increase in price for next year is at the rate of $2 per ton, and the bonus means that the entire 1919 crop will be paid for at the rate of $11 instead of the contract price of $10.

The Mountain States Beet Growers' association, as stated in the January 1 issue of Western Farm Life, asked a sliding scale based on the seaboard price of sugar, with $10 as the minimum, with sugar at 7 cents seaboard basis and an increase of $1.50 per ton for beets for every cent added to the price of sugar. This plan was devised in an effort to have the grower share with the sugar company any increase in sugar prices and keep the retail price at a fair figure to the consumer. The following explanation of the sugar company's position is taken from an open letter to beet growers, issued by President W. L. Petrikin of the Great Western Sugar company:

"The company cannot help but feel that the basis of payment proposed by the Beet Growers Association was arrived at without complete information about all the factors involved. In particular, we want to point out that the price of $10 per ton which the company was asked by the Federal Food Administration to pay for the season of 1918 was coupled with the explicit promise by the Food Administration to allow a higher price for the sugar to be produced than the then prevailing price of 7 1-4 cents per pound, providing an investigation warranted such action. It is a fact that the Food Administration, after an investigation of the situation, did not consider a 7 cent price for sugar was a fair compensation with beets at a price of $10 per ton, and accordingly fixed a price of 9 cents per pound for that season's sugar. Neither does the Great Western Sugar company believe it possible to pay a price of $10 per ton for beets when sugar sells at seaboard at 7 cents per pound.

"Considering the uncertainty of the sugar market, the company considers that the interests of the growers and the company are better served when a sufficiently high 'flat rate' price is offered. Under such circumstances the board of directors has decided to offer for the season of 1920 a flat price of $12 per ton for beets. In addition to that, it has been decided that the company will pay $1 per ton additional for all beets grown and delivered during the season of 1919. As explained to the delegates of the Beet Growers association at the meeting on January 16, the decision to pay an additional $1 per ton on the past season's crop was arrived at after a very careful consideration of the whole situation. This payment is made possible by the fact that the unmarketed portion of the sugar production of the 1919-20 campaign can now be sold at sufficiently higher prices above what the Department of Justice has heretofore allowed to provide the means for the additional payment to the farmers. Our information convinces us that such action is fully justified in view of the unfavorable crop conditions which prevailed kin, President.

A Corn-Husking Bee.

The corn-husking bee held at Fruita, Colorado, in November was carried out through the Farm Bureau corn project leader of that community committee.

A number of farmers in the community were each asked to bring in a half bushel of snapped corn with the husks still on, and, at about 8 o'clock the farmers and their wives began to arrive with the corn and a plentiful supply of cider and doughnuts.

The corn was all dumped in a big pile in the middle of the room—except the red ears, which were kept to themselves for a very definite purpose later in the evening. Two teams were then chosen consisting of two ladies and four men each. These teams were then lined up facing each other and about four feet apart. As the signal was given, each member of the teams was required to go to the big pile of corn, pick out a certain number of ears and return to his or her particular place in the team, placing the corn directly in front.

As soon as the last member of the team was in place the entire team started to husk, and, if you don't think they were in earnest about husking—well, you should have seen them. It reminded one of a hungry shote grabbing a bite from one ear of corn, then rushing madly to another for fear some of the other hogs would beat him to it.

Following this, A. E. McClymonds, crop specialist of the Agricultural College at Fort Collins, gave a short demonstration talk on the proper type of ear to select for seed, and a large amount of the husked corn was covered up with husks between the two competing teams, which were still facing each other. At a signal from Mr. McClymonds, all began to dig in the husks for an ear closest to the type he had shown. Prizes were given to the winners in these events.

Next the scene of activity turned to the younger folks present. Four teams, of one boy and one girl each, were selected, and competed in stringing up seed corn for winter storage. The strings were prepared and the boys held them while the girls were each required to place ten ears one above the other, crossing the strings over each other.

The last event concerned the red ears, these having been buried deep in the original pile of corn in the meantime. These four teams of young folks were turned to the pile to find the coveted prizes. The finder of it, if it was a girl, had to pay the penalty to her partner, while if it was a boy he had his choice of all the pretty girls in the house. The first to find a red ear was a young lady, who instead of acting according to the rules of the game, threw her ear wildly into the other corner of the room and sought safety behind the elderly ladies of the crowd.

This was the last event, and following it, Mr. McClymonds gave a short talk on corn improvement, referring especially to the work that had been done on the eastern slope.—L. P. McCann, County Agriculturist, Mesa County, Colorado.

Cost of Beet Production.

The statement was made in a previous issue of Western Farm Life, in the course of a report on the proceedings of the Colorado Farmer's Congress, that Northern Colorado beet growers paid $4 for the privilege of raising sugar beets during 1919." This was based on average production and gross return per acre for beets at the rate of $10 a ton, the cost of production figures being given out by the agronomy department of Colorado Agricultural College. The northern Colorado yield was cut down by water shortage in 1919 to a point considerably below normal. Beet growers will be interested in the complete figures on cost of production, as given out by Prof. Alvin Kezer, chief agronomist at the college:

Items entering into costs—	Hours Man Labor	Hours Horse Labor
Ditch upkeep	3.7	11.7
Miscellaneous work	5.0	11.7
*Manuring	18.0	37.6
Plowing	8.7	33.6
Harrowing	1.5	0.6
Leveling	1.1	4.5
Rolling	0.7	2.6
Planting	0.8	1.7
Breaking crust	0.4	0.4
Cultivating	4.8	9.6
Ditching	0.8	1.6
Irrigating	6.4	...
Pulling	5.1	20.4
Hauling	13.6	45.9
Total labor	70.6	173.2
15 pounds seed @ 10c		$ 1.50
Hand labor (contract)		25.00
**Rent of land		25.00
70.6 hours man labor @ 35c		24.71
173.2 hours horse labor @ 12c		20.78
Total cost		$96.99
Items omitted:		
Machinery costs (interest, depreciation, repairs)		$4.80
Miscellaneous small items		2.20

*No charge is here made for the manure.

**The overhead on farmstead buildings and equipment is covered under rent.

Winter Meals From Your Summer Garden.

IN the cold winter, when canned or fresh vegetables are so expensive, how fine it is to be able to go to the fruit closet and select a jar of home-canned beans, peas, beets, carrots, sweet corn, etc.

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Care of Dairy Utensils.

All Colorado cream producers are interestd at this time in the methods that will make their cream score first grade. In justice to the butter consumer, the recent grading law put into effect in Colorado is exactly right. There are many dairymen who have always produced good cream, but the law was necessary because so many others brought in cream that lowered the standard of the good cream and thereby the grade of butter produced. The best way to handle the problem of sanitation is to begin with the dairy itself. Of course, everyone realizes that dirt and filth should be kept out of all food so far as is physically possible, and nothing need be said on that score. However, one point often overlooked is the importance of keeping the dairy utensils clean. It is a task that requires some careful work. As soon as the milk has been taken care of, the utensils should receive immediate attention before the milk is dried on them. It is a great help to rinse the milk things first with cold water. Then wash thoroughly in moderately hot water, to which a good washing powder has been added. Use a brush so that all crevices may be reached and finally rinse in scalding water, or set over a steam jet until the heat penetrates thoroughly.

A sunning rack built on the side of a building is a fine thing where the dust will not blow in. This treatment tends to kill all filth germs that may have escaped the washing process.

A word about the cream separator. It is often the case that there is so little milk separated that in the evening after a hard day's work, one is tempted to flush out the bowl with a little water and let it go at that until the next morning. We have all done it, but nevertheless it is an unwise practice. The milk dries in the crevices and by morning the machine cannot skim as accurately as it should. From the sanitary standpoint, it is still more undesirable. The morning's milk in running through the machine is sure to become contaminated with germs that are certain to be present. For these reasons, it is wise to wash the separator after each skimming.—H. A. L.

Feed Cost of Raising Heifers.

The importance of providing cheap feed for growing heifers and practicing thorough culling is brought out by the results of feeding experiments recently completed by the Dairy Division, United States Department of Agriculture. In these experiments groups of calves were fed from birth to one year and two years of age and a record kept of all fed consumed.

In one experiment, 11 heifer calves were raised to the age of one year. The amount of feed consumed by each calf was as follows: hay, 571.8 pounds; grain, 885.5 pounds; silage, 3,693.1 pounds; milk, 110 pounds; skim milk, 2,414 pounds. Estimating the hay at $30 per ton, grain at $60, and silage at $8 per ton, milk at 4 cents and skim milk at ¾ cents per pound, the cost of raising each heifer to one year of age was $72.42.

Five of the calves from the first experiment were then fed for one more year. During this second year each calf consumed on the average 1,117.8 pounds of hay; 1,221.6 pounds of grain; 8,031 pounds of silage. Using the same figures for computing the cost of the feeds consumed during this second year, the total cost of raising a heifer from birth until two years of age was $157.96. These figures emphasize the necessity of providing cheap feed for heifers such as pasture and silage, and bring out the importance of carefully culling the heifers to avoid raising those which will prove to be inferior cows.

Amount to Feed Dairy Cows.

Too many cows are underfed. A cow weighing 1,000 pounds needs each day, for the maintenance of her body, an amount of food equivalent to that supplied in 8 pounds of clover hay and 20 pounds of good corn silage, according to M. H. Keeney of the University of Missouri College of Agriculture. She must have this food regardless of whether she produces any milk. Food used for milk production must be in addition to that required to keep the cow's body. A 1,000-pound cow producing 20 pounds of 4 per cent milk a day, if properly fed, devotes about half of her feed to maintenance and half to milk production. Obviously when a dairyman has gone to the expense of supplying that half of the food required for maintaining the cow's body, it is poor economy to withhold any of the other half, all of which goes to produce milk. A cow then requires feed in accordance to the amount of milk she is able to produce. The heavy producer needs the most feed.

Farm grown roughages (silage, hay, etc.) furnish the cheapest food nutrients. However, a good dairy cow cannot eat enough roughage to supply her needs for milk production. She must have some grain. Therefore, to feed with the most economy, the following rules must be observed:

1. Feed all the roughage a cow will eat. She will eat more if fed three times a day instead of twice.

2. Feed grain in proportion to the pounds of milk produced.

To a Jersey or Guernsey cow, feed one pound of grain for each 3 to 3½ pounds of milk produced. To a Holstein, Ayrshire, or Shorthorn feed one pound of grain for each 4 to 4½ pounds of milk produced.

Farrowing Time.

The hog man should always be on the alert to record farrowing dates on his sows. This information will assist greatly in knowing when to give the sow the proper attention prior to and during farrowing.

The sow should not be too fat at farrowing time, but still should have been fed in such a way to enable her to properly develop her pigs. A strong pig when farrowed stands a far better hance to make a good hog than a weakling. All foods that tend to produce heat or fat should be avoided. Strictly protein feeds such as wheat middlings, bran and oats are best for the brood sow before farrowing.

When the sow begins to make bag, she should be removed from the herd and given access to her farrowing quarters, so that she will become accustomed to them.

The pen provided for the farrowing should be constructed in such a way as to avoid all drafts of air. A concrete floor covered with boards is good. A very good floor may be made by saturating the ground floor of the pen with oil such as crude oil. Use a moderate amount of bedding which is free from dust and chaff. Too much bedding makes a trap for the young pig and may result in its being held and crushed by the sow. The point to bear in mind is to provide a warm dry nest, free from dampness. A fender rail around the nest on the walls is a wise provision. This is made by attaching a 2x6 plank with the edge against the wall about 6 or 8 inches from the floor. This is often a means of saving the young pig from being crushed against the wall when the sow lays down.

As soon as the time draws near for farrowing the sow will usually show a nervous tendency. She should then be placed in the pen and left alone when she prepares her bed.

The attendant should be near and ready to render any assistance should it be required. Some sows are of a nervous temperament and object to having anyone near. In such cases keep out of sight but be in position to watch the small pigs and be sure that their snouts are not covered with mucus, which often cuts off the air and thereby smothers the pig.

It is wise to remove the weakling until the farrowing ordeal is over. One important point to bear in mind is that each pig should be given a chance to draw a little milk as soon as possible. This does more than anything else to start it out in life the right way.

After farrowing is over the sow's feed should be very light for a day or two. Often a little warm water is all that is needed. When the fever is out of her system, usually about the second day, a little bran or middlings slop is good.

Very often the sow has a craving for meat and may eat her pig. This is due to the lack of minerals in the ration prior to farrowing. Something like salt pork or meat cracklings would be of help in case this craving develops.

It is well to remember that the proper care at the farrowing time may be the means of establishing the year's profit in the business.—H. A. L.

Reformatory Buys Durocs.

The Colorado State Reformatory at Buena Vista recently purchased two well bred Duroc Jersey gilts from Geo. E. Morton and Sons of Fort Collins. These gilts carry some very excellent blood and are a valuable addition to the livestock on this farm. Mr. Chas. J. Monyihan of Montrose, who is a member of the state board of corrections is to be commended on his policy of improving the livestock on the state reformatory farm.

One of the gilts mentioned above is Sensation Princess and was first in the futurity and in the open class at Pueblo last fall. She is sired by Montair Sensation, who was a son of Great Sensation. The dam of Montair Sensation was the top sow in Kern's sale, bringing $2,225. His half brother was grand champion at the 1919 National swine show.

This gilt is out of a granddaughter of Orion Cherry King, Jr., who was grand champion boar at the first swine show, and who sold at $6,500 as a six year old. She was bred by Morton and Sons. She is carrying a litter by Edgemoor Cherry Chief, 2nd, who was junior champion at the National Western in 1919.

The other gilt purchased is King's Lady. She was sired by a son of Orion Cherry King, Jr., and was bred by J. W. Brauer of Colorado Springs. The dam was by Illustrator Chief, a son of Illustrator. The gilt was eighth in the 1919 futurity at Pueblo. She is carrying a litter by Montair Sensation.—H. A. L.

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Johnstown Records Smashed.

The Johnstown dairy show has been set for March 11 and 12. This is one of the important events of the year to the dairy industry in Colorado.

The Johnstown Cow Testing Association has done a great deal to build up the dairy industry in this section. Through a careful system of elimination of the low producing cows, the standard of profits in the herds has been materially increased. A report from Roy Curtis, tester for the association, shows the rapid progress the dairymen have made.

Two Johnstown High Producing Holsteins—At the right is Kate, owned by J. W. Whowell & Sons, the cow that produced 96 pounds of milk in one day and 115 pounds of fat in one month, under ordinary herd conditions. At the left, Fannie, a registered Holstein who will finish her year's record in a short time and who, under herd conditions, produced in 11 months 749 pounds of fat.

In December 1919, the association record for cows making over 50 lbs. of fat for the month was broken. During this time 57 cows made more than 50 pounds; the previous record was 40 cows in this class for a thirty day period. Another record was broken when 12 cows in one herd made over 50 pounds of fat. One cow gave 96 pounds of milk in one day, which was also a record. One cow made 115 pounds of fat in 30 days, or 143 pounds of butter.

One herd, that of J. W. Whowell & Son, consisting of 28 cows, produced 1,100 pounds of milk in one day.

Another important record was broken when the condensery issued a check for $1,013 for the milk produced from one herd of 28 cows for one month. These figures show what cow testing associations do for the dairy business. It is not possible to guess by looking at the cow what profit she will make. The accurate record each month assists the dairyman to learn what cows are cutting down the profit, and by eliminating these from the herd he gets more economical production.

The three high cows for butterfat production in December were: Kate, owned by J. W. Whowell and Sons, a grade Holstein that made 115 pounds of fat. Mary, owned by Van Meter & Krebill, made 91 pounds, and Belle, owned by J. W. Whowell made 90 pounds.

La Grange Jersey Sale.

The sale of Geo. La Grange was held at Grand Junction, January 28, at which time 29 head of registered Jerseys were disposed of. This was an opportunity for the Jersey fanciers in the western part of the state to obtain some exceptionally fine individuals.

The thirteen highest cows averaged $223. Three cows sold above the $300 mark. The highest price paid was by E. H. Moffit of Grand Junction when he bought Fame's Cherry Sayda for $340. The average for the sale was $144. It must be taken into account, however, that this includes the baby calves. The following made purchases at the sale: E. H. Moffit, Grand Junction; Jake Younger, Clifton; C. S. Griffin, Clifton; John Grooves, Clifton; William Broaderson, Clifton; F. A. Butcher, Clifton; Scott Miller, Clifton; J. R. Bainter, Grand Junction; O. L. Palmer, Clifton; E. E. King, Grand Junction; R. E. Meserve, Grand Junction; H. B. Hyre, Grand Junction; John Grooves, Clifton; Harry Hutchinson, Palisade; Leonard Else, Grand Junction; Seth McCarty, Clifton; Wilmer E. Smith, Grand Junction; Fred Coe, Grand Junction; T. G. Twyman, Grand Junction; W. E. Stout, Clifton.

Guernseys Average $546.

According to published reports in the Guernsey Breeders' Journal twenty-nine Guernsey sales were held during the calendar year 1919. A total of 1309 Guernseys sold for $715,748, or an average of $546. Two hundred thirteen bulls averaged $470 and 1096 cows averaged $561. Corresponding figures for 1918 show that in thirty-eight sales 1318 Guernseys were sold for an average price of $330. Seven hundred thirty-seven females averaged $385, 167 bulls averaged $284, and 414 unclassified Guernseys averaged $252.

Do Big Types Lack Lard?

Recently Prof. L. A. Weaver judged a Pig Club Show in Missouri and after the placings were made conducted a demonstration for the benefit of the boys. The pigs used were growthy, big-type spring gilts. Finally a farmer and breeder asked this question: "Isn't it true that hogs of strictly big-type breeding, marketed at 250 pounds carry less lard and dress out lower than smaller type hogs would do?"

Replying, Prof. Weaver said the gentleman's observation was possibly correct in the case of big-type hogs, unless they had been self-fed on corn from an early age. Then he went on to relate one experience. He said he shipped from the university a carload of 300 pound hogs that were fat. They sold in St. Joe at $17.50. The same day several other loads sold for the same price although none were as well finished and presumably none dressed as high a yield as the university load. Without question it had cost more to produce the well finished hogs than those that were less fat, but the killers were unwilling to pay a premium for them. Prof. Weaver went on to say that so long as this condition prevailed farmers were using good judgment in growing larger framed hogs, using the maximum of pasture and cheaper feeds, even though they were not so highly finished when sold.

He mentioned the substitution of numerous vegetable oils for lard and said that whenever the demand for lard caused killers to pay a consistently higher price for highly finished hogs, plenty of that kind would be available. —R. C. Ashby in The Swine World.

Lesion of the Mouth.

I have a calf coming a year old which is not doing well. I have noticed him especially when he is chewing his cud pass a yellowish, brown liquid through his mouth. Every time he belches up his cud he passes quite an amount of this yellowish liquid through his mouth. —R. B., Elbert County, Colo.

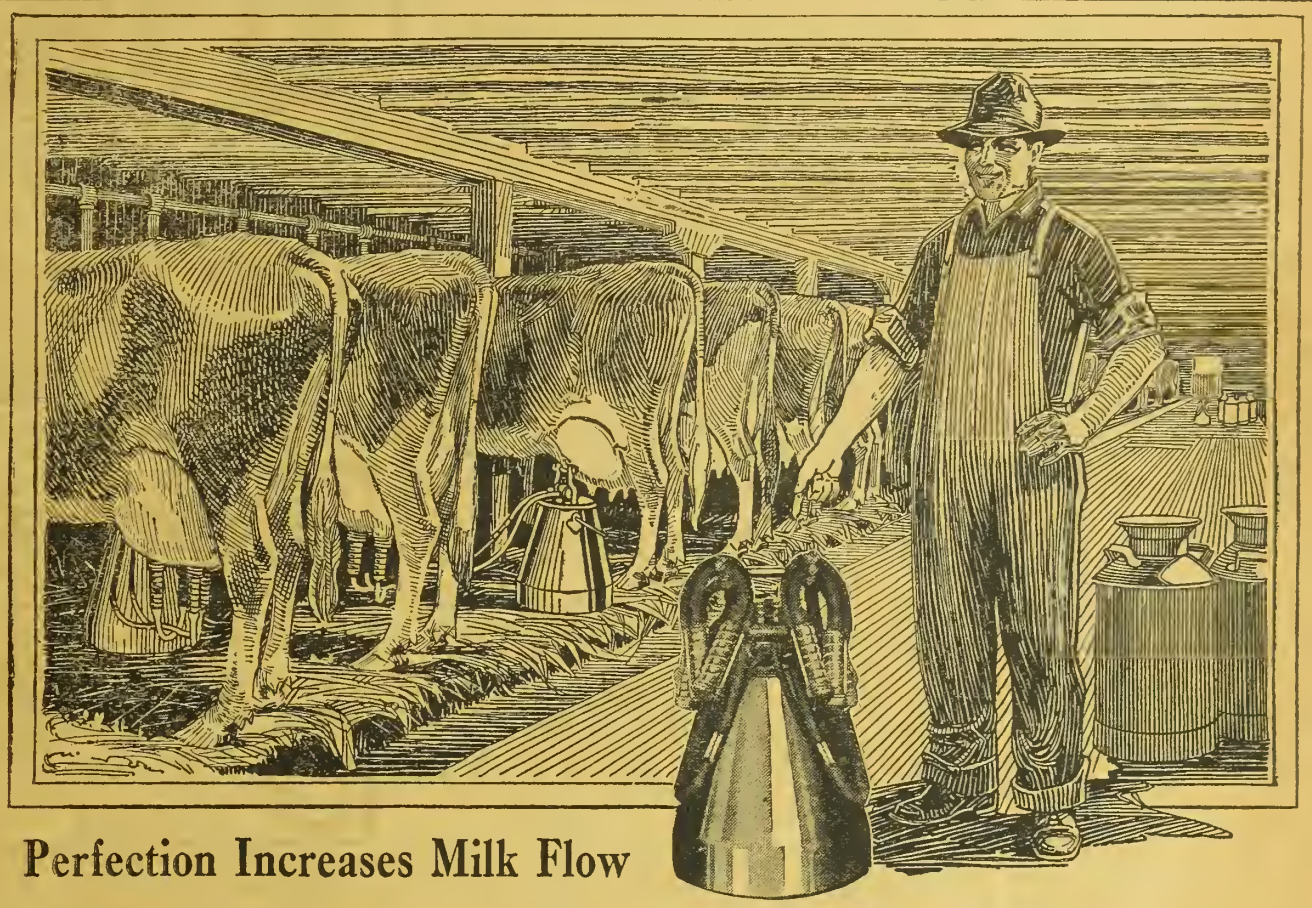
The calf probably has some lesion in the mouth, or it may be due to a catarrhal condition of the fore-stomachs. If the yellowish-brown fluid comes from the stomach we would expect it to come through the nose and not into the mouth. However, there are some conditions where this would not hold true. The brown color indicates the presence of blood. Examine the mouth carefully. It may be well to give a physic of castor oil or salts and restrict the diet for a few days.—G. H. G.

Probably Contagious Abortion.

Your herd is probably affected with contagious abortion. I am mailing a bulletin, treating of this disease with considerable detail. With the possible exception of tuberculosis, there is no disease of cattle that in importance compares with contagious abortion. Vaccination is as yet in the experimental stage. At present we can only combat it by isolation, disinfection, and in being careful not to breed a cow that has aborted for several weeks after discharges have ceased. The subject has been discussed in previous numbers of Western Farm Life. The bulletin contains the latest information on the subject, with advice as to treatment and herd management.—G. H. G.

Poultry and Eggs for Sale.

In the "Farmers and Stockmens Exchange" columns in this issue of Western Farm Life will be found advertised poultry stock and eggs of almost every strain and variety. This department is well to the back of the magazine. Look it up. You will find what you want at the right price.



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WHEN asked what feature in the Perfection Milker he considered most valuable, Mr Charles M. Yarter, who who is a well known dairyman in his State, said recently: "With the use of the Perfection we milk and strip fifty-four cows in eighty minutes, and yet I consider the greatest profit derived from using the Perfection is not so much in the time it saves as in the increased milk flow. We surely get much more milk with the machine than we could if we depended on hired help to do all the milking by hand, and we are getting a much better quality of milk too."

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DAIRY CATTLE AWARDS.

Following are the awards in Holeins, Jerseys and Guernseys, at the cent National Western Stock Show:

Holsteins.

Judge—W. S. Moscrip, Lake Elmo, Minn.
Three-year-old Bull—1st, Simpson, Denver, on hard Grove; 2nd, A. S. Neale, Manhattan, n., on Lakeside King Segis Albon De Kol; 3rd, lorado State Home, Denver, on Colantha Chief.
Two-year-old Bull—1st, Hall Bros., Denver, on stern Sir Loopman; 2nd, M. E. Penrose, Den- on Towanda Spring Farm Judge; 3rd, Wil-, Salida, Colo., on Durkie Johanna Wayne.
Senior Yearling Bull—1st, Cruse & Son, Mt. rrison, Colo., on Denver Pontiac Combination; l. Spencer Penrose, Colorado Springs, on Col- bine Piebe Changeling; 3rd, S. L. Rogers, lden, Colo., on Woodcroft Pontiac Golden.
Junior Yearling Bull—1st, Lohry & Wailes, lliken, Colo., on Goodro Johanna Fayne; 2nd, C. Donley, Mt. Morrison, Colo., on Avoca ige Korndyke Rag Apple; 3rd, Kalberer, oomfield, Colo., on Alcartra Korndyke Leeu- rder.
Senior Bull Calf (15 shown)—1st, R. Eggel- n, Mt Morrison, Colo., on Denver Johan Sir n Segis; 2nd, Spencer Penrose, on Columbine gis Changeling; 3rd, L. C. Donley, on King anna Cedarside Pontiac.
Junior Bull Calf—1st, Hall Bros., on Western euwarder Sir Koopman; 2nd, Hall Bros., on estern Beauty Sir Ormsby; 3rd, O. W.Murphy, vada, Colo., on Calvert Pietertje.
Cow, 3 years old or over—1st, M. E. Penrose, Lily Segis Pontiac; 2nd, Spencer Penrose, on edge Fayne De Kol 2d; 3rd, Lohry & Wailes.
Cow, 2 years old and under—1st, Spencer nrose, on Columbine Fayne Johanna; 2nd, lorado State Home, on Chloe Korndyke Sar- stic; 3rd, M. E. Penrose, on Nancy Johan ayne.
Senior Yearling Heifer—Spencer Penrose, on lumbine Pontiac Queen; 2nd, Ben F. Simpson, nver, on Avoca Lodge Jennie Johanna; 3rd, C. Donley, on Case Aagie Model.
Junior Yearling Heifer—1st, A. S. Neale, Man- ttan, Kan., on Pietertje Korndyke Beauty; 2nd, rman R. D'Arcy, Parker, Colo., on Jeanette aplecrest Segis; 3rd, M. E. Penrose, on Denver ponica Vale.
Senior Heifer Calf—1st, L. C. Donley, on oca Lodge Butter Girl De Kol; 2nd, Hall rothers, on Western Johanna Ormsby; 3rd, L. Donley on Sunny Pride Pontiac Johanna.
Junior Heifer Calf—1st, A. S. Neale, on Model gis Glista Fidelia; 2nd, A. S. Neale, on An- e Johanna Rue; 3rd, W. A. Purvis, Johnstown, olo., on Lady Beauty Segis Canary.
Senior Champion Cow—Spencer Penrose, on olumbine Fayne Johanna.
Junior Champion Heifer—A. S. Neale, Man- ttan, Kan., on Model Segis Glista Fidelia.
Grand Champion Cow—Spencer Penrose, on olumbine Fayne Johanna.
Reserve Grand Champion—A. S. Neale, on odel Segis Glista Fidelia.
Senior Champion Bull—Hall Bros., on Western r Koopman.
Junior Champion Bull—Cruse & Son, on Den- r Pontiac Combination.
Grand Champion Bull—Cruse & Son, on Den- r Pontiac Combination.
Reserve Champion Bull—R. Eggleston, on enver Johan Sir Silu Segis.
Aged Herd, consisting of 1 bull, 2 years old over; 1 cow, 3 years old or over; 1 cow or eifer, 2 years old and under 3; 1 heifer, 1 year d and under 2; 1 heifer, under 1 year old—1st, S. Neale; 2nd, M. E. Penrose; 3rd, L. C. onley.
Young Herd, consisting of 1 bull under 2 years d; 2 heifers, 1 year old and under 2; and 2 eifers, under 1 year old—1st, Spencer Penrose; d, A. S. Neale; 3rd, L. C. Donley.
Calf Herd, consisting of 1 bull and 2 heifers, l under 1 year old—1st, Hall Bros.; 2nd, L. C. onley; 3rd, A. S. Neale.
Four animals, either sex, get of one sire—1st, all Bros.; 2nd, A. S. Neale; 3rd, M. E. Penrose.
Two animals, either sex, produce of one cow—st, M. E. Penrose; 2nd. A. S. Neale; 3rd, Spen- r Penrose.

Jerseys.

Bull, 2 years old and under 3—1st, A. M. Mc- lenahan, Greeley, on Majesty's Feather Lad; nd, Theo. Morford, Golden, Colo., on Colorado olden Stockwell.
Junior Yearling Bull—J. V. Cotta, Crawfords- lle, Ind., on Financial Supreme; 2nd, Arthur . Gardner, Denver, on Eva's Oxford Majestie.
Senior Bull Calf—1st, A. M. McClenahan, on weet Bread's Majesty; 2nd, McClenahan, on In- an Maid's Majesty; 3rd, R. C. Robertson, Trin- ad, on Vernal's Kornak Noble.
Junior Bull Calf—1st, McClenahan, on Majes- 's Defiant Count; 2nd, Geo. E. Morton & Sons, ort Collins, on Mountair Fox; 3rd, McClenahan, n Flower Girl's Jack.
Cow, 3 years old or older—1st, McClenahan, on Jolly Oxford Buttermilk; 2nd, McClenahan, on Fortarshire's Jubilee; 3rd, Theo. Morford, on Brave Sally Stockwell.
Cow, 2 years old and under 3—1st, McClenahan, on Western King's Flora Dora; 2nd, McClenahan, on Majesty's Ida March.
Senior Heifer Calf—1st, Theo. Morford, on Jubilee Flips Dorothy; 2nd, McClenahan, on Elby's Majesty's Cora; 3rd, McClenahan, on Majesty's Finance Oxford.
Aged Herd, consisting of one bull, 2 years old or over; 1 cow, 3 years old or over; 1 cow or heifer, 2 years old and under 3; 1 heifer, 1 year old and under 2; 1 heifer, under 1 year old—1st, McClenahan.
Young Herd, consisting of 1 bull, under 2 years old; 2 heifers, 1 year old and under 2, and 2 heifers, under 1 year old—1st, McClenahan; 2nd, R. C. Robertson, Trinidad.
Calf Herd, consisting of 1 bull and 2 heifers, all under 1 year old—1st, McClenahan; 2nd, R. C. Robertson.
Four animals, either sex, get of one sire—1st, McClenahan.
Cow having a register of merit, record for one year—1st, McClenahan; 2nd, Theo. Morford, on Majesty's Ravenwood.
Cow having register of merit, record for one year, shown with two of her progeny—1st, McClenahan.
Breeders' Young Herd, consisting of 1 bull, 6 months and under 2 years; 2 heifers, 1 year and under 2 years; 2 heifers, 2 months and under 1 year, females to be bred and owned by exhibitors—1st, McClenahan.
Senior Champion Bull—A. M. McClenahan, on Majesty's Feather Lad.
Junior Champion Bull—A. M. McClenahan, on Sweet Bread's Majesty.
Grand Champion Bull—A. M. McClenahan, on Majesty's Feather Lad. Reserve—A. M. McClenahan, on Sweet Bread's Majesty.
Senior Champion Cow—McClenahan, on Jolly Oxford Buttermilk.
Junior Champion Heifer—McClenahan, on Rolly's Poet Pet.
Grand Champion Cow—McClenahan, on Jolly Oxford Buttermilk.
Reserve Grand Champion Cow—McClenahan, on Western King's Flora Dora.
The Great Western Sugar Co. Special for Grand Champion Jersey Cow—McClenahan, Greeley, on Jolly Oxford Buttermilk.

Guernsey.

Bull, 3 years old or over—1st, H. D. Parker, Greeley, Colo., on Lilly's College Princ.
Bull, 2 years old and under 3—1st, Frank Fauquier, Denver, on Laddie's St. Patrick Lad.
Junior Yearling Bull—1st, Chas. F. Deffke, Greeley, on Pioneer May Queen's Glenwood.
Senior Bull Calf—1st, H. D. Parker, on Barbi Reputation; 2nd, H. D. Parker, on Victor of Auburn.
Cow, 3 years old or over—1st, H. D. Parker, on Imp. Angerosa.
Cow, 2 years old and under 3—1st, H. D.
Senior Yearling Heifer—H. D. Parker, on Parker, on Prince's Janet D. Graceful Goda's Beauty.
Junior earling Heifer—1st, H. D. Parker, on Lady Jabe's Sparkle of Mapledell.
Senior Heifer Calf—1st, H. D. Parker, on Lady Jane's Princess; 2nd, H. D. Parker, on Prince's Richesse; 3rd, H. D. Parker on Yeksa Rose of Plainview Farm.
H. D. Parker on Leonon of Mapledell; 2nd, H. D. Parker, on Pearl of Auburn; 3rd, H. D. Parker, on Auburn's Laura B.
Senior Champion Bull, 2 years old or over—H. D. Parker, on Lilly's College Prince.
Grand Champion Bull, any age—H. D. Parker, on Lilly's College Prince.
Senior Champion Cow—H. D. Parker, on Imp. Angerosa.
Junior Champion Heifer, under 2 years old—H. D. Parker on Leonon of Mapledell.
Grand Champion Cow—H. D. Parker, on Imp. Angerosa.
Aged Herd, consisting of 1 hull, 2 years old or over; 1 cow, 3 years old or over; 1 cow or heifer, 2 years old and under 3; 1 heifer, 1 year old and under 2; and 1 heifer, under 1 year old—1st, H. D. Parker.
Young Herd, consisting of 1 bull, under 2 years old; 2 heifers, 1 year old and under 2; and 2 hiefers, under 1 year old—1st, H. D. Parker.
Calf herd, consisting of 1 hull and 2 hcifers, all under 1 year old—1st, H. D. Parker.
Four animals, either sex, get of one sire—1st, H. D. Parker.

How Blue Coon Was Fed.

Feeders will be interested in details concerning the handling of Blue Coon, the champion crossbred steer at the National Western show. This steer was finished by the University of Nebraska College of Agriculture, and details are furnished by Prof. H. J. Gramlich, head of the animal husbandry department, as follows:

"Blue Coon was calved September 20, 1917. At the time he was made champion at Denver, he lacked one day of being two years and four months of age. He weighed 1,660 pounds when sold at the auction to the Brown Palace hotel January 21. The herdsman reports that he dressed 68 per cent.

"Blue Coon's sire was named Envite's Andrew. He was a registered Aberdeen Angus bull of good quality and size. The dam of Blue Coon is a grade Shorthorn cow. She is not a large cow, but is quite well built and has been a very good breeder. Her calf a year older than Blue Coon was owned by the university and made quite a creditable showing at Chicago two years ago.

"Blue Coon was bred by Mr. Jess Hadley of Indianola, Neb., an Aberdeen Angus breeder. We purchased him as a calf when five months old. He was placed upon a nurse cow upon arrival at the university and was supplied a ration of ground oats, 2 parts; ground barley, 2 parts; bran, 2 parts, and 1 part oil meal. In addition he was fed all the alfalfa hay he wished. He was permitted to nurse until 15 months old. At the 1919 Denver show, he won over a strong class of senior calves and was made reserve champion grade. At this time, when he was 16 months old, his official weight was 1,150 pounds. At this stage of development, while possessing a very satisfactory type, he did not carry sufficient flesh to suit some judges. However, he would have been quite a popular champion grade at this time in the eyes of most of the ringside talent.

"His ration following the 1919 Denver show was quite similar to that fed during the previous year, with the exception that 2 parts hominy meal were added. Likewise, a limited amount of alfalfa molasses meal, together with some black strap molasses, was supplemented. A limited amount of silage was provided during the spring and summer of 1919. He had access to a bluegrass lot and a patch of sweet clover. Commencing in August, mangel beets were mixed in the ration and from October on, cooked barley was fed instead of ground barley. No corn was fed to this steer until December 1, 1919. During the six weeks which intervened between that time and the Denver show, his ration consisted of about one-third corn and the other two-thirds made up of the mixture he had been receiving prior to December 1.

"Blue Coon was far from a figurehead upon the university campus. As a matter of fact, he was utilized for class room work practically every day from the first of September until the time he was shipped to Denver. We considered him a splendid, practical type of steer. Without question, many of our students received inspiration in judging this steer which will lead them toward the production of superior typed animals."

Idaho Pays Highest Farm Wage.

Idaho paid the highest monthly wages for farm labor in 1919 and 1918 of any state in the Union. In fact, they were almost double the average for the United States, according to figures of the Idaho Crop Reporting Service. The average rate per month without board was $93.60 last year and $86.25 in 1918, or an increase of 8.5 per cent in one year. Back in the good old days of 1910, when prices seemed a bit unreasonable, Idaho farmers were paying $49.50 a month for the same class of labor, which price at that time was exceeded only in three other states. Thus in the short space of ten years the farmer has been required to increase the wages of his hired man 89 per cent.

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WHETHER it's cattle, hogs, sheep or horses, the more vigorous you keep them the more money you are sure to make from them. For it's the healthy, vigorous cows that produce the great quantities of the best milk. It's the sound, good-conditioned steers that put on the pounds of beef. It's the well, sturdy horses that can do the big day's work.

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Jerseys Win the Trophy.

An announcement which will be of great interest to Western Jersey breeders was made during the stock show by A. M. McClenahan of Greeley whose Majesty bred Jerseys have been regular winners at the National Western for a number of years. The announcement was to the effect that Mr. McClenahan had entered into a partnership with John C. Dixon, of Brandon, Wisconsin, a young Jersey breeder who promises to make a record in the show ring and in handling breeding herds which may even excel that of his famous father, W. G. Dixon of Southerton, Conn. The elder Dixon is manager of the greatest Majesty bred herd in the world namely, that belonging to L. V. Walkley.

John Dixon has been managing his father's herd in Wisconsin for four years and came to Colorado only recently to take charge of the McClenahan herd, which he fitted for the 1920 show. Mr. McClenahan has been a steady winner but the results of securing the services of an expert were quite evident from the fact that this year, on top of a numerous assortment of blue ribbons and grand champions, Mr. McClenahan also won sweepstakes of the show for the best herd of dairy cattle of any breed.

This trophy is offered by the Great Western Sugar Company and consists of a challenge cup, to which all dairy breeds are eligible. It was the first time that the trophy was awarded to the Jerseys.

Mr. Dixon has already won a reputation at some of the shows in the corn belt. In 1917 he handled the breeder's young herd that, for the first time, defeated the famous Longview herd at Iowa state fair. He also developed two state champions of Wisconsin for butterfat production and last year at Thornton farm in Illinois he developed two, two year olds that made records. Mr. Dixon's coming means that there will be new life in Jersey competition at the National Western and at some of our western state fairs.

Senior and grand championship on bull went to the McClenahan herd on Majesty's Feather Lad. In senior bull calf Sweet Bread's Majesty was first and Indian Maid's Majesty second. Sweet Bread's Majesty was selected as the junior champion bull, winning over Financial Supreme, shown by J. V. Cotta of Crawfordsville, Ind. a notable figure in Jersey circles, who was at the National Western for the first time.

In junior bull calf Mr. McClenahan won first on Majesty's Defiant Count and third with Flower Girls' Jack. Second in this class went to George E. Morton & Sons, Ft. Collins, on Mountain Fox.

Mr. McClenahan took senior and grand championship in cows with Jolly Oxford Buttermilk and he was second also in this class with Forfarshires Jubilee. Reserve championship was given him on Western King's Flora Dora in the two year old class, with Majesty's Ida March second.

In the senior yearling heifer class Raleigh's Poets Pet was the first prize winner and junior champion heifer, Jubilee Oxie, being second.

He stood first and second in the junior yearling heifer class with Majesty's Denver Lady II, first, and Majesty's Peachy second. In the senior heifer calf class Jubilee Flips Dorothy, owned by Theodore Morford of Golden took first with a heifer of Mr. McClenahan's breeding. Second and third in this class were McClenahan's prizes on Majesty's Finance Oxford and Elby's Majesty Cora.

First in the junior heifer calf class went to McClenahan on Majesty's Raleigh's Dainty.

Cleaning Milking Machines.

One of the principal objections to the use of milking machines has been the difficulty in sterilizing the rubber parts so as to produce a milk of good quality and low bacteria count. Some of the milking machine companies have recommended simply washing and placing these parts in a brine or so-called sterilizing solution. While the inadequacy of this method has been widely recognized, there has been a lack of knowledge of a really satisfactory method of sterilizing them.

C. F. Hoyt, the market milk specialist of this office, has recently come across parties who have themselves developed methods apparently satisfactory. One of these parties is Miss Lucy Hicks, a dairyman of Santa Barbara, Calif. Miss Hicks has used a Hinman machine for four or five years. She milks about 30 cows and has a high class trade, obtaining some 3c per quart more than her competitors. The average of her bacteria counts from wagon samples for the last nine months was 1,700, and among them was only one above 10,000.

After each milking she rinses the rubber parts in cold water, washes them with soap and water using a brush, then places them in a vat of cold sterilizing solution and turns in steam until a temperature of about 180 degrees is reached. They remain in this solution until the next milking. Under this method the long tubes last about a year, the short tubes six months and the teat cup rubbers three months.

Mr. D. O. Brant of the Elliott-Brant Rancho near Los Angeles, Calif., has developed a similar method. Mr. Brant milks about 60 cows wih an Empire machine. He also has a high class trade, his milk being consumed largely in hospitals. His average count for the last four months from wagon samples was 6,000, the lowest being 700 and the highest 25,000.

He cleans the tubes with warm water, using a brush, then places them in a sterilizing solution for a few minutes. He then places them in a ten-gallon milk can, fills with cold water and turns in steam until a temperature of about 160 degrees is reached. He leaves them in this water until the next milking. The life of the long tubes is about four months, the short tubes two months and the inflations three months. —J. E. Dorman, Western Dairy Division, U. S. D. A.

The sign of a Profitable Dairy

THE Empire sign on a fence, post or building, is almost always the sign of a profitable dairy. Without exception it is proof that the owner has realized that the world is clamoring for and demanding better and cleaner milk and has determined to supply it in the most economical and efficient way.

The Empire carries the milk direct from the cow into a covered pail without its coming in contact with the air. Untouched by hands—free from flies, dirt, and stable air—it goes to the milk house and thence to market just as clean as nature made it.

Perhaps most dairymen adopt the Empire because it's the most economical way to milk, but their customers appreciate the cleanliness of Empire milking and are learning to look for milk produced in this way.

Our nearest dealer will be glad to tell you all the advantages of the Empire. Ask him for our catalog 4-M, or write us for it.

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One Dose Immunizes for Life — It Saves the Coil

THE U.S. BLACKLEG SERUM CO.
INCORPORATED
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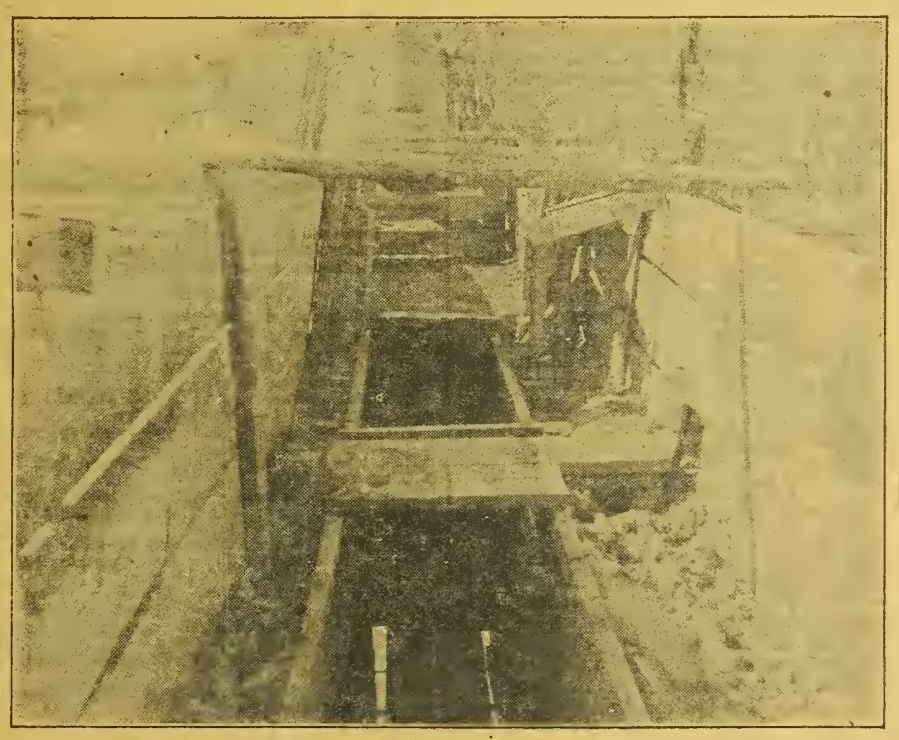

Dipping Vat for hogs on farm of Frank Meeker, Montrose, Colo.

No other means of ridding hogs of lice, is quite so effective as the dipping vat. This may be constructed of wood, concrete or metal. A very convenient way is shown in the illustration. It is 4 feet deep and buried 3½ feet in the ground. It is made of a 2-inch plank and is just wide enough for the hog to pass through. An incline at either end serves as a means of getting the hogs to walk in and out. A trip board is shown in the illustration. The hog is forced to walk through the alley and is crowded onto the trip board, which works on a pivot. The hog is dropped directly into the vat. This method may be used. However, it is more advisable to force the hog to walk in and out again. The vat should be long enough so that all parts of the hog are sure to come in contact with dip—say about 12 feet. In dipping, just enough solution should be used to completely cover the hog.—H. A. L.

Efficiency In Handling Stock.

The conditions for livestock raising in the West are rapidly undergoing changes which are compelling the employment of different methods of handling. The abundance of free grass which was once the glory of the stockmen in the West is now a dream of the past. He is now limited to a certain grazing area where only a comparatively few head can be ranged. It is necessary under the conditions to look to more efficiency in the handling of the stock. It is true in many cases that 50 per cent of a calf crop is considered an achievement. Here is a leak that can be remedied under careful management. No one can expect a cow to do her best when not properly nourished. Some still cling to the idea that three-fourths to one ton of hay is ample to winter a cow. This results in her coming out of the winter in a weakened condition. She cannot produce a strong calf and raise it as it should be raised when she is thin and weak. More hay should be fed in order that the cow comes through the winter in good condition and strong enough to go through the ordeal of calving and still be in condition to raise her calf properly. We should be able to increase our livestock without increasing the number of breeding cows, namely by better care tending toward a larger percentage of calves.

While it has been pointed out time and again, and experience has taught that the greatest economy in gain is experienced during the time of growth, still many of our stock raisers have failed to grasp the importance of this fact. It is absolutely true that it requires one-third to one-half less feed to produce the same weight when an animal is growing, than when matured. In order to get the best results and to use the herds more efficiently, this fact must be taken advantage of. It will not pay to stunt the weaner calf, but we must keep it growing from the time it leaves the cow. Make the weight you desire by the time the animal is 20 months. This is economical production. —H. A. L.

Sheep Exhibit of High Quality

EXPERT PRONOUNCES IT EQUAL TO INTERNATIONAL.

CHARLES I. BRAY.

THE quality of the sheep exhibit at the National Western Show was unusually high. Mr. Sherwood of Sherwood Bros., from Missouri, who exhibited in December at the Chicago International expressed the opinion that the show was equal to the Chicago exhibit. While there was not such a high standard maintained throughout all the breeds, especially among the tops, he said there were fewer inferior individuals at the other end of the line. The sheep were judged by Monty Thornton of Anoka Farms who did his work in an entirely satisfactory manner. He showed himself well qualified to pass on all breeds. He also praised the exhibits very highly, both as to fitting and breeding and stated that the Colorado sheepmen had every reason to be proud of what they had accomplished.

There was a fair exhibit of fat lambs and yearlings, the contest being a three cornered one between R. G. Maxwell & Sons of Fort Collins, Kansas Agricultural College, Manhattan, and the Colorado Agricultural College. Maxwell won champion lamb with a blocky Southdown, repeating his success of last year, and also won first on long wool lamb, and second on pen of five lambs. Kansas won first on pen of yearlings and had champion yearling wether. The Colorado Agricultural College showed best pen of lambs, and had seconds on long wool wether. The best Shropshire lamb from the agricultural college pen was later purchased by the Kansas College to fit for Chicago next fall.

Hampshires.

The Hampshire breeding classes were the strongest in the show, as many as nineteen entries showing in the yearling ewe classes. Sherwood Bros. had their big show flock from the east that has won highest honors for two years at the International, but they found plenty of competition in all classes. Sherwood Bros. had the champion ewe, first and third prize aged ram, first prize ewe in two classes, and best pen of lambs. The Ralston Valley Farms of Golden, (H. Petrie & Son) were in the running at all times. Foster Petrie, who is shepherd as well as part owner, had his entries fitted in fine shape, and took a number of prizes.

Kansas Agricultural College took a number of seconds with a highly fitted flock in the pink of condition. C. D. Turner of Hillrose, Colo., came to the top with the first prize yearling ram, which was later made grand champion. Both the judge and Mr. Sherwood credited the Turner ram with having the best Hampshire head shown on the grounds.

Shropshires.

The Shropshire show was practically equal to the Hampshire exhibit both in quantity and quality, and highest honors were won by the Eggleston flock from Mount Morrison. Mr. R. Eggleston is making a remarkable success both with Holsteins and Shropshires, and was highly pleased with the success of his flock. The Eggleston flock was fitted and shown by Ray Miller, who as a student showed the Colorado Agricultural College sheep last year. The Eggleston flock came first on aged ram, first, second and third on ram lambs, first and second on ewes in two classes, and first on pen of lambs, and champion and reserve on ewes.

The Gilmorelands flock from Fredonia, Kansas, was brought to the show by Sherwood owing to the sickness of the shepherd in charge, and won a number of second and third prizes. The Kansas Agricultural College was also strongly represented showing the grand champion ram, and also second prize ram in the yearling class, and winning second on pen of lambs. Andy Patterson who fits and shows the Kansas flock is a sheep expert of considerable reputation, and is a brother of Tom Patterson, who judged the Herefords in the beef cattle division. O. Ben Haley of Denver, did not show his sheep in quite as high finish but was up in the money on several occasions.

Cotswolds.

Competition in Cotswolds was between the Agricultural colleges of Kansas and Colorado. The quality of the exhibit was higher than last year. Honors were about equally divided. Colorado won first and second on aged rams, first and second on yearling ewes, second and third on ewe lambs, first on flock, champion ewe and reserve champion ram. Kansas Agricultural College won first on yearling ram, and ewe lamb, champion ram and reserve champion ewe.

Rambouillets.

King Bros. of Laramie had their champion show flock on exhibit and won all prizes entered for. The outstanding individual in the string, if such a thing is possible, is the International grand champion ram, Majestic, Jr., said to be the best fleeced ram in America. When this ram was shown at Chicago the judge allowed him to run loose in the ring while judging the other entries, as he was such an outstanding winner.

Corriedales and Crossbreds.

The Wyoming Corriedale Sheep Co. had a remarkable exhibit of Corriedales together with some new crosses, which are being tried out. The cross which seems to be giving the best promise of success is the Devon-Rambouillet. The champion Devon ram of England was on exhibition, being a coarse wooled sheep of somewhat the type of the Lincoln. By crossing this ram on Rambouillet ewes a sheep is produced of somewhat the same type as the Corriedale, but with much stronger bone and better constitution. There was no competition in these classes, but from an educational standpoint they attracted more inquiry than any other section of the show.

Southdowns.

Competition in this class was between R. G. Maxwell & Sons of Fort Collins, and the Kansas Agricultural College. The Maxwell flock now includes practically all the old Southdown flock formerly owned by the Colorado college. Park Maxwell is an expert fitter, and held even honors with the Kansas flock, winning first on aged ram, first on ram lamb, second on pair of lambs and flock, and grand champion and reserve champion rams.

Carload Classes.

There was good competition in the car lots. The grand champion car lot was shown by F. A. Starkweather, Blackfoot, Idaho. A. J. Knollin of Bethel, Kansas, has been winning this championship for several years but had to take second with his Shropshires. The balance of the prize winning carloads came from northern Colorado. Ed. Munroe of Fort Collins won in fat ewes, third in fat lambs and first on fat lambs fed in Colorado.

BREEDING SHEEP.

Cotswold.

Ram, 2 years old or over—1st and 2nd, Colorado Agricultural College.

Ram, 1 year old and under 2—Kansas State Agricultural College.

Ewe, 1 year old and under 2—1st and 2nd, Colorado Agricultural College.

Ewe, under 1 year old—1st, Kansas State Agricultural College; 2nd and 3rd, Colorado Agricultural College.

Flock, consisting of 1 ram, 1 year old or over; 2 ewes, 1 year old and under 2; and 2 ewes, under 1 year old—Colorado Agricultural College.

Champion ram—Kansas State Agricultural College. Reserve—Colorado Agricultural College.

Champion Ewe—Colorado Agricultural College. Reserve—Kansas Agricultural College.

Rambouillet.

Ram, 2 years old or over—1st, F. S. King Bros. Co., Laramie, Wyo.; 2nd, Wyoming Corriedale Co.; 3rd, Colorado Agricultural College.

Ram, 1 year old and under 2—F. S. King Bros. Co., Laramie, Wyo.

Ram lamb, under 1 year old—1st, 2nd and 3rd, F. S. King Bros. Co., Laramie, Wyo.

Ewe, 1 year old and under—1st, 2nd and 3rd, F. S. King, Laramie, Wyo.

Ewe, under 1 year old—1st, 2nd and 3rd, F. S. King Bros.

Pen of four lambs, either sex, bred by one exhibitor—1st, F. S. King Bros. Co.; 2nd, Colorado Agricultural College.

Pen of four lambs, either sex, get of one sire—1st, F. S. King Bros. Co.; 2nd, Colorado Agricultural College.

Flock consisting of 1 ram, 1 year old or over; 2 ewes, 1 year old and under 2; and 2 ewes, under 1 year old—1st, F. S. King Bros. Co.; 2nd, Colorado Agricultural College.

Champion ram—F. S. King Bros. Co. Reserve—F. S. King Bros. Co.

Champion Ewe—F. S. King Bros. Co. Reserve—F. S. King Bros. Co.

Corriedale.

Ram, 2 years old or over—1st and 2nd, Wyoming Corriedale Sheep Co., Cheyenne, Wyo.; 3rd, F. S. King Bros. Co., Laramie, Wyo.

Ram, 1 year old and under 2—1st and 2nd, Wyoming Corriedale Sheep Co.

Ram lamb, under 1 year old—1st, 2nd, 3rd, Wyoming Corriedale Sheep Co.

Ewe, 1 year and under 2—Wyoming Corriedale Sheep Co.

Ewe, under 1 year old—1st, 2nd and 3rd, Wyoming Corriedale Sheep Co.

Pen of four lambs, either sex, bred by one exhibitor—1st, Wyoming Corriedale Sheep Co.

Pen of four lambs, either sex, get of one sire—1st, Wyoming Corriedale Sheep Co.

Flock consisting of 1 ram, 1 year old or over; 2 ewes, 1 year old and under 2; and two ewes, under 1 year old—1st and 2nd, Wyoming Corriedale Sheep Co.

Champion and reserve champion ram—Wyoming Corriedale Sheep Co.

Champion and reserve champion ewe—Wyoming Corriedale Sheep Co.

Southdown.

Ram, 2 years old or over—1st, R. G. Maxwell & Sons, Fort Collins, Colo.; 2nd and 3rd, Kansas State Agricultural College.

Ram, 1 year old and under 2—1st and 2nd, Kansas State Agricultural College.

Ram lamb, under 1 year old—1st, R. G. Maxwell & Sons; 2nd and 3rd, Kansas State Agricultural College.

Ewe, 1 year old and under 2—1st and 2nd, Kansas State Agricultural College; 3rd, R. G. Maxwell & Sons.

Ewe, under 1 year old—1st and 2nd, Kansas State Agricultural College; 3rd, R. G. Maxwell & Sons.

Pen of four lambs, either sex, bred by one exhibitor—1st, Kansas State Agricultural College; 2nd, R. G. Maxwell & Sons.

Pen of four lambs, either sex, get of one sire—1st, Kansas State Agricultural College; 2nd, R. G. Maxwell & Sons.

Flock, consisting of 1 ram, 1 year old or over; 2 ewes, 1 year old and under 2; and 2 ewes under 1 year old—1st, Kansas State Agricultural College; 2nd, R. G. Maxwell & Sons.

Champion ram—R. G. Maxwell & Sons. Reserve—R. G. Maxwell & Sons.

Champion ewe—Kansas State Agricultural College. Reserve—Kansas State Agricultural College.

Hampshire.

Ram, 2 years old or over—1st, Sherwood Bros., Shelbyville, Mo.; second, Kansas State Agricultural College; 3rd, Sherwood Bros.

Ram, 1 year old and under—1st, C. D. Turner, Hillrose, Colo.; 2nd, Sherwood Bros.; 3rd, Harry Petrie, Golden, Colo.

Ram Lamb, under 1 year old—1st, Kansas State Agricultural College; 2nd, Harry Petrie; 3rd, Sherwood Bros.

Ewe, 1 year old and under—1st and 2nd, Sherwood Bros.; 3rd, Kansas Agricultural College.

Mayer
HONORBILT SHOES

MILWAUKEE Mayer TRADE-MARK CUSTOM MADE HONORBILT

For the Whole Family

DRESS up shoes for everybody, work shoes, school shoes for the children and easy restful house shoes. *Honorbilt* Shoes contain the same good quality leathers they did 38 years ago; they are *built on honor.* The name *Honorbilt* stands for a heaping measure of service. Wear a pair and prove it for yourself.

Men's and Women's Fine Shoes

The fine shoes are all that anybody could ask for in style and you get choicest leather plus genuine comfort. You are sure to find the particular shape you want and always the latest styles, and a wide variety.

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Honorbilt Work Shoe leather is double tanned to resist the alkali in the soil, as well as barnyard juices. They are soft and easy on the feet yet long wearing and will not get hard when wet. Honorbilt Work Shoes will give double the wear of ordinary shoes.

Children's Shoes

Sturdy, well-built shoes that stand rough treatment—the kind boys and girls like, and their parents, too. Shaped for growing feet. The quality is there—*they wear like iron.*

No matter who in your family needs a pair of shoes next, see your dealer who handles the Mayer Honorbilt line. Look for the name *Honorbilt* on the soles.

F. Mayer Boot & Shoe Co.
Milwaukee, Wis.

GALV. STEEL ROOFING

That will not leak. Will last 40 years and then 20 more under favorable conditions. Nine different kinds, forevery shape and kind of building. Also wire fence, barbed wire, iron posts, farm gates, stock water tanks, etc., etc.

Write for catalog, prices and samples

Steel Roofing & Stamping Works
519 S. W. 2d St., Des Moines, Ia.

WITTE LEVER CONTROL "Arm Swing" Drag Saw

You have Absolute Control of the Saw at all times.

Push on lever to start saw—Pull to stop.
Arm Swing motion as in hand sawing.
Low Prices. Big 3-Color Folder FREE.

WITTE ENGINE WORKS
Kansas City, Mo. 264-H Oakland Ave.
Pittsburgh, Pa. 264-H Empire Bldg.

Ewe, under 1 year old—1st, Sherwood Bros.; 2nd, Kansas Agricultural College; 3rd, Sherwood Bros.

Pen of 4 lambs, either sex, bred by one exhibitor—1st, Sherwood Bros.; 2nd, Kansas Agricultural College; 3rd, Harry Petrie.

Pen of 4 lambs, either sex, get of one sire—1st, Sherwood Bros.; 2nd, Kansas Agricultural College; 3rd, Harry Petrie.

Flock, consisting of 1 ram, 1 year old or over; 2 ewes, 1 year old and under 2, and 2 ewes, under 1 year old—1st, Sherwood Bros.; 2nd, Kansas Agricultural College; 3rd, Harry Petrie.

Champion Ram—C. D. Turner, Hillrose, Colo. Reserve—Sherwood Bros., Shelbyville, Mo.

Champion Ewe—Sherwood Bros.

Shropshire.

Ram, 2 years old or over—1st, R. Eggleston, Mt. Morrison; 2nd, Gilmorelands, Fredonia, Kan.; 3rd, O. Ben Haley, Denver.

Ram, 1 year old and under 2—1st and 2nd, Kansas Agricultural College; 3rd, Gilmorelands.

Ram lamb, under 1 year old—1st, 2nd and 3rd—R. Eggleston, Mt. Morrison.

Ewe, 1 year old and under 2—1st and 2nd, R. Eggleston; 3rd, Gilmorelands.

Ewe, under 1 year old—1st and 2nd, R. Eggleston; 3rd, Gilmorelands.

Pen of four lambs, either sex, bred by exhibitor—1st, R. Eggleston; 2nd, Kanasas Agricultural College; 3rd, Gilmorelands.

Pen of four lambs, either sex, get of one sire—1st, R. Eggleston; 2nd, Kansas Agricultural College; 3rd, Gilmorelands.

Flock, consisting of 1 ram, 1 year old or over; 2 ewes, 1 year old and under 2; and 2 ewes. under 1 year old—1st, R. Eggleston; 2nd, Gilmorelands; 3rd, O. Ben Haley.

Champion Ram—Kansas Agricultural College. Reserve—R. Eggleston.

Champion Ewe—R. Eggleston. Rserve—R. Eggleston.

How Sheep Farming Pays.

The old dictum of making two blades of grass prosper where one formerly succumbed has been applied to sheep farming in an experiment conducted by specialists of the United States Department of Agriculture. A field of 30 acres has been used exclusively during the past four seasons, for producing forage crops to be harvested by sheep. The field is divided into 10 plats, and during the recent season every portion grew at least two different crops, while on some of the unit areas three crops were grown and grazed.

Fall-sown wheat provided the earliest available pasturage in the spring, and after this was exhausted the sheep were shifted to an early spring sowing of oats and peas. Thence they moved to another tract of oats and peas, where they grazed luxuriantly and well until the supply of green stuff was curtailed, when they were transferred to alfalfa and rape pasturage. This medley mixture of green feed furnished good grazing until about the middle of July, when the soy beans were available for pasture purposes.

As a consequence of the intensive utilization of pasture crops for mutton and wool production, this field of 30 acres furnished sufficient feed for 70 ewes and 60 lambs for a 200-day period. The best grazing resulted from a patch of three acres of soy beans, which carried 60 sheep for 30 days with satisfactory results. The system of management followed was to move the lambs, and, as far as possible, the old ewes at regular intervals of not less than two weeks from one patch of green feed to another. This practice of moving the sheep frequently to fresh ground, as well as the plan of plowing the land for the subsequent crop, eliminated the danger of loss from stomach worms.

Although the system requires some extra preparation of the land and seeding, as well as shifting of the sheep from one plat to another and providing plenty of water for the mutton makers, it nevertheless, is believed worthy of trial, especially in sections of high-priced farming land where a maximum return must be realized from every acre used.

On the basis of the results in this experiment a flock of 200 breeding ewes would require 80 acres of forage crops. It would require the services of two men and one team to produce 80 acres of forage crops, in addition to caring for the sheep. Winter feed for such a flock, together with that for work horses, would require 35 acres of similar land, making a total of 115 acres of farm land necessary for the maintenance of a 200-ewe flock under this system. On the basis of the 1919 market prices, the gross income from a reasonably well-managed ewe flock handled in this way would be about $3,000. This figure represents the return of the ewes on 115 acres of land and a year's work of two men and four horses.

There would be a higher expense for seed than in ordinary farming, but the amount of labor required and its distribution throughout the year would afford a very marked advantage in favor of sheep farming as compared with other agricultural activities producing an equal revenue.

The Wyoming ground squirrel is rapidly extending its range southward and becoming a pest in northern Colorado.

Grow Red Clover Seed.

Idaho seed production districts will be interested in learning that the U. S. Department of Agriculture is urging the seeding of as large an acreage of red clover as possible. The best information obtainable shows that the foreign market is quite as bare of red clover seed as is our own. The French and Italian supplies are sold out, and there appears to be no surplus in Germany or in Russia. This means that clover seed will be high for at least two years to come if not more, and those farmers who seeded last spring or who seed in 1920 will have a chance to sell their clover seed crop at a good figure. This is a time to look ahead, and for American farmers to get the benefit of the high prices, before Europe has been able to get back to normal production and the prices fall.

In view of the high price of clover seed, it is especially important that farmers pay careful attention to the quality of seed they buy. The relation between the purity and germination of a sample of clover seed and its value to the farmer has been so frequently discussed that it is not necessary to enter into details. A farmer, paying a low price for a poor lot of seed, may really be paying more for the good seed that will grow than he would have in a sample of higher price. The only way to decide this is to secure samples and quotations from reliable firms, and have the seed analyzed by the state seed laboratory.

The attention of farmers is also called very especially to the fact that French and Italian seed has been and is being imported into this country and that the experiments so far conducted by the Department of Agriculture indicate that this seed will produce a plant more subject to disease and less hardy under our American conditions than plants from our own seed.

In sections where there is no disease and if the winter is moderate a successful stand of clover may be secured with imported seed but the chances against success are always greater than when using American seed. Farmers are urged, therefore, to insist upon a statement showing where the seed offered them was harvested.

It is also a time to consider with more than usual care the means necessary for getting the most out of the seed sown. It will not pay to throw expensive seed on poorly prepared ground as was so often done when clover seed was cheap. The seed bed should be well prepared. The best way is not to sow the seed in early spring on the wheat but to harrow it in on the wheat or to seed with a spring grain in a well prepared seed bed. Seeding alone without a companion or nurse grain crop will often be better, but not always. If seeding must be done on rather worn soil, it is better to seed alone, especially if the field is not very weedy. If a special seed bed is prepared it should be well compacted. A freshly plowed and harrowed field is too open for the best results. The soil must be compacted or the seed bed will dry out before the young plants get their roots down far enough.

Stop the Decay of Trees.

Whenever the limb of a tree is blown off or becomes diseased, the stump should be sawed off even and painted with creosote or tar paint; otherwise decay will set in and spread to other parts of the tree. Oftentimes even a nail hole will so injure the bark that it will come off leaving the wood underneath unprotected. If these spots are left bare, decay will set in and seriously endanger the tree. A coat of creosote or tar paint will prevent spread of decay and gradually the bark will grow over the bare place again.

About half of the condensed and evaporated milk imported by Mexico is consumed in the Peninsula of Yucatan. The cities along the Gulf of Mexico, Tampico, Vera Cruz, Tuxpam, and Puerto Mexico use large quantities of these products. The City of Mexico is a small consumer. During 1918 the United States exported 4,142,818 lbs of condensed and evaporated milk to Mexico.

HUDSON SUPER SIX

Endurance Makes Hudson the Largest Selling Fine Car

More Than 80,000 Owners Value That Quality Most Because It Means Long Dependable Service, Free of Car Troubles

Hudson outsells all the world's fine cars, only because of qualities that count in every day service.

Chief of these is durability. All motorists so regard it.

And endurance is written everywhere in Hudson history.

Since Hudson made its unrivalled endurance records, it has led all other fine cars in sales every month and every year.

That proves how experienced motorists judge car worth.

How Hudson Gained Leadership

It was not speed that gave it sales leadership; though Hudson holds more stock car speed records than any car, and with cars embodying the Super-Six principle won more points in speedway racing than the fastest special racers ever built.

It was not power; though Hudson holds the fastest time ever made up Pike's Peak, in the classic of all hill climbs.

These Qualities Inspire Pride In Hudsons

They are valued of course by more than 80,000 Hudson owners. They contribute to the rounded supremacy of performance which distinguishes the Hudson everywhere. And it is natural to feel pride of ownership, and affection for a car that none can rival in fleetness, or in hill-climbing.

But few will ever care to use the full limit of Hudson speed. Few will meet hills to test its limits of power.

What does count every day of use is sure, dependable transportation. What does count after many months of service is the way Hudson retains its smooth, silent powers of superior performance, undiminished.

It means the assurance and reliance in your car that you feel in a watch that has served you for years, and never gave you cause for doubt. You are not disturbed by speculation regarding probable car troubles. Because with Hudson, car troubles are not thought of because of their remoteness.

And remember that the Super-Six principle which accounts for all Hudson's speed, endurance and performance records, is exclusive in the Hudson. No other maker can use it. For the Super-Six motor, which adds 72% to Hudson power, without added weight or size, was invented and patented by the Hudson.

Mark How Hudson Now Fulfills Its Prophecy

Every year has seen some improvement in the Hudson. The new models approach nearer the builders' ideal than they ever believed practicable. It is today a finer machine than those early models, which made performance records, no other car has equalled.

Hudson also leads in style. Its influence shapes motor design each year.

Demand for such advantages as Hudson's inevitably means that immediate delivery is not possible for all who want them. Many have waited months for the model of their choice.

Even should you not want your Hudson until next year, now is not too early to place your order.

Hudson Motor Car Company, Detroit, Mich.

(3014)

Pig Club Exhibits at Denver

YOUTHFUL HOG BREEDER MAKES GOOD SHOWING.

Donald Plumb, with boar on which he won one of the Western Farm Life trophy cups.

THERE was much interest in the Pig Club exhibits at the National Western Stock Show and the young pig raisers gave an excellent account of themselves in the competition. In fact, the club members were successful in the open classes showing against adult breeders and winning half a dozen prizes. The club work was presented in two phases, the first being the regular competition of the animals and the other a competition in ability as showmen. The latter contest proved to be a very interesting feature for the adult breeders who witnessed it, as it taught them a few things about exhibiting hogs which were new.

Pig Club work in Colorado has flourished greatly under the able leadership of Mr. J. T. Tingle, whose work is backed co-operatively by the Bureau of Animal Industry at Washington and the Extension Department of the Colorado Agricultural College.

Western Farm Life offered silver trophy cups for sweepstakes boar and sow in the Pig Club classes, the winners being, Donald Plumb of Greeley, on boar and Herbert Sandstead of Willard, on sow. These young men have made a success not only of the breeding game but also from the commercial standpoint. Herbert Sandstead's books show a total income from his sows and boars of $436 which includes state fair and other winnings and sales of pigs.

Following are the awards in the Pig Club classes:

Duroc Jerseys.

Sow farrowed since March 1, 1918:
1st—Herbert Sandstead, Willard on Pleasant Dream.
2nd—Donald Plumb, Greeley, on Lotty Good E Nuff 2nd.
3rd—Leonard McIntosh, Cheraw.
4th—Karl Cassatt, Vroman.
Boar farrowed since March 1, 1919:
1st—Donald Plumb, Greeley, on Plumb Creation.
2nd—Agnes Liddle, Wellington, on Liddle's High E Nuff.
3rd—Donald Plumb, Greeley, on Plumb's Best Boy.
th—Donald Plumb, Greeley, on Plumb's Long E Nuff.
Sow farrowed since June 1, 1919:
1st—Ralph Simms, Fort Morgan, on High Lady.
Sow, farrowed since March 1, 1919:
1st—Donald Plumb, Greeley, on Lotty Sensation.
2nd—Donald Plumb, Greeley, on Plumb's Model Beauty.
3rd—William Hardman, Pueblo, on Marianna 2nd.
4th—Ralph Eakins, Willard, on Akron Lady.
Champions:
Champion boar—Donald Plumb, on Plumb's Creation.
Champion sow—Herbert Sandstead, on Pleasant Dream.

Poland Chinas.

Boar farrowed since June 1, 1919:
1st—Arthur Fisher, Niwot.
2nd—Donald Bliss, Greeley, on Pleasant Valley Wonder.
3rd—Chas Brown, Greeley.
4th—Donald Bliss, Greeley, on Giant Joe's Wonder.
Boar, farrowed since March 1, 1919:
1st—Howard Crane, Wellington, on Jack Lee Evans.
2nd—Harvey Mathias, Greeley, on Long Aviator.
Sow, farrowed since June 1, 1919:
1st—Herbert Ostoff, Lyons.
2nd—John Bliss, Greeley.
3rd—Donald Bliss, Greeley, on Wonder Belle.
4th—Donald Bliss, on Beauty Belle.
Sow, farrowed since March 1, 1919·
1st—Vern Long Willard, on Eureka.
2nd—Donald Bliss, on Quality Belle.
3rd—Franklin Collard, Iliff, on Miss Buster.
4th—Rufus Kline, Berthoud, on Berthoud Designer.
Champions:
Champion boar—Howard Crane, Wellington, on Jack Lee Evans.
Champion sow—Vern Long, Iliff, on Eureka.
Special: Best Chester White boar—Millard Ball, Pierce.

Western Farm Life trophy for sweepstakes boar and sow in Pig club classes at National Western Stock Show. Winner of cup for sow was Herbert Sandstead of Logan county.

Berkshires.

Best boar, any age:
1st—Max Ogle, Greeley, on Epocalis Repeater.
2nd—Merle Ogle, Greeley, on Bus Again.
Best sow, any age:
1st—Max Ogle, Greeley, on Max's Epocal.
2nd—Merle Ogle, Greeley, on Eppington's Defender.
Barrow, farrowed since March 1, 1919:
1st—Donald Bliss, Greeley, on Greeley's Choice.
2nd—Donald Bliss, Greeley, on Prime Enough.
3rd—Donald Bliss, Greeley, on Bliss's Premium.
4th—Donald Bliss, Greeley, on Smooth Boy.
Sweepstakes, prize Silver Loving Cup by Western Farm Life:
Sweepstakes boar, any breed or age—Donald Plumb, Greely, on Plumbs Creation.
Sweepstakes sow, any breed or age—Herbert Sandstead, Willard, on Pleasant Dream.

Best Pig Club Exhibit.

1st—Weld County, care F. A. Ogle, High School Agriculturist, Greeley, with 1,625 points ($25.00.)
2nd—Logan County, care H. A. Sandhouse, High School Agriculturist, Sterling, with 575 points ($15.00).
3rd—Larimr County, care W. S. Hill, County Club Leader, Fort Collins, with 300 points ($10.00).

Winnings were determined on the basis that all members from any one county exhibiting would be rated and totalled according to the following scale:
1st premium placings count 100 points.
2nd premium placings count 75 points.
3rd premium placings count 50 points.
4th premium placings count 25 points.
Champion placings count 100 points.
Sweepstake placings count 100 points.

Pig club members were successful in making the following winnings against breeders in open classes:
1st prize Berkshire boar, farrowed after June 1, by Max Ogle.
Junior champion boar, Max Ogle on Max Epocal.
2nd prize junior Poland China sow pig, by Vern Long.
2nd prize junior Duroc Jrsey sow pig, by Donald Plumb.
3rd prize produce of dam, Duroc class, by Donald Plumb.
5th prize, junior boar pig, Duroc class, by Donald Plumb.

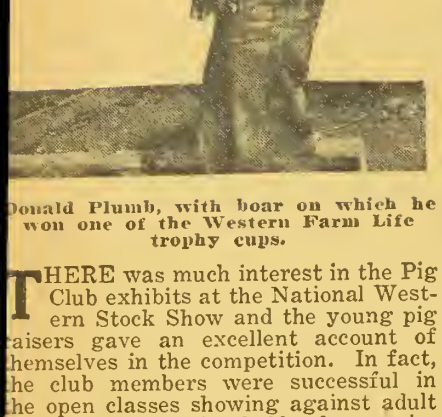
Results of Pig Showing Contest.

1st—Logan Morton, Fort Collins, 42½, 41¼; total, 83¾ per cent.
2nd—Donald Plumb, Greeley, 42½, 41; total, 83½ per cent.
3rd—Donald Bliss, Greeley, 42, 40½; total, 82½ per cent.
4th—Geo. Morton, Jr., Fort Collins, 42, 39¾; total, 81¾ per cent.
5th—Vern Long, Iliff, 41, 37; total, 78 per cent.
6th—Millard Ball, Pierce, 33, 42; total, 75 per cent.
7th—Franklin Collard, Iliff, 40½, 34; total, 74½ per cent.
8th—Lester Winsky, Littleton, 39, 35¼; total, 74¼ per cent.
9th—Rufus Kline, Berthoud, 36, 38; total, 74 per cent.
10th—Herbert Sandstead, Willard, 38¾, 35; total 73¾ per cent.

Other entrants were: Max Ogle, Greeley; Oscar Mennenga, Strasburg; Russell Simms, Fort Morgan; Ellis Johnson, Fort Morgan; Karl Cassatt, Vroman; Wm. Hardman, Pueblo; Paul Vestal, Pueblo; Ralph Eakins, Willard; Alden Hill, Fort Collins; John Reichter, Strasburg; Leonard McIntosh, Cheraw; Helen Blanchard, Wellington; Royal Burkholder, Vona; Helen Thimmigs, Wellington; H. O. Mathias, Greeley; Herbert Ostoff, Lyons; John Bliss, Greeley.

Contestants were graded on a basis of 100 per cent, of which 50 per cent was considered a perfect placing for preparing animal for showing, and 50 per cent a perfect score for handling and showing animals.

"Capable showing as well as proper fitting and development are necessary factors in the show ring," says Pig Club Leader Tingle.



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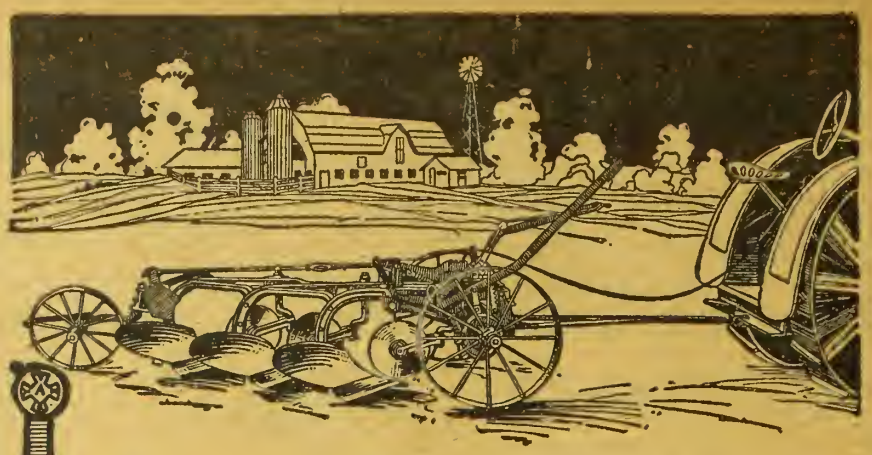

Four Essentials in a Tractor Plow

First—A safe margin of strength in all parts subject to strain, because you can't afford delays when every hour is worth a two-dollar bill.

Second—Simplicity and strength in the power lift device, because delicate or complicated mechanism here is likely to go wrong under the stress of hard plowing.

Third—Convenience of handling, because of loss of time in running a tractor outfit runs into money rapidly.

Fourth—Plenty of clearance between plow bottoms and between front bottom and furrow wheel, to avoid clogging when plowing deeply in trashy or straw-covered fields.

B. F. Avery Tractor Plows

excel in all these respects. Axles, beams, beam braces and coulter stems are of extra size. Power lift device consists of a strong, simple clutch mounted on the furrow axle and directly connected with furrow lever—no chains or sprockets. The wheel box forms the moving part of the clutch, reducing the number of wearing parts.

Only one lever to adjust to change depth of plowing and this can be done without stopping the tractor.

Call on the B. F. Avery dealer and examine this plow.

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LOUISVILLE, KENTUCKY

Two Legal Questions.

Who is supposed to put in and maintain culverts or bridges across irrigation ditches, the land owner or the ditch owner?

Is a person entitled to an additional homestead having used his right in 1879, proved up and mortgaged the homestead and lost it. It was 160 acres.—N. P., Wyoming.

1. It depends upon the agreement between the parties. If there is no such agreement and the statutes of Wyoming do not provide for it then it is the duty of the owner of the ditch in my opinion.—Hamlet J. Barry, Attorney, Equitable Bldg., Denver.

2. We see no reason why you should not be entitled to an additional 160 acres. Section 7 of the law says: "That any person who has made or shall make homestead entry of less than three hundred and twenty acres of lands of the character herein described, and who shall have submitted final proof thereon, shall have the right to enter public lands subject to the provisions of this act, not contiguous to his first entry, which shall not with the original entry exceed three hundred and twenty acres: Provided, that the land originally entered and that covered by the additional entry shall first have been designated as subject to this act, as provided by section one thereof:"

The instructions issued by the land office further specify that the above applies only in states where the enlarged homestead act is in force; also that the additional entry cannot be allowed until both tracts have been designated thereunder. Then it says, "However, in considering allowance of the entry it is not material whether the applicant owns or occupies the original tract."

Let Western Farm Life Service Bureau help solve your farming problems. All questions promptly answered.

When Nature Irrigates Our Crops

POINTS ABOUT FARMING OVER A WATER TABLE.

E. R. PARSONS.

THERE are many places in the dry farming country in basins, valleys and bottoms where a considerable acreage is underlaid with water and it sometimes happens that a man farming such lands is ignorant of the true conditions and attributes his successes to dry farming methods.

A water table at 5, 15 or even 20 feet enhances the value of any land for raising crops, for the moisture will always move up some part of the distance by capillarity. The soil air is always saturated and during cold nights much of the water in it condenses in the upper soil stratum, some of it settling in little beads on the roots of crops—a kind of underground dew. The subsoil of true dry farming land is dry and it contains practically no moisture except what the farmer conserves in it. This condition may prevail for several hundred feet and there is no capillary rise to speak of from such a subsoil, because when precipitation falls, the water spreads out and down until too thin to move any more, then capillary action has ceased and the water is fixed as a film water; but when the supply of water is unlimited down below, it may rise and continue rising by capillarity into the drier soil above, the conductivity of which is determined largely by its texture.

In fine silt soils and subsoils, such as are found along many of the rivers in the lava country, water will often rise ten feet or more keeping them permanently moist. Capillary attraction does not raise water so high in coarse gravel as in fine sand. A certain compactness is necessary for this adhesive action and if the interstitial spaces are too large as in some gravels, the water loses its hold and gravity pulls it back. A layer of clay between strata will often check capillarity or cut it off entirely, for clay is too compact for water to pass and it often happens that on this account moisture may be very close to the surface without showing any signs that would lead to its discovery.

In prospecting for water nothing is handier than a ground augur. It is made by welding a 2-inch wood augur onto a piece of gas pipe with a T joint which screws on for a handle. When it is required to lengthen it the handle is removed and more gas pipe is screwed on. With this simple implement the farmer cannot only discover the subirrigated spots on his farm, but can also keep track of the conserved moisture in his different fields and by making tests of the soil brought up on the core of the augur, can determine the quality and water content of his subsoil at almost any depth he desires. There are only a few trees and plants which will thrive with their roots actually in water; but the stratum above the water table, which is kept permanently moist by the capillary rise is usually in the optimum condition as regards water content for growing vegetation. But in planting trees or crops in such a situation the danger of the ground becoming water-logged by floods must be taken into consideration; also the fact that a water table rises or falls according to the wetness or dryness of the season.

Value of Sub-Irrigated Land.

On the bottom lands of many dry creeks there is often water at no great depth and in choosing a dry farm this point should not be neglected, for land that is sub-irrigated by nature will produce more with less work than land irrigated by man, and a few acres of this kind are something to rely on when the weather is dry and crops are short on the upper end of he farm.

On one of the writer's dry farms there were four or five acres on a creek bottom with water at almost 15 feet. There was a capillary rise which kept the soil damp up to 6 or 8 feet below the surface. This land was planted to alfalfa after fertilizing the very sandy places. The first year the plants did not seem to do any better than those on the higher lands; but the second year a plant could be seen here and there which was branching out and growing in every direction; these had got down to water. The third year a lot of them made a start and by the fourth year the whole patch was down to the wet zone making three heavy cuttings for the season equal to any irrigated alfalfa.

Alfalfa will last longer above water at ten or more feet than it will where the water level is close to the surface, for after heavy, wet snows the water will rise and zero weather freezing the wet ground solid may kill lots of it out.

Creek bottom land is sometimes apparently nothing but a sandbar, but nevertheless it may be underlaid with some rich silt or layers of heavy loam. Such land is always worth prospecting, for land that is poor on top but rich below will always raise alfalfa, and if there is a permanent moisture underneath, it will be well worth the trouble to fertilize the top a little in order to start it, for once rooted it will take care of itself. Sweet clover will grow on land too sandy for alfalfa, but has to be resown at intervals.

Being a perennial, alfalfa is one of the best crops to plant on bottom land, for its roots will keep on going year after year until it reaches permanent moisture, but it should be noted that they will not go through a dry layer. Supposing there is a water table at 10 feet and capillary action causes a damp stratum to form above it within 4 feet of the surface, then the top 4 feet will be dry except for the precipitation which goes into it. If alfalfa is planted on this when it is wet down only 2 feet there will be 2 feet of dry dirt between the alfalfa roots and the permanent moisture, and if the season turns dry the crop may dry out before it becomes established.

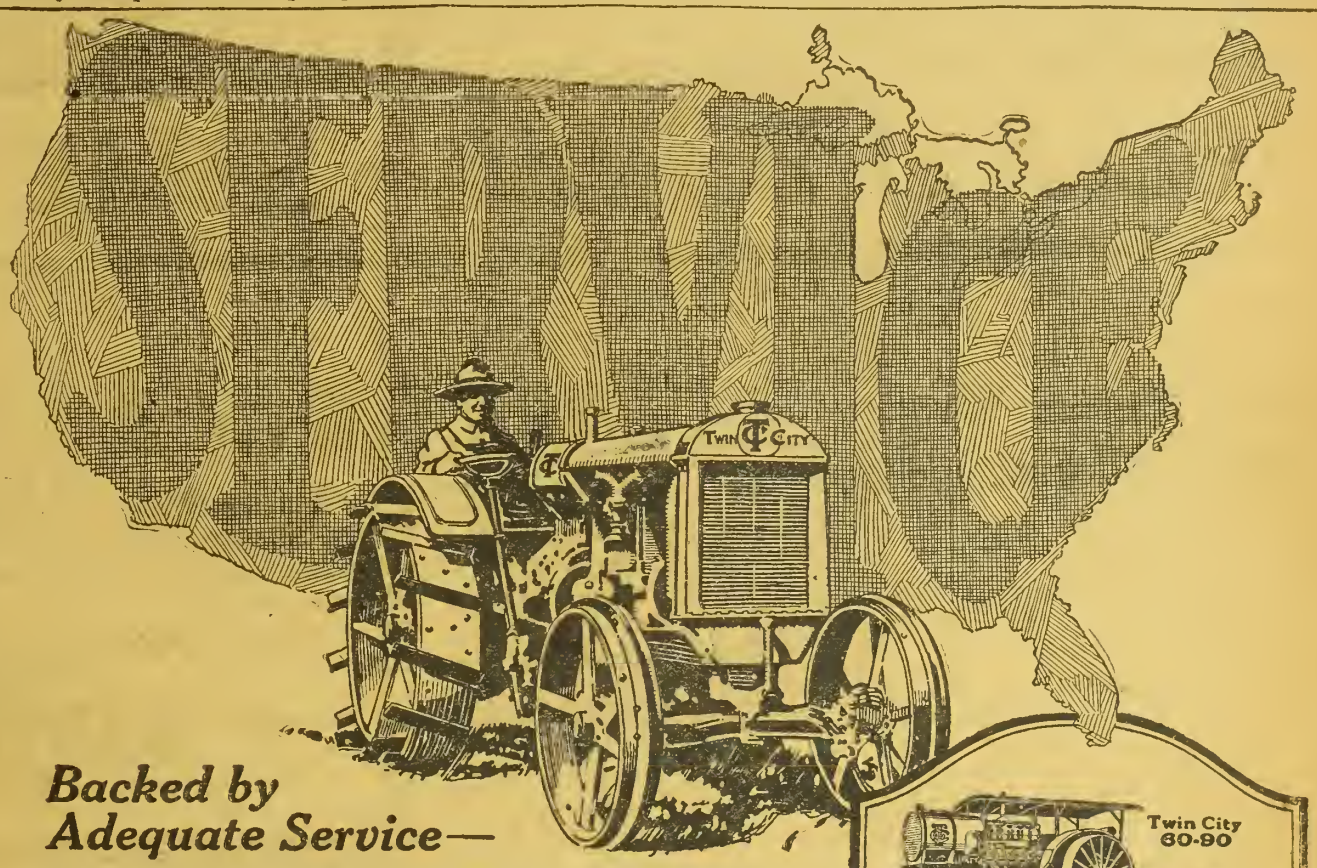
In order not to take any risks of this kind, the farmer, after determining the true conditions with the help of his ground augur, plows and fallows the land until he has sufficient moisture conserved to wet up the top 4 feet, and he then has a moist root bed all the way through with enough water in the upper layer to carry the alfalfa until it strikes the permanent moisture. But when the water rises by capillarity to within a few inches of the surface he can plow just deep enough to start the crop, pack it to help capillary action and the roots will take care of themselves, for they can penetrate any soil that is moist. In this case it would be a mistake to plow deeply and plant right away, for deep loose plowing cuts off capillarity, and if the weather turns dry it is possible for the stand to be ruined by drouth before the roots reach the subsoil. Of course, this does not often happen, but it is well to be on the safe side and make it a rule never to plant deep plowing until it has been settled and soaked up with precipitation. In dry farming practice the principal factors are deep plowing to provide a deep seed bed and fallowing to fill it with moisture. Many failures are made by plowing and planting immediately, especially when it is late in the season.

Effect on Various Crops.

Corn is a good crop on subirrigated land, for although plenty of moisture increases the size of the stalk, it also makes for larger ears and more of them. Oats are rather inclined to run to straw, but this is an advantage when they are grown for hay. Barley runs heavily to grain and straw, but wheat is more inclined to rust on the bottoms than on the uplands. Sudan grass is in its element on a hot damp bottom and often makes a prodigious growth.

A fine garden can be made on subirrigated land where the soil is good; but if a clearing is made among the willows, cottonwoods, etc., plenty of space must be left between the trees and the garden, for it is impossible to raise anything satisfactorily amongst tree roots which will often reach out from the tree a distance equal to its height. The writer has seen orchard trees planted four feet above a water table; they all died out in the course of a few years, but higher up the slope where it was 10 feet to water they did very well. Apples and plums will stand more water than cherries, which seem to do better with plenty of cultivation and room to grow.

Let Western Farm Life Service Bureau help solve your farming problems. All questions promptly answered



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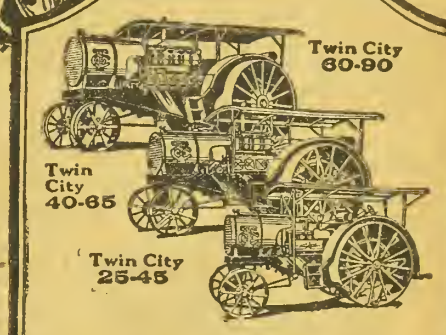

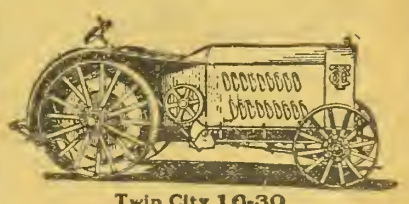

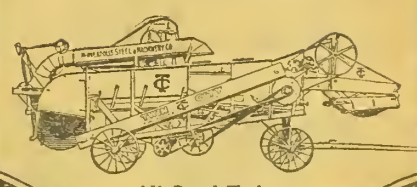

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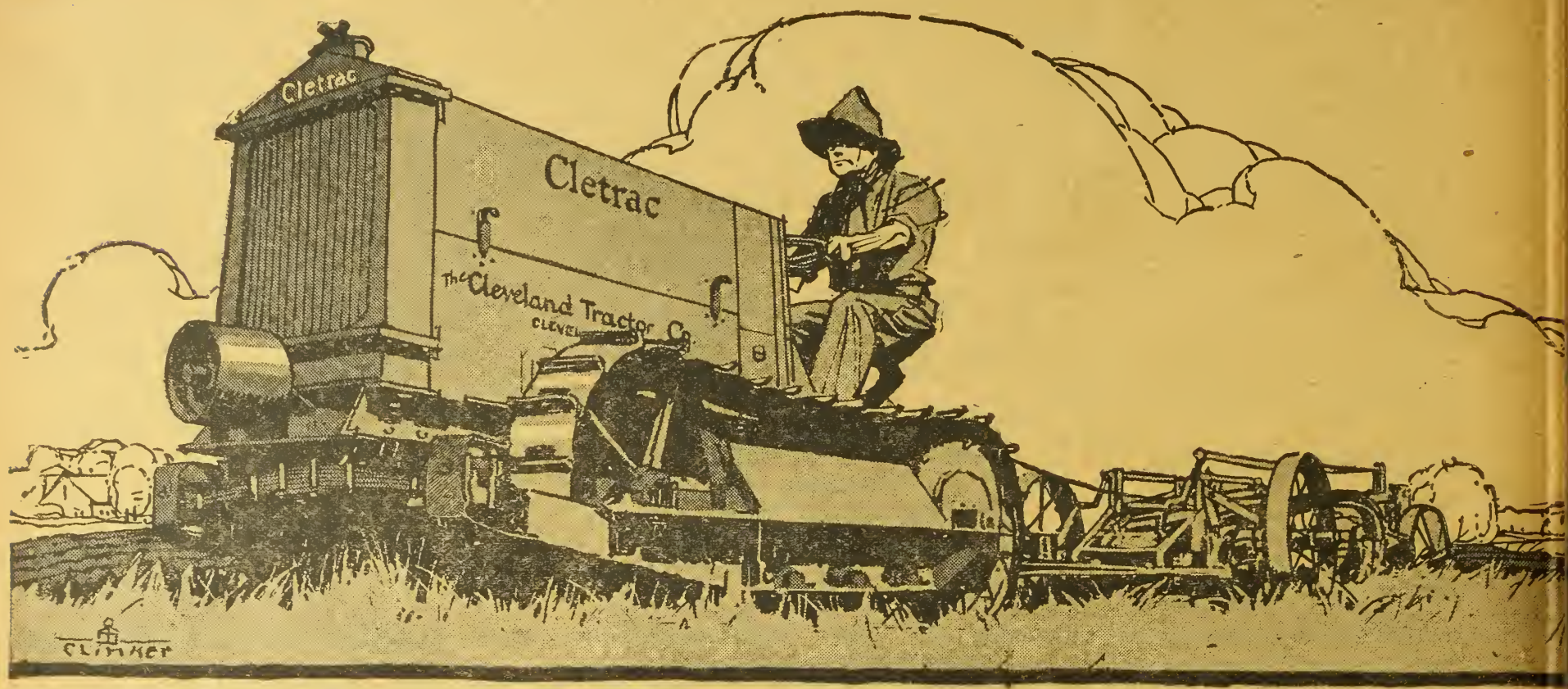

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The tide has turned. The *big* demand today is for the small tank-type tractor—for the Cletrac—that goes further than the simple job of plowing and takes the place of horses over plowed ground and seedbed, working faster and at lower cost.

It wanted only the marvelous success of the Cletrac in 1919 to make the bulk of farmers *everywhere* put their "OK" on the small tank-type. And now because the Cletrac *is* the "fashion"—because a greatly increased output, means a lower manufacturing cost—*we can offer a better Cletrac and still reduce the cost to you.*

With more power and improved construction, 1920 will prove to any farmer, anywhere, that Cletrac farming is *profitable* farming.

The Cletrac is the right size and type for almost any farm, the one tractor adapted to all conditions. It has proved its ability to stand up to its work. And now that the public has recognized its worth, it is out in front to stay.

The quick popularity of the Cletrac is not an accident. Engineers and army experts long ago saw the great advantages of the endless track as a device for turning motor power into drawbar pull. The farming public only waited to see the same principle built into a *serviceable* small tractor. The Cletrac proved to be that tractor. It made lifelong friends from the start.

One Cletrac on the small farm—a "fleet" of them on the big ranch—makes an ideal all-year power plant. The Cletrac is light, but powerful, with plenty of pull for heavy plowing and work in the hills. And it rides the low spots or plowed ground without miring, but still pulls a profitable load.

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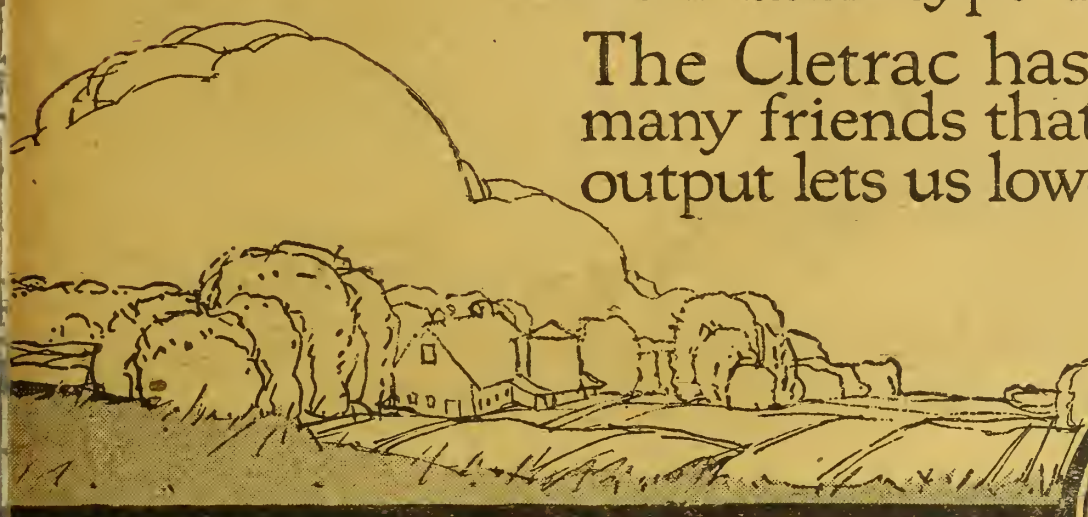

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the improved Cletrac you get all the tle refinements an honest builder makes ith each year of brass-tack experience. nd you get certain big features that make a better performer than ever.

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e new 8-inch track—one-third wider—eans a lighter tread and stronger grip on e ground—makes the Cletrac that much ore sure-footed and adds to the life of e tractor itself.

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ur new water clarifier takes out all the dust at would grind your pistons and overheat ur motor—moistens the air and makes e engine run as smooth at noon as your to on a dewy night.

Here is a tractor, always a vote-getter, now more powerful, now better built, and costing you less. No wonder the best tractor dealer in your community wants to handle it. A tractor that makes friends for itself makes satisfied customers for him.

Right through the year—hauling manure in the Winter—plowing, harrowing and seeding in the Spring—harvesting, threshing and silo-filling—road-building, ditching and grading—shelling corn and sawing wood—here's a tractor you can depend upon.

It's a tractor that has all-year service built into it, one that cuts farming costs by handling *all* jobs well, not just a few. And over 1200 distributors and dealers, with repair stocks near you, are backing it up to make every Cletrac owner a booster.

There's a good dealer close by who will gladly show you a Cletrac. Talk to him now. Get ready to start Cletrac farming this Spring. Line up with a majority and make power-farming really worth while.

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Send in the coupon, or see the Cletrac dealer at once.
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How Holyoke Does It.

A. C. CAUBLE.

It is the farmer's business to produce food for the consumption of the whole world and he has succeeded marvelously in the past, and will in the future, as well. But in the future, as now, he will pay a little more attention to marketing his produce as the farmers of Holyoke, Phillips county, do.

You may know as many of the old settlers of eastern Colorado know, that just a few short years ago the people of Denver did not seem to know or care anything about eastern Colorado. I remember bing in Denver when the great fair and exhibition was held at Overland Park. Phillips county had an exhibit and it was partly under my care. When the visitors would pass viewing our exhibit they would ask where it was grown and I would tell them "Phillips county," they would nearly always say, "Why, that's in Kansas." You see they did not think that the dry land of eastern Colorado was anything but a worthless waste. But notwithstanding the prejudice against eastern Colorado some of the old settlers that have lived here since the eighties, have lived to see it made famous in the past 35 years. I doubt if there is a county in the state of Colorado that ships out as much grain, livestock and feed as does Phillips county. As an illustration of the business done here in stock I will give you the statement for the past year, 1919, of the Farmer's Business Association of Holyoke, this being only one of the four shipping points in the county, besides Venango just over the line in Nebraska, which ships a lot of Phillips county stock and grain. The report of the Farmer's Business Association of which I am secretary-treasurer, is as follows:

Cattle shipped, 734 head brought $32,-308.69.

Hogs shipped, 4,796 head brought $220,300.89.

Net price per 100 lbs., $18.86.

Average weight of hogs, 243 lbs.

No. of dead hogs, 11.

No. of crippled hogs, 17.

Average expense per 100, $0.90.

This association has surely been rightly named, the Farmer's Business Association, for it is a real business concern. This does not mean that this is all the stock shipped from Holyoke. There has been a number of carlot shipments by a single farmer, or where two or three farmers combine their shipments.

The Farmer's Business Association has saved the farmers in the vicinity of Holyoke may thousands of dollars in the past year and we begin the new year with a bright prospect of greater shipments for 1920, as each year has given us increase, over the previous year. We can expect that 1920 will exceed any previous year and we think it pays for the farmers to organize. Am enclosing copy of by-laws of our association which you are at liberty to publish with this letter if you wish, as a guide to other communities desiring to organize similar associations:

Articles of Incorporation.

First.—The name of this association shall be The Farmers' Business Association, of Holyoke, Colo.

Second.—The principal place of business shall be at Holyoke, Colo.

Third.—The object of this association shall be the shipping of livestock of its members.

Fourth.—There being no shares of stock an entrance fee of one dollar entitles one to membership and to one vote at any regular or special meeting.

Fifth.—This association shall not subject itself to any indebtedness.

Sixth.—The existence of this association shall not terminate except by giving ten days' notice prior to any meeting and a three-fourths majority vote of its members.

Seventh.—The officers of this association shall be a president, vice president, secretary-treasurer and a board of directors; electel annually, on the first Saturday in January.

Eighth.—This association shall have power to make its by-laws, change the same and amend its articles of incorporation by giving ten days notice prior to any meeting, and a three-fourths majority vote of its members.

BY-LAWS.

Membership.

Article 1. Section 1.—Any farmer, stockman, or feeder, may become a member of The Farmers' Business Association of Holyoke by paying a fee of one dollar ($1.00). Such membership fee entitles him to one vote at any meeting.

Sec. 2.—No proxies allowed at any meeting.

Sec. 3.—Ten members shall constitute a quorum at any meeting.

Dutics of Officers.

Art. 2. Sec. 1.—The president shall preside at all meetings whether annual or pecial, and perform such other duties as may be required of him.

Sec. 2.—The vice president shall perform the duties of president in his absence, or in his inability, or in his refusal to act. Should both be absent or refuse to act then the members present may elect one of their members to act as president pro tem.

Sec. 3.—The secretary shall keep record of the minutes of all regular or called meetings, issue notices to members notifying them of said meetings, attend to all correspondence and perform such other duties as he may be called upon by the president or by the vote of the members of the association present at any meeting.

Sec. 4.—The treasur r shall be the custodian of all funds of the association. Shall keep a full and complete record of all receipts and disbursements. Shall pay out no money except on the order of the president of the board of directors and attested by its secretary. At the expiration of his term of office he shall surrender to his successor all his books, papers and money.

Sec. 5.—The manager shall have exclusive control of all the property of this association, receive all consignments of livestock, take care of them, and ship them, using his best judgment in securing the highest market price. While he has full charge of all livestock entrusted to him he shall not be held responsible for any unavoidable loss in yard or transit. The manager shall settle for each consignment on the returns of said shipment. The compensation of the manager shall be 5 cents per 100 pounds net weight. In case the manager hall be required to accompany any of the shipments he shall receive his actual expenses.

Art. 3. Sec. 1.—The board of directors after its election shall elect its officers. A president, vice president and secretary-treasurer.

Sec. 2.—The president of the board shall perform the dutics usually devolving upon such officer. Shall sign all orders drawn upon the treasurer and all undertakings entered into by order of the board of directors and perform such other duties as may be required of him by the board.

Sec. 3.—The vice president shall perform the duties of the president during his absence.

Sec. .—The secretary shall be the clerk of the board of directors. He shall keep a true and correct record of all the proceedings of the board and transcribe the same into a permanent record book. He shall have charge of the book, papers and records of the board of directors. He shall prepare the annual report for the association, attest all orders on the treasurer, making proper records of the same and at the expiration of his term of office shall deliver all the books, papers and money to his successor in office.

Sec. 5.—The board of directors shall meet on the first Saturday of each month to audit the reports of the manager and perform such other duties as may be incumbent upon them.

Art. 4. Sec. 1.—These articles of incorporation and by-laws may be revised or amended by the association by giving ten (10) days notice prior to any meeting, and a three-fourths majority vote of its members.

Art. 5. Sec. 2.—The annual meeting of The Farmers' Business Association shall be held the first (1st) Saturday in January of each year.

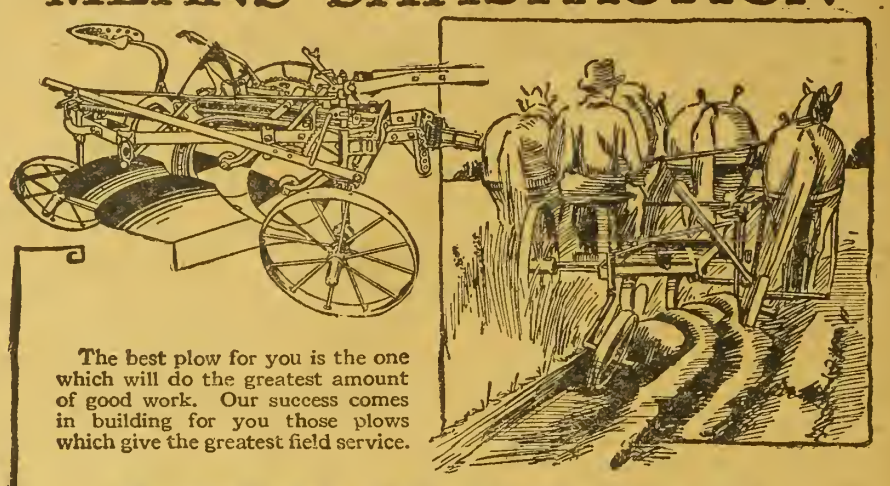
The Side Delivery Rake.

I would like to have discussed in your paper the merits or demerits of the side delivery rake as used to cure alfalfa hay. I know some who say they would not be without it and others who have them and say they cannot make them work satisfactorily.—J. W. Perryman, Arapahoe county, Colo.

It is true, opinions differ regarding the side delivery rake. We hope some of our readers who have had experience with that type of rake will write us what that experience has been, whether satisfactory or not. Farmers' Bulletin No. 943, on Haymaking, issued by the U. S. Department of Agriculture, has this to say on the subject:

"The side delivery rake has one advantage over the sulky rake. When the curing is done in the swath the crew can start taking the hay from the windrows as the side delivery rake has made one double windrow across the field, whereas when the sulky rake is used they will have to wait until the rake has gone several times across the field. Some hay growers object to the use of the side delivery rake for clover and alfalfa, claiming that it breaks off so many leaves as to cause a serious loss of the most nutritious part of the plant. This is undoubtedly true if the hay is raked when sufficiently cured to be put into the stack or barn, but this objection does not hold good if the raking is done when the leaves are merely well wilted."

A MOLINE PLOW MEANS SATISFACTION



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Better plows than these cannot be bought at any price. With them you can do good plowing at all times and under all conditions. The reason why you get so much field service out of these plows is because they possess every plow improvement that has shown its worth. In one particular feature they are the most improved of all the frame type plows. They have a perfected foot lift device that gives the operator two possibilities in raising the bottoms—

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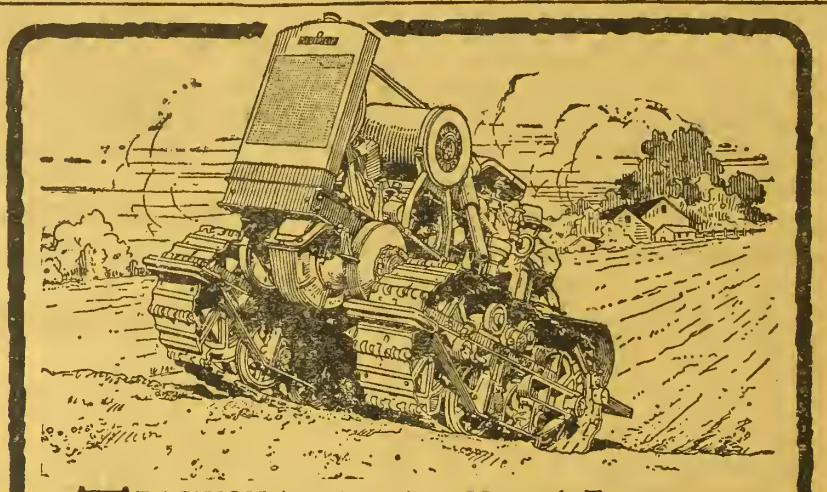

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NEVERSLIP Monarch Tractors

Wet Pulp and Alfalfa.

Results of a test of the value of beet tops and silage when fed to steers were made public during the National Western Stock Show by the animal husbandry department of the Colorado Agricultural College in a report on the 40-day preliminary period of feeding with 6 lots of steers. These steers are being fed as follows:

Lot 1, wet beet pulp and alfalfa hay.

Lot 2, beet tops pastured in field and alfalfa hay.

Lot 3, beet tops dried, hauled and fed in lot and alfalfa hay.

Lot 4, beet tops, silage and alfalfa hay.

Lot 5, corn silage and alfalfa hay.

Lot 6, alfalfa hay alone.

The alfalfa hay was self fed in all lots, being kept before the steers at all times. The other feeds were given twice daily, all that the steers would clean up, except the beet top silage, which was limited to 24 pounds daily per steer. A complete report on the experiment will not be made until after these steers are marketed in the spring. However, it will be interesting to read the conclusions from the preliminary period of 40 days as they were given out at the stock show. The experiment is under the direct supervision of Mr. E. J. Maynard, one of Prof. Morton's assistants in the animal husbandry department.

Wet Beet Pulp: This feed in conjunction with alfalfa hay produced the most gains and at the least cost per pound of any ration used.

Beet Tops Pastured in Field: Owing to the extreme weather conditions and the resulting low gains, the cost of gain was abnormally high this year. The fact was demonstrated also that under conditions of this sort there is a very high loss of tops. In order to give a comparison of the value of pasturing tops in a good year, the results on pasture last year have been figured on present feed costs, and the cost of gain in 1918 was found to be 17.5 cents per pound.

Beet Tops Dried and Hauled to Lot: This practice proved much more economical than pasturing tops in a bad year, and about on a par with pasturing them in a good year.

Beet Top Silage: Fed in limited quantities the beet top silage produced gains second only to the wet pulp and at a low cost considering the comparatively high price of the tops per ton.

Corn Silage: The question of the advisability of adding silage to a straight alfalfa ration is of especial interest in some sections of Colorado, particularly in the Western Slope where a large number of cattle are being fattened at present on alfalfa hay alone. The rations fed in this and the following lot were planned to determine the replacement value of corn silage and other feeds when fed along with alfalfa.

The saving effected this year by adding the corn silage alone is apparent, a little less than a ton of silage saving 1,664 pounds of alfalfa in putting 100 pounds of gain on steers.

Alfalfa alone: This ration is made necessary as a check for Lot 5. Alfalfa hay fed alone has too narrow a nutritive ration (1:3.9) to give best results. In other words it contains too little of digestible carbohydrate equivalent in comparison to protein.

Present Experiment: (December 22, 1919 to April 10, 1920). The steers are now being carried on the following rations during a 110-day period:

Lot 1 Beet molasses, cotton seed cake, wet pulp, alfalfa hay.

Lot 2 Beet molasses, cotton seed cake, wet pulp, alfalfa hay.

Lot 3 Dried molasses beet pulp, cotton seed cake, alfalfa hay.

Lot 4 Dried molasses beet pulp, cotton seed cake, beet top silage, alfalfa hay.

Lot 5 Beet molasses, cotton seed cake, corn silage, alfalfa hay.

Lot 6 Alfalfa hay alone.

HORSE AWARDS.

Awards in horses and mules at the National Western Stock show follow:

Percheron.

Judges—A. P. Coon, Lincoln, Neb., and Geo. A. Heyl, Washington, Ill.

Stallion, 1 year old and under 2 (7 shown)—1st, Truman's Pioneer Stud Farm, Bushnell, Ill.; on McCormick's Major; 2nd, Elmwood Stock Farm, Broomfield, Colo., on Elmwood Robespierre; 3rd, Colorado State Reformatory, Buena Vista, Colo., on Iocarhel.

Mare, 3 years old or over (18 shown)—1st, T. B. Bowman, Boone, Neb., on Dorothy B; 2nd, Gossard Breeding Estates, Chicago, Ill., on Kiocottie; 3rd, Elmwood Stock Farm, Broomfield, Colo., on Lacerie.

Filly, 2 years old and under 3 (5 shown)—1st, T. B. Bowman, Boone, Neb., on Lamonge; 2nd, T. B. Bowman, on Margaret; 3rd, Elmwood Stock Farm, on Mlle. De Valois.

Filly, 1 year old and under 2 (10 shown)—1st, Elmwood Stock Farm, on Elmwood Come; 2nd, T. B. Bowman, on Oberto Kontact; 3rd, Elmwood Stock Farm, on Elmwood Countess.

Three animals, either sex, get of one sire (7 entries)—1st, T. B. Bowman; 2nd, T. B. Bowman; 3rd, Elmwood Stock Farm.

Two animals, either sex, produce of one dam (6 entries)—1st, T. B. Bowman; 2nd, T. B. Bowman; 3rd, Gossard Breeding Estates.

Stallion, 4 years old or over—1st, T. B. Bowman, on Calyps; 2nd, Elmwood Stock Farm, on Negro; 3rd, Truman's Pioneer Stud Farm, on Oliver.

Stallion, 3 years old and under 4—1st, T. B. Bowman, on Houloux II; 2nd, Truman's Pioneer Stud Farm, on Pickacan.

Stallion, 2 years old and under 3—1st, Truman's Pioneer Stud Farm, on Dan Roxey; 2nd, T. B. Bowman, on Kommandor; 3rd, T. B. Bowman, on Carchaleux.

Colt, either sex, under 1 year—1st, Elmwood Stock Farm; 2nd, T. B. Bowman; 3rd, Elmwood Stock Farm.

Champion Stallion—T. B. Bowman, on Houleux II.

Belgians.

Stallion, 4 years old or over—1st, Joseph Rouselle, Seward, Neb., on Bourbon; 2nd, Joseph Rouselle, on Flasko II; 3rd, H. Bert Cave, Littleton, Colo., on Romanus.

Stallion, 3 years old and under—1st, Archie G. Anderson, Encampment, Wyo., on Jasper Cousine; 2nd, Glendale Stock Farm, Aspen, Colo., on Gaston.

Stallion, 2 years old and under 3—1st, C. V. Owens, Greeley Colo., on Mt. Sterling Boy; 2nd, Joseph Rouselle, on Germain de la Lys 11; 3rd, C. V. Owens, on Mt. Sterling Major.

Stallion, 1 year old and under 2—1st, Truman's Pioneer Stud Farm, Bushnell, Ill., on Bushnell Baron de Vlad; 2nd, H. Bert Cave, on Prince De Fouleng, Jr.; 3rd, C. V. Owens, on Mignon, Jr.

Mare, 3 years old or over—1st, C. V. Owens, on Fadtte; 2nd, H. Bert Cave, on Ottlie; 3rd, H. Bert Cave, on Maga.

Filly, 1 year old and under 2—1st, C. V. Owens, on Glendale Blossom; 2nd, Glendale Stock Farm, Aspen, Colo., on Glendale Princess.

Filly, 2 years old and under 3—1st, Glendale Stock Farm, on Glendale Queen.

Colt, either sex, under 1 year old—Glendale Stock Farm, on Glendale.

Three animals, either sex, get of one sire—1st, Glendale Stock Farm.

Two animals, either sex, produce of one dam—1st, Glendale Stock Farm.

Champion Stallion—Truman's Pioneer Stud Farm, on Bushnell Baron de Vlad.

Reserve Champion—Roussell & Son, on Bourbon 9383.

Champion Mare—C. V. Owens, Greeley, Colo., on Faddette.

Reserve Champion—C. V. Owens, Greeley, on Glendale Blossom.

Clydesdale and Shire.

Stallion, 4 years old or over—1st, Frank H. Miller, Lafaytte, Colo., on Moulton's Chief; 2nd, Truman's Pioneer Stud Farm, on Dovecote Royal William.

Stallion, 3 years old and under 4—1st, Truman's Pioneer Stud Farm, on Edgewood Charmer; 2nd, Joseph Rousselle, on Wryland's Brown.

Stallion, 2 years old and under 3—1st, Truman's Pioneer Stud Farm, on Williams Dan Patch.

Stallion, 1 year old and under 2—1st, Truman's Pioneer Stud Farm, on Hawthorn Manor.

Mare, 3 years old or over—First, Truman's Pioneer Stud Farm, on Truman's Queen Blusterer; 2nd, Joseph Rousselle on Leona Pride; 3rd, Ralph C. Miller, Lafayette, Colo., on Star Light Daisy.

Registered Breeding Horses.

Standard bred stallion, 3 years old or over—1st, Harry Newman, Chicago, Ill.

Thoroughbred Stallion, 3 years old or over—1st, Truman's Pioneer Stud Farm, on Bushnell Lad.

American Saddle Stallion, 3 years old or over—1st, A. A. Hunter, Walden, Colo., on Rex's Chief A.; 2nd, J. O. D. Ranch, Aroya, Colo., on Noble Grand; 3rd, R. B. Brooks, Colorado Springs, Colo., on Excelsior Squirrel.

Grade Draft Horses.

Draft mare or gelding, 3 years old or over—1st, Ralph C. Miller, Lafayette, Colo.; 2nd, H. Bert Cave, Littleton.

Brood draft mare with colt, under 1 year old—1st, Ralph C. Miller.

Grade draft mare, 3 years old or over—1st, Ralph C. Miller, Lafayette, Colo.; 2nd, H. Bert Cave, Littleton, Colo.

Jacks and Jennets.

Jack, 3 years old or over—1st and 2nd, M. T. Bernard, Grand Island, Neb.; 3rd, John Miles, Wichita, Kan.

Mules.

Mule, 3 years old or over—1st, John E. Burns, Longmont, Colo.; 2nd, Larimore & Wilson Mule Co., Benkleman, Neb.; 3rd, John E. Burns, Longmont.

Mule colt, under 1 year—1st, J. A. Osner, Denver; 2nd, John H. Farmer, East Lake, Colo.; 3rd, J. A. Osner.

Pair of mules, weighing over 2,400 pounds—1st, John E. Burns, Longmont, Colo.; 2nd, Larimore & Wilson Mule Co., Benkleman, Neb.

Pair of mules weighing under 2,400 pounds—1st, John F. Burns, Longmont, Colo.

Stallion Fund Specials.

Percheron stallion, 3 years old or over—1st, Elmwood Stock Farm, Broomfield, Colo., on Negro; 2nd, Gossard Breeding Estates, Axial, Colo., on Kantonal 2nd; 3rd, Gossard Breeding Estates, on Kapitaine.

Belgian stallion, 3 years old or over—1st, Glendale Stock Farm, Aspen, Colo., on Gaston; 2nd, H. Bert Cave, Littleton, Colo., on Ramanus.

Clydesdale or Shire Stallion, 3 years old or over—1st, Frank H. Miller, Lafayette, Colo., on Moulton's Chief.

American saddle-bred stallion, 3 years old or over—1st, A. A. Hunter, Walden, Colo., on Rex Chief A.; 2nd, J. O. D. Ranch, Aroya, Colo., on Noble Grand; 3d, R. B. Brooks, Colorado Springs, Colo., on Excelsior Squirrel.

Two animals, any age, either sex, get of one sire—1st, Glendale Stock Farm; 2nd, Elmwood Stock Farm; 3rd, Gossard Breeding Estates.

Stallion colt, under 1 year old, any draft breed—1st, Elmwood Stock Farm, on Elmwood Comte; 2nd, Frank H. Miller, Lafayette, on Starlight Chief; 3rd, Gossard Breeding Estates, on Glendale.

Filly colt, under 1 year, any draft breed—1st, Elmwood Stock Farm, on Elmwood Countess; 2nd, Glendale Stock Farm, on Glendale Pet; 3rd, Gossard Breeding Estates, on Grencia.

Draft stallion colt, under 1 year old, by registered sire—1st, Elmwood Stock Farm; 2nd, Frank H. Miller; 3rd, Gossard Breeding Estates.

Draft filly colts, under 1 year old, by registered sire—1st, Elmwood Stock Farm; 2nd, Glendale Stock Farm; 3rd, Gossard Breeding Estates.

Mule colt, under 1 year old, by registered sire—1st, J. A. Osner & Son; 2nd, J. H. Farmer; 3rd, H. A. Osner & Son.

Champion colt, under 1 year—Elmwood Stock Farm, on Elmwood Charmer Count. Reserve—Elmwood Stock Farm, on Elmwood Countess.

Mule, 3 years old or over—1st, John E. Burns, Longmont, Colo.; 2nd, John H. Farmer, East Lake, Colo.; 3rd, John E. Burns.

Pair of mules in harness—1st, John E. Burns, Longmont, Colo.; 2nd, John H. Farmer, East Lake, Colo.

Jack, 3 yars old and under 4—1st and 2nd, A. R. Laws, Denver.

Jack, 1 year old and under 2—1st, J. O. D. Ranch, Aroya, Colo.

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Better Sires, Better Livestock

REPORT OF PROGRESS IN GOVERNMENT CAMPAIGN.

THAT the use of purebred sires is usually a forerunner to ownership of well-bred livestock in the various classes and breeds is shown by data on breeding just made public by the Bureau of Animal Industry, United States Department of Agriculture. The facts and figures compiled are based on records of the "Better Sires—Better Stock" campaign, which at the close of 1919 had been in progress just three months. A greater quantity of data will be needed before conclusive deductions may be made, but the following facts are considered of unusual interest to livestock owners:

The use of purebred sires appears to lead automatically to the ownership of a considerable quantity of purebred female stock.

The use of purebred sires apparently results also in the culling out of scrub females, (judging from the small proportion of scrub females), to grade, crossbreds, and purebred female animals owned by purebred-sire users.

Of all female stock owned by persons enrolled in the better sires campaign at the end of the year, 71 per cent were purebred, 26 per cent were grades and crossbreds, and 3 per cent were scrubs.

The scrub females are believed to be the remnants of former inferior stock before purebred sires were used, since purebred sires lead automatically to either purebred, crossbred, or grade offspring, depending on the blood lines of the females used.

The percentage of purebred females found in herds and flocks owned by purebred-sire users was noticeably similar for the various classes of animals. In cattle the per cent of purebred females was 63.5, in swine, 64, in sheep, 63. The per cent of scrub females in the same classes was: cattle, 3.6, swine 2.0, sheep 6.4.

Poultry figures showed the smallest per cent of scrub females in flocks headed by sires of pure breeding, the figure being 1.8.

Knowledge about the breeding of livestock in the "Better Sires—Better Stock" campaign is obtained with special care. First, the owner of the stock lists his animals kept for breeding on the enrollment blank in accordance with the official definitions for the various classes of animals with respect to their percentage. As the better-sires slogan indicates, all males must be purebred and of good quality.

Female stock may be of any breeding and spaces are provided for the listing of purebred, grade, crossbred, and scrub females. Then the classification is approved by the county agent in the county where the livestock owner lives. In the relatively few cases where there is no county agent, the written indorsement of the blank by two experienced and disinterested livestock owners is required.

Every person agreeing in writing, on the blank furnished, to use only purebred sires in his breeding operations receives an emblem of recognition issued co-operatively by the United States Department of Agriculture and the state in which he lives.

Though pointing out the foregoing observations—and especially the tendency for purebred sire owners to acquire purebred females—the Department of Agriculture does not urge purebred female stock on the average farm. Whether purebred females should be kept is a matter of individual judgment, depending on circumstances which the livestock owner is best able to know. The successful breeding of purebred livestock as a business calls for close attention and considerable experience, both in production and marketing.

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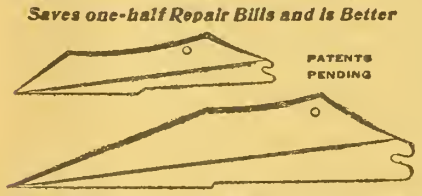

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Then this immense stock—a hundred thouand dollars worth—goes over the counter to "first come, first served." We're giving you a chance NOW to

Reserve Your Needs By Mail

But don't order for this season only—for next winter, too. You may never again see bargains like these. Early orders will be shipped at once. Write us quickly how many of each. DON'T WAIT!

BLANKETS—Olive Drab Wool. Size 66"x84". Thoroughly sterilized and renovated by Government methods. A slight defect here and there, but all such have been carefully mended. Perfectly good for many seasons to come ..... **$5.31** Prepaid.

SHIRTS—U. S. Regulation, Olive Drab Wool. Neatly repaired where needed. Sizes 14½, 15, 15½ and 16 only. Here's the best buy yet. A good wool Army shirt at the price of an ordinary cotton shirt. Order two or three now while you can..... **$2.29** Prepaid

BRAND NEW, PURE WOOL SOCKS—heavy natural grays and—think of it, men!—you can snap these up now at **63c a pair, prepaid.**

LIGHT WEIGHT WOOL DRESS SOCKS—also brand new—in black and natural gray. Army style double top prevents garter from tearing. You couldn't begin to match these socks for a dollar. While they last—

58c a pair, prepaid!

Use draft, postal or express money order and send by next mail—sure.

SCOTT ARMY GOODS STORES *Woolens Dept. C OMAHA, NEBR.*

Reference: Any Bank in Omaha.

Potato Exhibit Train.

A potato exhibit car is to be operated early in March by the Agricultural Department of the Burlington and Colorado & Southern railroads, co-operating with the Agricultural colleges, the Farm Bureaus, county agents and business men of towns to be visited in Colorado, Wyoming and Nebraska. This car will carry seed potato exhibits and a showing of different varieties suitable to the territory to be covered. It is planned to stage a farmers' contest in identifying different varieties of potatoes in each town visited. Local exhibits also will be shown at various points where half day stops are planned, for the purpose of giving lectures on seed selection and demonstrations in seed treatment, seed cutting and the like.

The car will be in charge of J. B. Lamson, agriculturist for the Burlington at Chicago, and Earle G. Reed, western agricultural agent for the two railroads interested. In Colorado the lecturers will include Prof. E. P. Sandsten, horticulturist of Colorado Agricultural College; William H. Paul, a successful potato grower from El Paso county, and representatives of the state farm press. In Wyoming, the railroad agriculturists will have the help of Prof. A. E. Bowman, director of extension, and Prof. T. S. Parsons, extension agronomist for the state university, and others. For the Nebraska meetings, R. H. Howard, potato expert of the state university; H. O. Werner, chief inspector for the Nebraska Potato Improvement committee; George A. Williams, specialist in marketing; Jacob Pedrett, president of the Nebraska Potato Improvement Association and others will assist. Following is the schedule of stops to be made by the exhibit car:

Walsenburg, Colo.—Monday, March 1.
Elbert, Colo.—Tuesday afternoon, March 2.
Eastonville, Colo.—Tuesday evening, March 2.
Elizabeth, Colo.—Wednesday, March 3.
Fort Morgan, Colo.—Thursday, March 4.
Carpenter, Wyo.—Friday, March 5.
Keota, Colo.—Saturday afternoon, March 6.
Cheyenne, Wyo.—Saturday evening, March 6.
Federal, Wyo.—Sunday, March 7.
Chugwater, Wyo.—Sunday, March 7.
Wheatland, Wyo.—March 8.
Dwyer, Wyo.—March 8.
Worland, Wyo.—March 9.
Manderson, Wyo., Basin, Wyo., Lovell, Wyo.—March 10.
Deaver and Powell, Wyo.—March 11.
Douglas and Lingle, Wyo.—March 13.
Nebraska from the 14th to the 18th.
Sterling, Colo.—March 19.

Spuds Graded by Score Card at Western Show.

(Continued from Page 3.)

cially in the production of seed potatoes, if proper methods are followed. The western potatoes are preferred by buyers, but there remains much to be learned by the western growers in regard to grading and marketing methods before they can compete successfully with the northern and eastern growers in market potatoes. A few meetings like the one held at Denver, however, will go far toward putting the western growers on the right track.

The Western Potato Show did not draw the crowds it should have drawn on account of the location. Since it was held at the time of the stock show, it should have been located near the stockyards, but there seemed to be no building available. Many more people should have seen the exhibits. As it was, only those especially interested in potato growing sought out and studied the exhibits. Since the potato show is to be an annual event, many changes for its improvement will doubtless be made before another year. There is no reason why the Western Potato Show should not become as important an institution in its way as the Western Stock Show, and accomplish as much good.

Trophy Awards.

Best market exhibit, Colorado Potato Shippers trophy—Charles Fiedler, Greeley.
Best seed exhibit, Association trophy—L. C. Steppler, Table Rock.
Best Burbank seed, Lou D. Sweet trophy—I. G. Waters, Monte Vista.
Best seed exhibit, W. D. Tidwell trophy—Wilson Stewart, Monte Vista.
Best state display, Association trophy—Nebraska.
Best district exhibit, Association trophy—Rio Grande county.
Best non-irrigated district exhibit, Association trophy—Table Rock Farmers' club.
Best individual exhibit, either seed or market, Land men's trophy—L. C. Steppler, Table Rock.
The individual awards follow:

Potato Show Awards.

(Except as otherwise noted, all locations of winners are in Colorado.)

Market Division (Irrigated).

Downing variety—1, E. E. Walter, Greeley; 2, Chas. Feidler, Greeley; 3, P. A. Tisdell, Greeley.
Ohio variety—1, Omar Underwood, Del Norte; 2, H. L. Edgerton, Carbondale.
Pearl or Peoples variety—1, Chas. Feidler, Greeley; 2, E. R. Bliss, Greeley; 3, Chas. Feidler, Greeley.
Russett Burbank or Netted Gem variety—1, Ed Gage, Deitrich, Idaho; 2, Don Chisholm, Del Norte; 3, Fred Kernen, Del Norte.
Bliss Triumph variety—1, J. Pedrett, Kimball, Neb.; 2, Howard Macey, Monte Vista.
Irish Cobbler variety—1, D. F. Rockey, Saguache; 2, Earl Crayeraft, Morrill, Neb.; 3, F. Lee Johnson, Parma, Idaho.
Brown Beauty variety—1, Corbyn C. Wright, Monte Vista; 2, Howard Macey, Monte Vista; 3, Murray Macey, Monte Vista.
Red McClure or Perfect Peach Blow variety—1, Grace Park Farm, Avon; 2, Ed Clausen, Carbondale; 3, Ed Clausen, Carbondale.
Rose Seedling variety—2, J. B. Snider, Greeley.
Rural variety—1, Chas. Feidler, Greeley; 2, Clarence Bliss, Greeley; 3, S. R. Johnson, Idaho Falls, Idaho.
White Burbank variety—1, Geo. A. Wright, Monte Vista; 2, Mary Shea, Monte Vista.

Seed Division (Irrigated).

Downing variety—1, Chas. Feidler, Greeley; 2, John Howell, Montrose; 3, E. E. Walter, Greeley.
Ohio variety—1, R. H. Thomas, Sheridan, Wyo.; 2, H. L. Edgerton, Carbondale.
Pearl or Peoples variety—1, Chas. Feidler, Greeley; 2, H. L. Edgerton, Carbondale; 3, E. R. Bliss, Greeley.
Russett Burbank or Netted Gem variety—1, I. G. Waters, Monte Vista; 2, H. E. Darrah, Monte Vista; 3, J. E. Kernen, Monte Vista.
Bliss Triumph variety—1, C. D. Hyatt, Monte Vista; 2, R. H. Thomas, Sheridan, Wyo.; 3, J. Pedrett, Kimball, Neb.
Brown Beauty variety—1, Wilson Stewart, Center; 2, J. B. Smith, Center; 3, John Westerman, Monte Vista.
Red McClure variety—1, Ed Clausen, Carbondale; 2, Ed Clausen, Carbondale; 3, Grace Park Farm, Avon.
Rural variety—1, F. A. Ogle, Greeley; 2, Chas. Feidler, Greeley; 3, John Howell, Montrose.
White Burbank variety—1, Geo. A. Wright, Monte Vista.

Marketing Division (Non-Irrigated).

Ohio variety—1, J. L. Massey, Montrose; 2, Ed Preble, Rushville, Neb.; 3, Roy Culver, Kuhns Crossing.
Pearl or Peoples variety—1, C. L. Stanley, Keota; 2, C. S. Bradt, Kimball, Neb.; 3, C. L. Stanley, Keota.
Russett Burbank or Netted Gem variety—1, J. L. Massey, Montrose.
Bliss Triumph variety—1, Geo. Englebrett, Ulm, Wyo.; 2, Arthur Mann, Chadron, Neb.; 3, Ira Barket, Rushville, Neb.
Irish Cobbler variety—1, Geo. Stannard, Gorday, Neb.
Rose Seedling variety—2, J. L. Massey, Montrose.
Idaho Rural variety—1, C. B. Shear, Morton, Idaho.

Seed Division (Non-Irrigated).

Ohio variety—1, Clarence Clark, Rushville, Neb.; 2, Ed Preble, Rushville, Neb.; 3, T. R. Schenck, Greeley.
Pearl or Peoples variety—1, C. L. Stanley, Keota; 2, C. L. Bradt, Kimball, Neb.
Bliss Triumph variety—1, A. G. Myer, Sterling; 2, Jake Johnson, Rushville, Neb.; 3, T. R. Schenck, Greeley.

Special Premiums Offered by Colorado Potato Shippers' Association.

Pearl—Charles Feidler, Greeley.
Russet Burbank—H. L. Edgerton, Carbondale.
Brown Beauty—Corbyn C. Wright Monte Vista.
Red McClure—Grace Park Farm, Avon.
Rural—Charles Feidler, Greeley.

Girl Engages In Sheep Raising.

Miss Hazel Jeffry of Lander, Wyo., who has been a member of the Boys' and Girls' Club for several years, and who has raised a large number of sheep, getting many of them as bum lambs, has now sold her grades and bought five fine bred Rambouillet ewes. The ewes are yearlings and have been bred in the John Carmichael flock at Riverton. Hazel is the second club member in Lander to engage in the purebred sheep business. Harold Farthing, earlier in the fall bought six registered Hampshire ewes and a buck.—Wyoming Cowboy.

Wyoming Farm Bureau Busy.

Some interesting totals follow regarding the work of the county agricultural agents in Wyoming during 1919. The figures given are for all agents in the state. Different farmers visited on their farm, 4,378. Total number of farm visits made, 5,226. Call on agent at office, 7,509. Meetings held under auspices of Farm Bureau or agent, 385. Total attendance at such meetings, 13,815. Membership in county Farm Bureau, Nov. 30, 1919, 2,255. Blackleg is the cause of a large amount of loss to the rachmen in Wyoming. The county agents during 1919 treated 10,065 head of cattle for blackleg.—Wyoming Cowboy.

The Roman foot was eleven and three-fifth inches.

Beet Plant a Living Sugar Factory

DRAWS SWEETNESS FROM SUNSHINE AND SOIL.

W. W. ROBBINS, in Through the Leaves.

THE sugar beet plant is a living sugar factory. It is in truth a "plant" in the manufacturing sense. Not only is there provision in this plant for the manufacture of sugar, but there is ample space for storage of the product.

In the manufacture of any article, whether it be a shoe, a watch, cloth-

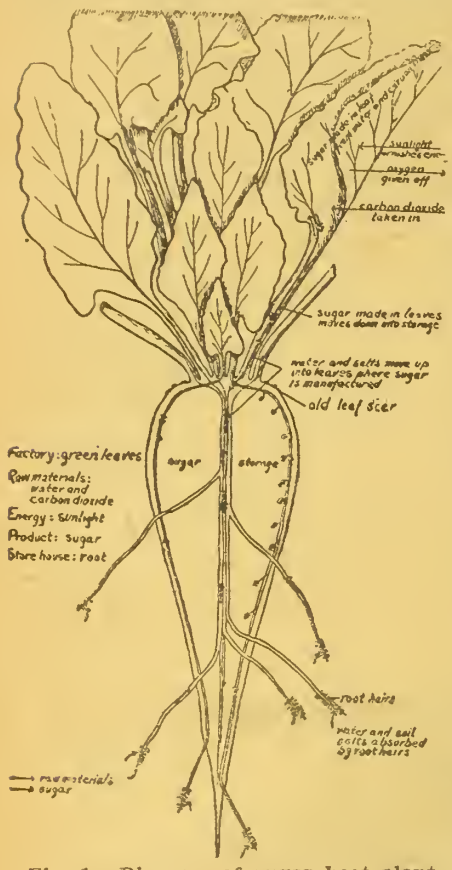

Fig. 1.—Diagram of sugar beet plant.

ing or sugar, we must give attention to the following:

1. Raw materials.
2. Structure of plant.
3. Source of energy.
4. Process.
5. Product.

The manufacturer of shoes must consider the source and quality of his raw materials, such as leather, cloth and metal; the structure and arrangement of the factory is all important; the source of energy used in running the plant may be the heat of coal, the energy of running water, or electricity; much attention is paid to the method or process of making the shoes; and, finally, a product is turned out, the character of which depends upon the raw materials and the processes used.

Let us consider the manufacture of sugar in the sugar beet plant under the five headings: Raw materials, structure of plant, source of energy, process, and product.

Raw Materials.

The living plant has an inexhaustible and very cheap supply of raw materials, for the manufacture of sugar. It utilizes carbon dioxide and water as its raw materials and from these ever-present substances manufactures sugar. Carbon dioxide comes from the air, and water from the soil.

Structure of the "Plant."

The living sugar plant or factory is "fearfully and wonderfully made." The large "sugar factory," so-called, which in fact is not a sugar factory, but a sugar extractor, with its complex machinery and processes, is not easily understood by most of us. But, it is simple in its structure and process as compared with the living sugar plant. The one is the handiwork of man, the other the handiwork of the Creator. And yet years of patient study of plants has revealed many of the secrets of nature. The structure of the living sugar plant and the processes in the manufacture of sugar are fairly well known.

The sugar beet leaves and stems and roots are made up of thousands of small, microscopic compartments known as cells. Each compartment or cell has its walls, and contains within them various substances, such as water, food materials in solution, and the living substance—protoplasm. Not all cells are the same size and shape. And, not all cells perform the same work. The root hair cells absorb; the cells of the veins and fibrous strands carry water, salts from the soil, and foods; the green cells of the leaves manufacture sugar and other plant foods; the cells of the fleshy root are sugar store houses; and the cells of the flowers produce seeds. Thus there is division of labor in the plant; the different parts are put to different uses.

A rough plan of the sugar beet plant is shown in Fig. 1. Fig. 2 shows the structure of the beet leaf. The leaf is shown in detail because it is the place where sugar is manufactured.

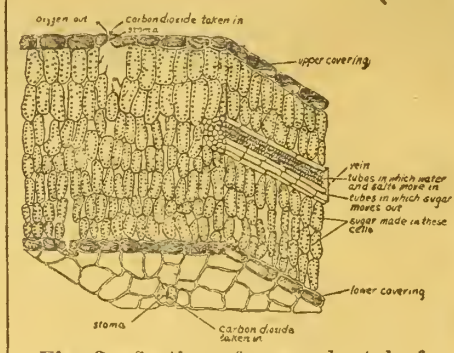

Fig. 2.—Section of sugar beet leaf.

Not all cells or compartments of the leaf can make sugar, however; the process is confined to those cells which contain green-colored bodies. These green-colored bodies are shown in the cells of Fig. 2 as small circles. They are called chloroplasts. So, the green cells of the beet leaves are the sugar manufacturing centers. The raw materials—carbon dioxide and water—come to these cells. Carbon dioxide is a gas. It enters the leaf through small pores or openings known as stomata. (Fig. 2) The gas diffuses through the air spaces between the loosely fitting leaf cells, goes into solution in the moisture on the wall of each green cell, and then enters the cell. Water, the other raw material, is absorbed from the soil by the root hairs, carried up through the strands of the roots to the veins of the leaves and thence into the green cells.

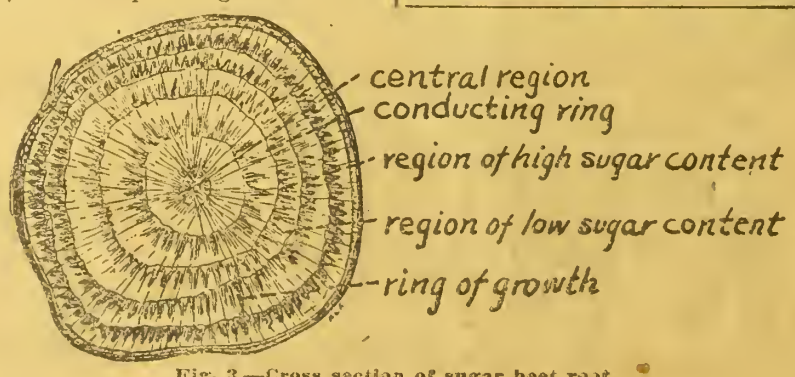

Fig. 3.—Cross section of sugar beet root.

Energy.

In every manufacturing process, energy is required. Carbon-dioxide and water cannot be put together to form sugar without energy, any more than can nails and leather and cloth be put together to form a shoe without some form of energy. Plants in the dark cannot manufacture sugar. Plants in the light can. Light or radiant energy is used by the living plant in sugar manufacture. What an inexhaustible supply of energy—the sunlight!

Will man ever be able to duplicate

PREPARING the Spring seed bed is a quick, sure job for the Bates Steel Mule.

Its Crawler traction does not slip on the soft ground and therefore allows double discing and harrowing in one operation.

It also does this work at a fast speed, thus making a finer seed bed than is possible with most tractors.

The Bates Steel Mule does not pack the ground because of the broad Crawler surface and allows the tractor to rest on top of the ground as lightly as a child's foot.

The front wheels make easy steering and comfortable riding.

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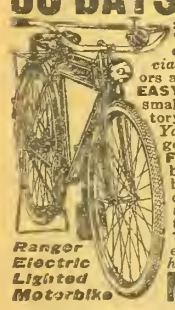

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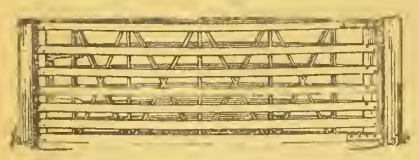

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are helping their husbands to prosper—are glad they encouraged them to go where they could make a home of their own—save paying rent and reduce cost of living—where they could reach prosperity and independence by **buying on easy terms.**

Fertile Land at $15 to $30 an Acre

—land similar to that which through many years has **yielded from 20 to 45 bushels of wheat to the acre.** Hundreds of farmers in Western Canada have raised crops in a single season worth more than the whole cost of their land. With such crops come prosperity; independence, good homes, and all the comforts and conveniences which make for happy living.

Farm Gardens—Poultry—Dairying

are sources of income second only to grain growing and stock raising. Good climate, good neighbors, churches, schools, rural telephone, etc., give you the opportunities of a new land with the conveniences of old settled districts.

For illustrated literature, maps, description of farm opportunities in Manitoba, Saskatchewan, and Alberta, reduced railway rates, etc., write Department of Immigration, Ottawa, Can., or

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WESTERN CANADA Farm Lands at Low Prices The Wheat Belt of America

the process in the green cells of living plants, and manufacture sugar from carbon dioxide and water, with the aid of sunlight as energy? We should not be too ready to answer "no." The process is the subject of painstaking investigation. It is a chemical process, certain elements of which are partially understood. But, even should he be able in an experimental way to carry on these processes, it is a long step to the manufacture of the product on a commercial scale as cheaply as the sugar beet can do it.

The Product

Carbon dioxide and water are the raw materials; the green cells of leaves are the compartments in which the raw materials are brought together; sunlight is the energy used; the process is a chemical one; and the product is sugar.

The product contains three chemical elements, carbon, hydrogen and oxygen. They are united in the proportion of 12 carbons, 22 hydrogens and 11 oxygens, which is written C12, H22 O11.

What does the beet plant do with the sugar manufactured in the cells of the leaf? In the early life of the beet plant a greater part of it is used in building up beet structure—the framework of the "manufacturing plant." The sugar forms the basis of the other and more complex substances in the plant. There is chemically added to the carbon, hydrogen and oxygen of sugar, such mineral elements from the soil as nitrogen, phosphorus, potassium, magnesium, sulphur, calcium and iron, and there are builded up complex plant products.

Later in the growing season, the beet plant ceases using its sugar supply in building new roots and leaves, and begins to place it in storage. Of course it has stored much sugar throughout the entire season, but now comes a period of very rapid deposit of sugar in the storehouse. The root is the storehouse. A cross section of the storehouse is shown in Fig. 3.

There are a number of concentric rings of growth. Each ring of growth is composed of two regions. It will be noticed that there is a region in each ring of growth in which the tissue is lighter in color, less watery, and more compact (shown shaded in Fig. 3). This region is relatively rich in sugar. It is bordered by tissue which is darker in color and has more water (shown clear in Fig. 3); in fact this region has a comparatively high water content. The proportion of these two regions as seen in a cross section of a beet gives one a general idea of its sugar content.

It is worthy of note that sugar contains elements which come only from air and water. Sugar does not contain elements such as nitrogen, potassium and phosphorous, which makes up the fertility of our soils. True it is that the elements nitrogen, potassium, phosphorus and others are taken up by the living sugar plant, but these elements go into the make-up of the living material; they do not form any part of sugar. Consequently, if beet tops, beet pulp, beet molasses and other residues are returned to the soil in the form of manure, plant foods of the soil have not been reduced to any appreciable extent by the growth of a crop of beets.

A sack of sugar shipped from our shores does not carry one bit of the soil fertility of the United States to foreign soils. They have received only carbon dioxide from our atmosphere, water from our soils, and our sunshine. They need the last!

But when a cargo of grain embarks for foreign shores, there goes with it the fertility of our farm lands, in the form of nitrogen, potassium, phosphorus and other valuable plant foods.

One hundred pounds of wheat contain approximately 1.87 pounds of mineral nutrients (plant foods), and 100 pounds of wheat flour contain about 0.4 pound of mineral nutrients.

In every 100 pounds of mineral nutrients from the wheat grain there are the following weights of substances:

Potash	30.24 lbs.
Soda	.65 lbs.
Lime	3.50 lbs.
Magnesia	13.21 lbs.
Iron oxide	.60 lbs.
Phosphoric acid	47.92 lbs.
Silicon	.73 lbs.

Exports of mineral nutrients (plant foods or soil fertility) in the form of wheat and wheat flour from the United States:

	Average, 1910-1914	1916	1917
Wheat, bushels	56,913,000	173,274,000	149,531,000
Wheat flour, bushels	10,679,000	15,521,000	11,542,000
*Mineral nutrient, pounds	72,229,000	206,581,000	177,476,000

(*Plant foods or soil fertility.)

These facts have a bearing upon our national agricultural policies. They have a bearing on our farming policies. They emphasize the value of the sugar beet, and crops like it, in our farming system, and they further point out the urgent need of feeding beet tops, beet pulp and other by-products, and thus returning to our fields the fertility removed by the beet plant. Unlike a grain crop, the sugar beet crop lends itself to a feeding program, in which the soil fertility is not depleted.

As concerns the fertility of our land, we can much better afford to be exporters of sugar than of grains. This applies to the nation as a whole, and to the individual farmer.

Futurity at State Fair.

Realizing the great amount of good resulting to the hog industry from the futurity shows, the state fair management is staging a special futurity for the 1920 fair at Pueblo. This will be open to each of the breeds.

It is understood that each breed will have its own futurity and the state offering is in addition to the record association futurities. This plan is a worthy one and should be considered by every hog breeder. For their information the conditions are printed herewith: Entries open to the world. A nomination for this special consists of one boar and one sow, but not two of either. Animals eligible for the futurity must have been farrowed after September 1, 1919, but not necessarily from one litter. Entries close May 1, 1920.

An initial payment of $10 for each nomination is due and payable at time of entry and as many nominations can be made by owner as he desires to make payment on.

A final payment of $5 for each entry to be shown must be made by September 1, 1920.

At time of final payment owner must give recorded name and number of sire and dam and also name and recorded number of animals to be shown. Animals to be shown must be recorded in one of the record associations.

In order to compete for this special, animals must be entered in the name of the actual owner and remain the property of such nominator until after being shown.

No nominator will be awarded more than two premiums in one class, but an exhibitor may drive before the judge as many animals as may have been entered and final payment made thereon to show. Thirty entries must be made to complete the futurity. Five final payments must be made to show.

The Colorado State Fair Commission will add an equal amount to all money paid by entrymen, and the entire amount will be divided equally between the boar pig and the sow pig on the following percentage basis: First, 30 per cent; second, 25 per cent; third, 15 per cent; fourth, 10 per cent; fifth, 8 per cent; sixth, 7 per cent; seventh, 3 per cent; eighth, 2 per cent.

Should the futurity fail to fill all money paid will be returned by the State Fair Commission. All entries should be sent to J. L. Beaman, manager, Colorado State Fair, Pueblo.

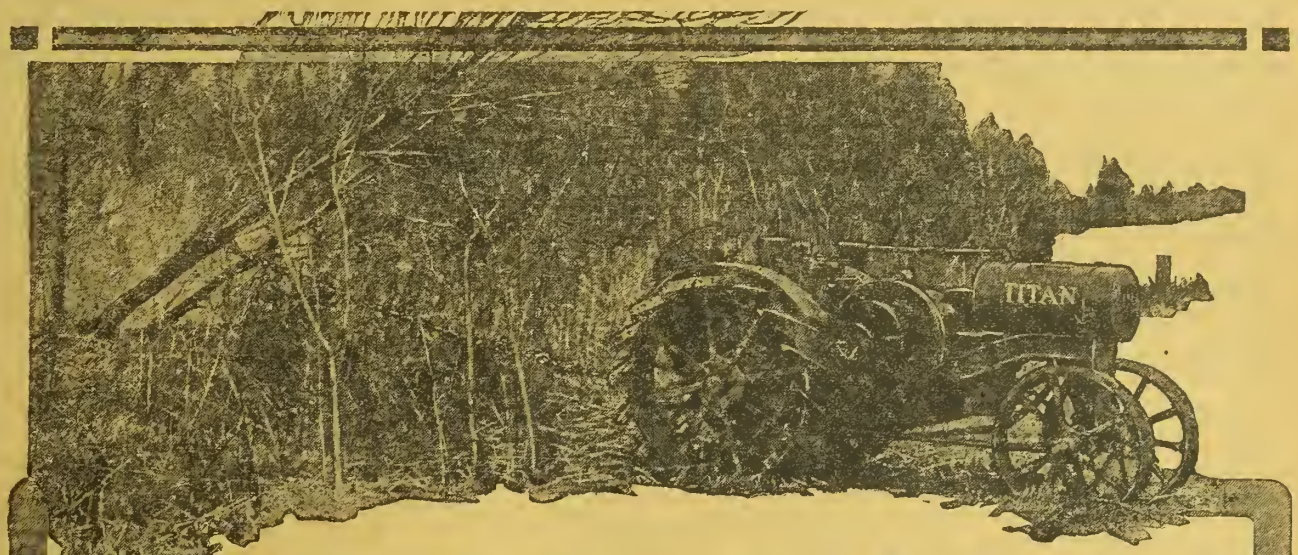
Registered Holstein Sale.

D. H. Stephens of Longmont will hold a sale of registered Holstein cows and heifers, and Duroc-Jersey brood sows at the livestock pavillion at Longmont on March 5. Here is an opportunity for the Holstein fancier to obtain some excellent registered stock. The same may be said of the Durocs offered. The cows are large, well marked and show excellent udder development. There are several animals in the herd that have good A. R. O. records.

Any one wanting cows that are ready to bring immediate returns and that are acclimated to Colorado conditions will find it worth while to be at Longmont, March 5th. Mr. Stephens' time is taken up with the creamery business and therefore he must sell his entire herd. The Duroc-Jersey hogs to be sold are strong in the blood of the Orions, Crimson Wonder, and Defender. Duroc breeders wanting stretch, good bone and smoothness will find something to interest them at this sale. Look for the ad in this issue.

There were 32 negro lynchings in the United States in the last year. Two of these were in the North and the rest in the South.

Let Western Farm Life Service Bureau help solve your farming problems. All questions promptly answered by letter.



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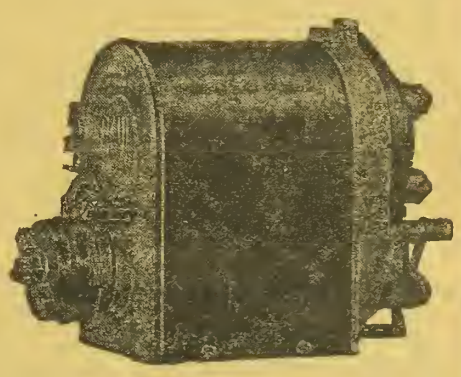
THIS I. H. C. Titan Tractor is ready in a minute for any work—belt or draw bar.

The odd jobs like clearing land, grinding feed, sawing wood, make the tractor profitable the year around.

The K-W Magneto guarantees an instant start and steady power in any weather—on any fuel.

Buy your tractor to work the year around—equipped with a K-W Magneto which starts the tractor without fussing even in zero weather, and makes it pay dividends every month in the year.



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TRADE K-W MARK Magneto

Fires Any Fuel—Gets Maximum Power Out of Every Drop

BEEF CATTLE.

Following is a complete list of awards in the beef breeding classes at the National Western Stock show held in Denver recently:

Herefords.

Judge—Tom Patterson, Frankfort, Ky.

Bull, 3 years old or over (14 shown)—First, O. Harris & Sons, Harris, Mo., on Repeater, Jr.; 2nd, Warren T. McCray, Kentland, Ind., on Brummel Fairfax; 3rd, T. F. DeWitt, Denver, Colo., on Mischievous, Jr.; 4th, A. B. Cook, Townsend, Mont., on Fairfax 16th Jr.; 5th, John E. Painter r Sons, Roggen, Colo., on Mansell Boy 2nd; 6th, Hereford Corporation of Wyoming, Cheyenne, Wyo., on Wyoming Prince.

Bull, two years old and under three (19 shown)—1st, Warren T. McCray, on Romeo Fairfax; 2nd, L. C. Grant, Avondale, Colo., on Prairie Mischief; third, Herbert Chandler, Baker, Ore., on Donald Rupert; 4th, Hereford Corporation of Wyoming, on Bonnie Laddie; 5th, J. D. Canary, Denver, on Repeater 2nd; 6th, L. A. Burson, Morrill, Neb., on Mischief Domino 3rd.

Senior Yearling Bull (10 shown)—1st, A. B. Cook, Townsend, Mont., on Panama 76th; 2nd, T. F. DeWitt, Denver, on Beau Blanchard 75th; 3rd, L. G. Davis, Saratoga, Wyo., on Carlos 155th; 4th, John E. Painter & Sons, on Donald Rex 19th; 5th, Mousel Bros., Cambridge, Neb.; 6th, The Sneffels Land & Cattle Co., Ridgway, Colo., on Clem Fairfax; 7th, The Sneffels Land & Cattle Co., Ridgway, on Amos FairIax.

Junior Yearling Bull (52 shown)—1st, O. Harris & Sons, on Repeater 212th; 2nd, A. B. Cook, on Panama 81st; 3rd, David Firm & Sons, La Veta, Colo., on Don Stanway; 4th, W. N. W. Blayney, Denver, on Blayney's Domino; 5th, John E. Painter & Sons, on Director Domino; 6th, Johnson Bros., Eagle, Colo., on Gay Boy 80th; 7th, Hereford Corporation of Wyoming, on New Era 2nd; 8th, Herbert Chandler, Baker, Ore., on Beau Gomez, Jr.; 9th, J. D. Canary, on Repeater 13th; 10th, Fulscher & Kepler, Holyoke, Colo., on Beau Aster 10th; 11th, The S. L. W. Ranch, Kersey, Colo., on Greeley Mischief 9th; 12th, John E. Painter & Sons, on Mansell Boy 77th.

Senior Bull Calf (40 shown)—1st, A. B. Cook, on Panama 100th; 2nd, O. Harris & Sons, on Repeater 171st; 3rd, Herbert Chandler, on Bonnie Prince; 4th, Fulscher & Kepler, on Real Domino; 5th, W. N. W. Blayney, on Wyoming 9th; 6th, T. F. DeWitt on Prince Imperial 14th; 7th, W. N. W. Blayney on Wyoming 8th; 8th, Johnson Brothers, Eagle, Colo., on Gay Boy 100th; 9th, L. G. Davis, on Brother Wyoming; 10th, T. F. DeWitt on Prince Imperial 12th; 11th, John E. Painter & Sons, on Mansell Boy 100th; 12th, L. G. Davis, on Bonnie Carlos 21st; 13th, David Firm & Sons, La Veta, Colo., on Don Jose 2nd; 14th, Colorado State Reformatory, Buena Vista, Colo., on Beau Blanchard 86th; 15th, F. W. Mues, Edison, Neb., on Grove Carlos.

Junior Bull Calf (52 shown)—1st, Fulscher & Kepler, on Beau Domino; 2nd, Fulscher & Kepler, on Princeps Domino; 3rd, Jesse Engle & Sons, Sheridan, Mo., on Beau Blanchard 90th; 4th, B. T. Barlett, Greencastle, Mo., on Mischief Domino Jr.; 5th, Warren T. McCray, on Lowden Fairfax; 7th, David Firm & Sons, on Heir's President; 8th, Fulscher & Kepler, on Onward Domino; 9th, Johnson Brothers, on Gay Boy 116th; 10th, Fulscher & Kepler, on Peerless Domino; 11th, J. D. Canary, on Repeater 35th; 12th, O. Harris & Sons, on Repeater 164th; 13th, Herbert Chandler, on Prince Crusader; 14th, B. T. Bartlett, Greencastle, Mo., on Sir Andrew; 15th, Mousel Bros., Cambridge, Neb., on Superior Domino 5th.

Cow, 3 years old or over—1st, Warren T. McCray, on Lena FairIax; 2nd, A. B. Cook, on Miss Joy; 3rd, B. T. Bartlett, on Majestic Lady; 4th, O. Harris & Sons, on Miss Gay Lad; 5th, T. F. Dolan & Son, on Belle Blanchard.

Cow, 2 years old and under—1st, Hereford Corporation of Wyoming, on Miss Rialto 2nd; 2nd, Warren T. McCray, on Lady Donald; 3rd, Johnson Bros., on Gay Agnes; 4th, Jesse Engle & Sons, Sheridan, Mo., on Belle Blanchard; 5th, Mousel Bros., on Mignonette; 6th, W. N. W. Blayney, on Colorado Lassie; 7th, O. Harris & Sons, on Miss Repeater.

Senior Yearling Heifer—1st, Jesse Engle & Sons, on Belle Blanchard 63d; 2nd, A. B. Cook, on Lady Joy 2d; 3rd, Mousel Bros., on Dulcie Stanway; 4th, Mousel Bros., on Mischief Maker; 5th, Warren T. McCray, on Orphan FairIax; 6th, Warren T. McCray, on Cynthia Fairfax; 7th, Herbert Chandler, on Princess Belle; 8th, W. N. W. Blayney, on Bonnie Wyoming.

Junior Yearling Heifer—1st, O. Harris & Son, on Miss Repeater 155th; 2nd, J. D. Canary, Denver, on Miss Repater 18th; 3rd, A. B. Cook, on Lady Panama 74th; 4th, Jesse Engle & Sons, on Belle Blanchard 73rd; 5th, Johnson Brothers, on Miss Carrie; 6th, Mousel Bros., on Miss Stanway; 7th, David Firm & Sons, on Lady Sewal; 8th, M. Armentrout, Botna, Iowa, on Princess Domino; 9th, Johnson Brothers, on Miss Anna; 10th, Herbert Chandler, on Catherine 10th.

Senior Heifer Calf—1st, O. Harris & Sons, on Miss Repeater; 2nd, A. B. Cook, on Panama's Joy; third, J. D. Canary, on Miss Repeater 36th; 4th, Jesse Engle & Sons, on Belle Blanchard 80th; 5th, Fulscher & Kepler, on Pansy Aster; 6th, Warren T. McCray, on Hazel Farmer; 7th, A. B. Cook, on Lady Panama 79th; 8th, T. F. DeWitt, on Princess Irene 2nd; 9th, J. D. Canary, on Miss Repeater; 10th, John E. Painter & Sons, on Belle Donald 21st; 11th, Johnson Bros., on Miss Gay Lucy; 12th, David Firm & Sons, on Lady May; 13th, The S. L. W. Ranch Co., Kersey, Colo., on Marie Mischief 2nd; 14th, Hereford Corporation of Wyoming, on Golden Lass 22d.

Junior Heifer Calf—1st, Fulscher & Kepler, on Ruth Domino; 2nd, A. B. Cook, on Panama's Joy 2nd; 3rd, Fulscher & Kepler, on Nina Domino; 4th, Fulscher & Kepler on Fairy Domino; 5th, Jesse Engle & Sons, on Belle Blanchard 83d; 6th, Fulscher & Kepler on Lady Domino; 7th, M. Armentrout, Botna, Iowa, on Miss Junior Mischief; 8th, John E. Painter & Sons, on Miss Rupert 7th; 9th, F. G. Stilgebouer & Son, Indianola, Neb., on Ruby Mischief; 10th, T. F. De Witt, on Princess Maud; 11th, Warren T. McCray, on Sybil Fairfax; 12th, W. N. Edgar, Bartley, Neb., on Lottie; 13th, L. C. Grant, Avondale, Colo., on Pearlena; 14th, T. F. Dolan & Son, on Lady Belle; 15th, The S. L. W. Ranch Co., on Mary F. Mischief.

Grand Champion Bull—O. Harris & Sons, on Repeater, Jr.

Reserve Champion Bull—Warren T. McCray, on Romeo Fairfax.

Hereford Junior Champion Bull—O. Harris & Sons, on Repeater 212th.

Champion Senior Bull Calf—A. B. Cook, on Panama 100th.

Champion Junior Bull Calf—Fulscher & Kepler, on Beau Domino.

Junior and Grand Champion Female—Fulscher & Kepler, on Ruth Domino.

Senior Champion Cow—Warren T. McCray, on Lena Fairfax.

Aged Herd—1st, Warren T. McCray, Kentland, Ind.; 2nd, O. Harris & Sons, Harris, Mo.; 3rd, A. B. Cook, Townsend, Mont.

Young Herd—1st, O. Harris & Sons; 2nd, A. B. Cook; 3rd, Jesse Engle & Sons; 4th, Warren T. McCray; 5th, J. D. Canary; 6th, Herbert Chandler; 7th, Hereford Corporation of Wyoming; 8th, Johnson Brothers.

Calf Herd—1st, A. B. Cook; 2nd and 6th, Fulscher & Kepler; 3rd, Jesse Engle & Sons; 4th, O. Harris & Sons; 5th, Warren T. McCray; 8th, Herbert Chandler.

Four Animals, Either Sex, Get of One Sire—1st, Warren T. McCray; 2nd, A. B. Cook; 3rd, Jesse Engle & Sons; 4th, O. Harris & Sons; 5th and 6th, Fulscher & Kepler; 7th, Johnson Bros.; 8th, W. N. W. Blayney; 9th, Hereford Corporation of Wyoming.

Produce of Dam—1st, Warren T. McCray; 2nd, O. Harris & Sons; 3rd, A. B. Cook; 4th, Jesse Engle & Sons; 5th, Jesse Engle & Sons.

Two Bulls, any age, bred and owned by exhibitor (32 shown)—1st, O. Harris & Sons; 2nd, A. B. Cook; 3rd, Warren T. McCray; 4th, Herbert Chandler; 5th, Fulscher & Kepler; 6th, Herford Corporation of Wyoming; 7th, T. F. DeWitt; 8th, W. N. W. Blayney; 9th, John E. Painter & Sons; 10th, J. D. Canary.

Two Females, any age, bred and owned by exhibitor (25 shown)—1st, Jesse Engle & Sons; 2nd, Warren T. McCray; 3rd, A. B. Cook; 4th, Fulscher & Kepler; 5th, O. Harris & Sons; 6th, Mousel Bros.; 7th, W. N. W. Blayney; 8th, Johnson Bros.; 9th, Hereford Corporation of Wyoming; 10th, J. D. Canary.

Western Hereford Breeders' Futurity.

Senior Bull Calves (15 shown)—1st, A. B. Cook, on Panama 100th; 2nd, Fulscher & Kepler, on Real Domino; 3rd, W. N. W. Blayney, on Wyoming 9th; 4th, T. F. DeWitt, on Prince Imperial 14th; 5th, W. N. W. Blayney, on Wyoming 8th; 6th, Johnson Bothers, on Gay Boy 100th; 7th, L. G. Davis, on Brother Wyoming; 8th, T. F. DeWitt, on Prince Imperial 12th; 9th, John E. Painter & Sons, on Mansell Bay 100th.

Junior Bull Calves (24 shown)—1st, Fulscher & Kepler, on Beau Domino; 2nd, Fulscher & Kepler, on Princeps Domino; 3rd, George W. Means & Son, Sargent, Colo., on Sir Snowball; 4th, David Firm & Sons, on Heir's President; 5th, Fulscher & Kepler, on Onward Domino; 6th, Johnson Bros., on Gay Boy 116th; 7th, Fulscher & Kepler, on Peerless Domino; 8th, J. D. Canary, on Repeater 35th.

Senior Heifer Calves—1st, A. B. Cook, on Panama's Joy; 2nd, J. D. Canary, on Miss Repeater 36th; 3rd, Fulscher & Kepler, on Pansy Aster; 4th, T. F. DeWitt, on Princess Irene 2nd; 5th, John E. Painter & Sons, on Belle Donald 21st; 6th, Johnson Bros., on Miss Gay Lucy; 7th, David Firm & Sons, on Lady Maid; 8th, S. L. W. Ranch Co., on Maud Mischief; 9th, Hereford Corporation of Wyoming, on Golden Lass 2nd; 10th, A. Christensen, Eagle, Colo., on Miss Blanchard 12th; 12th, W. H. Shryack & Sons, Eagle, Colo., on Lena.

Junior Heifer Calves—1st, Fulscher & Kepler, on Ruth Domino; 2nd, A. B. Cook, on Panama's Joy 2nd; 3rd, Fulscher & Kepler, on Nina Domino; 4th, Fulscher & Kepler, on Fairy Domino; 5th, Fulscher & Kepler on Lady Domino; 6th, T. F. DeWitt, on Princess Maud.

Champion Bull Calf—1st, A. B. Cook, on Panama 100th; 2nd, Fulscher & Kepler, on Beau Domino.

Champion Heifer Calf—1st, Fulscher & Kepler, on Ruth Domino; 2nd, Geo. W. Means & Son, Sargent, Colo., on Grover Princeps.

Hereford Futurity—Winner of the Gano-Downs Challenge Cup, A. B. Cook, on Panama 100th.

Winner of the Daniels & Fisher Stores Company Trophy for champion heifer calf in Western Hereford Futurity—Fulscher & Kepler, on Ruth Domino.

Ruth Domino, Junior and Grand Champion Hereford Female, at National Western. Owned by Fulscher & Kepler.

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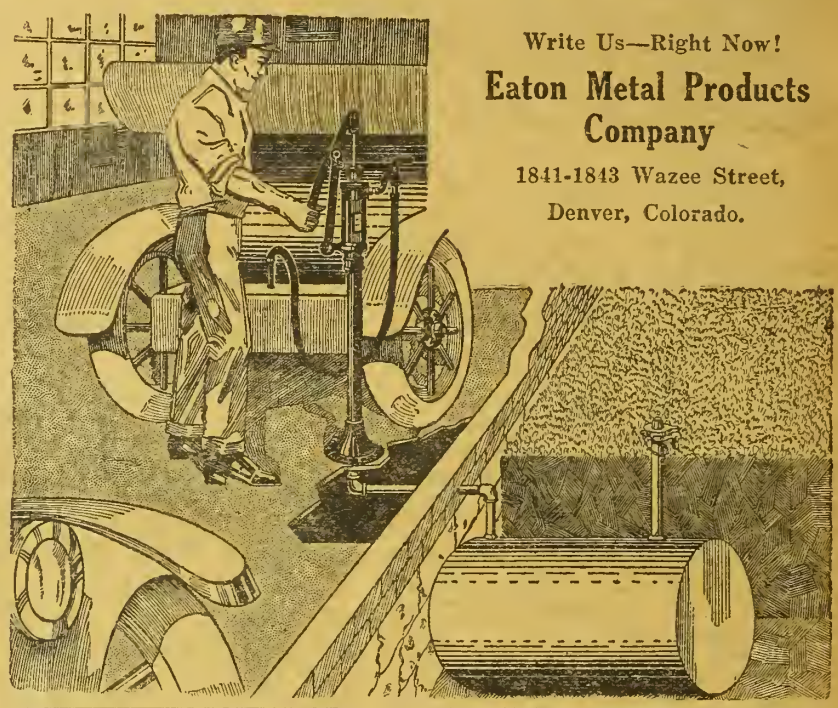

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Shorthorns.

Judge—Lawrence Ogden, Maryville, Mo.

Bull, three years old or over (13 shown)—1st, Park E. Salter, Wichita, Kan., on Bapton Corporal; 2nd, A. C. Shallenberger, Alma, Nb., on Gainford Marshall; 3rd, H. Rees & Sons, Pilger, Neb., on Violet's Dale; 4th, The Maxwell-Miller Cattle Company, Steamboat Springs, Colo., on Princely Stamp; 5th, Albert Hultine, Saronville, Neb., on Lavender Goods; 6th, C. A. Hauf, Glendo, Wyo., on Ringleader's Choice.

Bull, two years old and under three (6 shown)—First, Park E. Salter, on British Emblem; 2nd, Colorado Agricultural College, Fort Collins, Colo.; 3rd, W. F. Rapp, St. Edward, Neb., on Village Bud.

Senior Yearling Bull (8 shown)—1st, C. A. Saunders & Sons, Manilla, Ia., on Golden Type; 2nd, Gleason & Blazer, Kiowa, Colo., on Sunnyside Robert; third, C. A. Hauf, on Northern Light; 4th, C. A. Haul, on Type's Model; 5th, Jennings & Stamy, Council Bluffs, Ia., on Burwood; 6th, C. A. Melburn, Elbert, Colo., on Stamp's Commander; 7th, W. F. Rapp, on Joker.

Junior Yearling Bull (29 shown)—1st, The Maxwell-Miller Cattle Co., on Broadhooks Pride; 2nd, R. G. Maxwell & Sons, Fort Collins, Colo., on First National; 3rd, Charles Plageman, Eckley, Colo., on Hercules Knight; 4th, W. E. Pritchard, Walnut, Ia., on Brilliant Dale; 5th, H. Rees & Sons, on Victor Dale; 6th, W. F. Rapp, on Silver Cup; 7th, Allen Carnahan & Sons, Elbert, Colo., on Kiowa Cumberland; 8th, W. F. Rapp, on Silver Lad; 9th, R. G. Maxwell & Sons, on Sultan Junior; 10th, Geo. L. Foxton, Glendo, Wyo., on King Albin; 11th, Charles Plageman, on Victoria's Hero; 12th, Charles Plageman, on Venus King.

Senior Bull Calf (39 shown)—1st, W. E. Pritchard, on Sedate Dale; 2nd, Allen Cattle Co., Colorado Springs, Colo., on Stylish Thought; 3rd, D. Warnock & Son, Loveland, Colo., on Royal Type; 4th, Maxwell-Miller Cattle Co., on Lovely's Pride; 5th, Howard M. Erwin, Loveland, Colo., on Model Renown; 6th, Allen Cattle Co., on Choice Thought; 7th, George L. Foxton, on Glenwood Gloster; 8th, Park E. Salter, on Emblem, Jr.; 9th, H. Rees & Sons, on Rusper Commander; 10th, C. A. Melburn, on Gloster's Choice; 11th, J. M. Steward & Son, Red Cloud, Neb., on Royal Star; 12th, Maxwell-Miller Cattle Co., on Max Mill Pride.

Junior Bull Calf—1st, Owen Kane, Wisner, Neb., on Marigold Knight; 2nd, A. C. Shallenherger, on Ashbourne's Choice; 3rd, W. E. Pritchard, on Royal Dale; 4th, D. Warnock & Sons, on Royal Model; 5th, C. A. Melburn, on Rare Thought; 6th, The Cornforth Live Stock Co., Elbert, Colo., on Forest Glen Cedar; 7th, The Maxwell-Miller Cattle Co., on Max Mill Perfect; 8th, Albert Hultine, on Master Key; 9th, Samuel Ball Wray, Colo., on Cupbearer; 10th, H. Rees & Sons, on Dale's Rival; 11th, The Allen Cattle Co., on Divide Aristocrate; 12th, D. Warnock & Sons, on Supreme Model.

Cow, 3 years old or over—1st, The Maxwell-Miller Cattle Co., on Sultan's Flower; 2nd, Colorado Agricultural College, on Velvet Countess; 3rd, C. G. Gawthrop, Mancos, Colo., on Pleasant Bud; 4th, Park E. Salter, on Hallwood Lavender 3d; 5th, D. Warnock & Sons, on Susan 8th.

Cow, 2 years old and under 3—1st, H. Rees & Sons, on Hercules Topsy; 2nd, Albert Hultine, on Gloster Countess 2nd; 3rd, Park E. Salter, on Miss Snowbird Sultan; 4th, D. Warnock & Sons, on Model Lady; 5th, Maxwell-Miller Cattle Co., on O. J.'s White Gloster.

Senior Yearling Heifer—1st, Park E. Salter, on Lady Supreme; 2nd, Albert Hultine, on Gloster Princess; 3rd, F. W. Retzlaff & Sons, Walton, Neb., on Autumn Clipper; 4th, W. E. Pritchard, on Rosebud 5th; 5th, Maxwell-Miller Cattle Co., on Flora Anoka; 6th, Allen Cattle Co., on Susan 14th; 7th, H. Rees & Sons, on Clover Meadow Lady 8th, W. F. Rapp, on Ruby's Lassy; 9th, Geo. L. Foxton, on Douglas Rose.

Junior Yearling Heifer—1st, W. E. Pritchard, on Rosebud 6th; 2nd, D. Warnock & Sons, on Model Roan Lady; 3rd, Owen Kane, Wisner, Neb., on Challenger's Lassy; 4th, D. Warnock & Sons, on Secret Susan! 6th, Cornforth Live Stock Co., on Glendale Addie 2nd; 7th, Cornforth Live Stock Co., on Princess Landcaster; 8th, Maxwell-Miller Cattle Co., on Clear Spring Mina 9th, Thomas Andrew, Cambridge, Neb., on Everella 5th; 10th, A. C. Shellenberger, on Golden Treasure; 11th, Albert Hultine, on Gloster Princess 5th; 12th, F. W. Retzlaff & Sons, on Countess St. Clair 2nd.

Senior Heifer Calf—1st, W. E. Pritchard, on Jeraldine 10th; 2nd, Owen Kane, Wisner, Neb., on Dale's Victoria; 3rd, Allen Cattle Co., on Divide Marion; 4th, Owen Kane, on Mamie Dale 5th, Park E. Salter, on Pleasant Gloster 2nd; 6th Thomas Andrews, Cambridge, Nebr., on Madame Clementine; 7th, Albert Hultine, on Gloster Countess 3rd; 8th, Allen Cattle Co., on Bountiful 5th; 9th, H. Rees & Sons, on Star's Fancy 10th, Clinton Whittier, Cherry, Colo., on Ros Oaks; 11th, Gleason & Blazer, on Roan Pearl.

Junior Heifer Calf—1st, Owen Kane, on Challenger's Gloster; 2nd, Owen Kane, on Isabell 2nd; 3rd, D. Warnock & Sons, on Model Beauty 2nd; 4th, W. E. Pritchard, on Fairview Lily 3d 5th, D. Warnock & Sons, on Gwendoline Model 6th, C. G. Gawthrop, on San Juan Victoria 4th 7th, Thomas Andrews, on Royal Bess; 8th, Cornforth Live Stock Co., on Golden Sunshine; 9th, Maxwell-Miller Cattle Co., on Max Mill Acorn.

Harry L. Youngerman, Grand Champion Diplomat National Western Show.

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It takes a lot of people to help make a big Stock show successful, but there is one position where the good work of several hundred others may be spoiled by the wrong word, or the untactful act. That is right in the heart of the show—the center of the judging arena. The man in command there must be a diplomat, must be a firm yet amiable executive, and must have the knack of dealing with the exhibitor and spectator in a way that sustains good will. The National Western Stock Show association entrusts that work to Harry L. Youngerman, assistant general manager of the show, who for the greater part of the year is general livestock agent for the Denver Union stock yards. Mr. Youngerman is known throughout the mountain states among stock raisers of all classes, by breeder and rangeman, sheep raiser and lamb feeder, pork producer and dairy farmer. They all know him. In his travels he makes friends, and Stock show week they come to Denver from all parts of the mountain country, and they say Youngerman never forgets a face or a first name. Between managing affairs in the arena at the day and night shows, and saying "howdy" to Bill, and Frank, and Tom and the rest of them, Harry Youngerman has a busy week. The secret of his success is an even temper and a genial smile.

10th, Maxwell-Millelr Cattle Co., on Max Mill Myrtle.

Senior and grand champion bull—Park E. Saltr, on Bapton Corporal.

Junior champion and reserve bull—Owen Kane, on Marigold Knight.

Senior champion female—H. Rees & Son, Pilger, Neb., on Hercules Topsy.

Junior and grand champion female—Park E. Salter on Lady Supreme.

Aged Herd, consisting of 1 bull, 2 years old or over; 1 cow or heifer, 2 years old and under 3; 1 heifer, 1 year old and under 2; and 1 heifer under 1 year old—1st, Park E. Salter; 2nd, H. Rees & Sons; third, Albert Hultine; 4th, Maxwell-Miller Cattle Co.; 5th, A. C. Shellenberger; 6th, Cornforth Live Stock Co.

Young Herd, consisting of 1 bull under 2 years old, 2 heifers, 1 year old and under 2; 2 heifers under 1 year old—1st, W. E. Pritchard,; 2nd, Owen Kane; 3rd, Allen Cattle Co.; 4th, D. Warnock & Sons; 5th, Maxwell-Miller Cattle Co.; 6th, Albert Hultine; 7th, H. Rees & Sons; 8th, Thos. Andrews.

Calf Herd, consisting of 1 bull and 2 heifers, all under 1 year old and all bred by exhibitor—1st, W. E. Pritchard; 2nd, Owen Kane; 3rd, Allen Cattle Co.; 4th, D. Warnock & Sons; 5th, Maxwell-Miller Cattle Co.; 6th, Albert Hultine; 7th, Cornforth Live Stock Co.; 8th, H. Rees & ons.

Four animals, either sex, get of one sire—1st, Owen Kane; 2nd, W. E. Pritchard; 3rd, Albert Hultine; 4th, The Allen Cattle Co.; 5th, D. Warnock & Sons; 6th, A. C. Shellenberger; 7th, Maxwell-Miller Cattle Co.; 8th, Colorado Agricultural College; 9th, Maxwell-Miller Cattle Co.

Two animals, eithr sex, produce of one cow—1st, W. E. Pritchard; 2nd, Albert Hultine; 3rd, Maxwell-Miller Cattle Co.; 4th Maxwell-Miller Cattle Co.; 5th, C. G. Gawthrop; 6th, D. Warnock & Sons; 7th, H. Rees & Sons; 8th, The Cornforth Live Stock Co.

Shorthorn Futurity.

Senior Bull Calves—1st, D. Warnock & Sons, on Royal Type; 2nd, The Maxwell-Miller Cattle Co., on Lovely's Pride; 3rd, Howard M. Erwin, Loveland, Colo., on Model Renown; 4th, Allen Carnahan, Elbert, Colo., on Superbus Cumberland 2nd; 5th, Maxwell-Miller Cattle Co., on Max Mill Pride.

Junior Bull Calves—1st, D. Warnock & Sons, on Royal Model; 2nd, Maxwell-Miller Cattle Co., on Max Mill Perfect; 3rd, C. A. Melburn, Elbert, Colo., on Rare Thought; 4th, Maxwell-Miller Cattle Co., on Max Mill Standard; 5th, Cornforth Livestock Co., Elbert, Colo., on Forest Glen Goods; 6th, D. Warnock & Sons, on Supreme Model; 7th, C. G. Gawthrop, Mancos, Colo., on Montezuma Sultan; 8th, D. Warnock & Sons, on Model Reserve; 9th, J. Paul Jones, Elbert, Colo., on Baron Champion; 10th, Gleason & Blazer, Kiowa, Colo., on Violet's Cumberland; 11th, Samuel Ball, Wray, Colo., on Cupbearer; 12th, Allen Carnahan, on Superb Kiowa.

Senior Heifer Calves—1st, Gleason & Blazer, on Roan Pearl; 2nd, Colorado Agricultural College, on Cumberland Lily.

Junior Heifer Calves—1st, Maxwell-Miller Cattle Co., on Max Mill Myrtle; 2nd, D. Warnock & Sons on Model Beauty 2nd; 3rd, Cornforth Live Stock Co., on Golden Sunshine; 4th, Maxwell-Miller Cattle Co., on Max Mill Acorn; 5th, D. Warnock & Sons, on Gwendoline Model; 6th, C. G. Gawthrop, on San Juan Victoria 4th; 7th, Maxwell-Miller Cattle Co., on Lothian's Lady; 8th, Cornforth Live Stock Co., on Golden Diamond; 9th, D. Warnock & Sons on Windsoria Belle 2nd; 10th, D. Warnock & Sons, on Susan 9th; 11th, J. Paul Jones, on Violet Hedgewood; 12th, Gleason & Blazer, on Roan Splendor; 13th, Maxwell-Miller Cattle Co. on Max Mill Mina; 14th, George L. Foxton, Glendo, Wyo., on Gloster Princess; 15th, Allen Carnahan, on Minerva Lass; 16th, J. Paul Jones, on Baron Lavender.

Champion Bull Calf—D. Warnock & Sons, on Royal Type.

Reserve Champion—D. Warnock & Sons, on Royal Model.

Champion Heifer Calf—Maxwell-Miller Cattle Co., on Max Mill Acorn.

Reserve Champion—Gleason & Blazer on Roan Splendor.

Aberdeen-Angus.

Judge—E. T. Davis, Iowa City, Ia.

Bull, 3 years old or over (4 shown)—1st, D. D. Barr & Son, Sanford, Colo., on Baribas; 2nd, Ludwig Dietz, Arriba, Colo., on Homewood Steve 3rd.

Bull, 2 years old and under 3 (3 shown)—1st, Escher & Ryan, Irwin, Ia.; 2nd, R. R. Lucore, Arriba, Colo., on Everloise's Cap; 3rd, Ludwig Dietz, on Montfort Bob.

Junior Yearling Bull (4 shown)—1st, Escher & Ryan; 2nd, R. R. Lucore, on Knollwood Delaval; 3rd, Ludwig Dietz(on Montfort Trojan; 4th, Ludwig Dietz, on Montfort Duke.

Senior Bull Calf (4 shown)—1st, D. D. Barr & Sons, on Eran; 2nd, Ludwig Dietz, on Montfort Eric; 3rd, Mrs. Sadie Coleman, Arriba, on Coleman's Prince.

Junior Bull Calf (4 shown)—1st, Escher & Ryan, on Blackiap Revolution; 2nd, D. D. Barr & Sons, on Exter En.; 3rd, R. R. Lucore, on Knollwood Embosser; 4th, Ludwig Dietz, on Montfort Knight.

Cow, 3 years old or over (5 shown)—1st, Escher & Ryan, on Blackbird Gift 13th; 2nd, R. R. Lucore, on Knollwood Entry; 3rd, Ludwig Dietz, on Arickaree Pansy.

Cow, 2 years old and under 3 (4 shown)—1st, Escher & Ryan, on Pride Perfection; 2nd, Ludwig Dietz, on Knollwood Hulda; 3rd, R. R. Lucore, on Knollwood Queen Mother 3rd.

Senior Yearling Heifer (3 shown)—1st, Escher & Ryan, on Pride Protest; 2nd, Ludwig Dietz, on Montfort Pearl.

Junior Yearling Heifer (5 shown)—1st, D. D. Barr & Sons, on Prizenora; 2nd, Escher & Ryan, on Elmona; 3rd, R. R. Lucore, on Knollwood Victory; 4th, R. R. Lucore, on Knollwood Eunice 2nd; 5th, Ludwig Dietz, on Montfort Maude.

Senior Heifer Calf (5 entered)—1st, Escher & Ryan, on Pride of Perfection; 2nd, Ludwig Dietz, on Montfort Maria; 3rd, R. R. Lucore, on Knollwood Etna.

Junior Heifer Calf (5 shown)—1st, Escher & Ryan, on Pride Perfection 9th; 2nd, R. R. Lucore, on Knollwood Julalia; 3rd, Ludwig Dietz, on Montfort Hulda.

Calf Herd, consisting of 1 Bull and 2 Heifers, all under 1 year old and all bred by exhibitor—1st, Escher & Ryan; 2nd, R. R. Lucore; 3rd, Ludwig Dietz.

Four Animals, either sex, get of one sire—1st, Escher & Ryan; 2nd, R. R. Lucore; 3rd, Ludwig Dietz.

Two animals, either sex, produce of one dam—1st, Escher & Ryan; 2nd, R. R. Lucore; 3rd, Ludwig Dietz.

Senior Champion Bull—Escher & Ryan, on Bar Marshall.

Reserve—D. D. Barr & Son, on Baribas.

Junior Champion Bull—Escher & Ryan, on Prince Marshall.

Reserve—Escher & Ryan, on Black Cap.

Grand Champion Bull—Escher & Ryan, on Bar Marshall.

Reserve—Escher & Ryan, on Prince Marshall.

Junior Champion Heifer—Escher & Ryan, on Pride Perfection 8th.

Reserve—D. D. Barr & Son, on Prizenora.

Cattle Have Depraved Appetite.

I have three cows and one yearling bull. When I turn them out to pasture they stay around the yard and chew on rags, straps, leather of any kind, cans, buckles and anything they can find. I can't understand the reason. I have block salt in lot and am feeding alfalfa hay, beet pulp, and beet top pasture.—R. N., Otero county, Colo.

Depraved appetite, among cattle especially, is quite common at this time of the year. After being on dry feed for some time, and as the time approaches for shedding of coat, they are liable to develop this condition. It probably is induced by a catarrhal condition of the intestinal tract due to non-succulent food, and other conditions incident to winter feeding. At this time animals will not always eat wholesome food, or drink clean water, when it is available. Recently in a herd where three yearlings had died of impaction, cattle were seen eating from the butt of a rotten straw stack, and drinking from a slough, when the best quality of alfalfa hay and artesian water, was supplied in abundance. I know of no way to handle the proposition except to feed wholesome food that is laxative, plenty of salt, and keep rubbish of all kinds away from them. They seem to have a penchant for eating horse manure, chewing on bones, leather, lapping the whitewash off fence posts and buildings, eating dirt, etc. A physic, using glauber or epsom salts, will sometimes be beneficial. Moldy or decayed beet tops may be responsible. Whether it is due to a catarrhal condition of the intestines or malnutrition, the cause rests with the conditions of winter feeding and will disappear with the appearance of grass next spring.—G. H G.

There are two species of robins in the United States, the eastern species and the western species. They are so near alike that the layman can not tell the difference between them.

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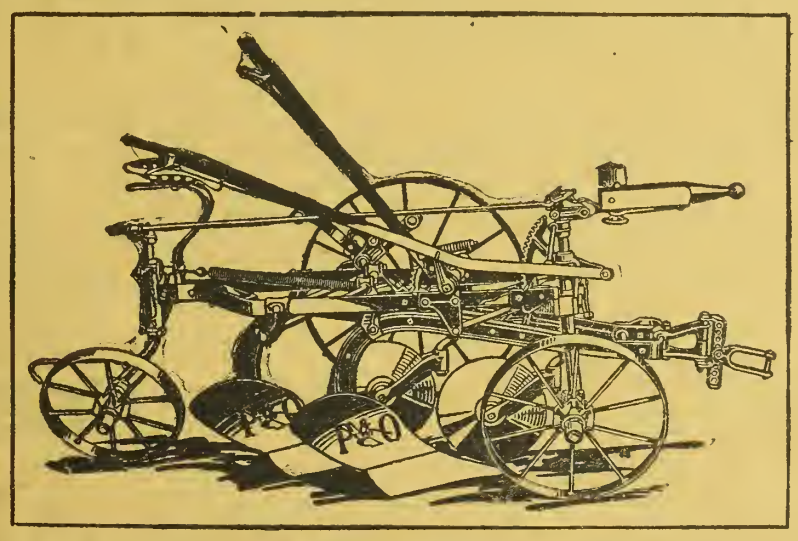

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Witch's Island.

(Continued from Page 7.)

your mission—at St. Thomas, you know—gossip along the waterfront, for example."

"I hardly know," she said with a shrug. "Hoban arranged our transportation."

"Oh, Hoban?" said Grayson.

She glanced at the man beside her. "Yes; Hoban secured passage for us."

"Had he difficulty in doing so?"

She turned to her retainer. "Not much, had you?" she asked.

"No, Miss Edith," he answered. He had a husky voice, low pitched, and with an odd twist which was neither brogue nor accent, yet hinted at birth out of the States.

"Hoban has had much experience; he makes light of travel troubles." She was speaking to Grayson again. "He is, in short, that treasure, a most capable person."

"So I infer," said Grayson. "And he came with you from New York?"

"Certainly! He'd never desert me in a time like this. And with him I'd feel safe—anywhere."

"Enviable Hoban!" I put in. It was not a judiciously timed remark, for the girl frowned, Grayson bit his lip, and the person of enviable lot lost a little of his immobility of countenance. Hitherto he had shown no more emotion of any sort than might have been displayed by a wooden Indian, but now there were traces of a scowl on his face, which was heavy featured and clean shaven, except for a neatly blocked-out patch of whisker in front of each ear.

There was a moment's constrained silence. Grayson ended it.

"Whatever may happen to-morrow, to-night's first to be dealt with. Our outfit is primitive, Miss Perham, but if there is anything we can put at your disposal, command us."

"Thank you, there is nothing," she said with decision. "We have tents—Hoban will prepare a meal. No; there is no reason to trespass on your hospitality."

"As you prefer, of course," said Grayson.

She was still regarding him with her cool self-possession. "You have not yet agreed to cease work on the yacht?"

"Unfortunately I can make no such promise."

"But I insist!"

"And I must decline. Believe me, your demand is puzzling. I must consult my partner. We may hit upon a solution which will be acceptable to all of us."

"There is but one solution possible."

"Nevertheless," said Grayson, "reflection may bring light. A further conference——"

She cut him short. "There need be none. I shall change my attitude in no respect."

Grayson bowed, slipped an arm through mine, turned toward the path leading to the hut. I did not look back till the fringe of undergrowth was reached. Then, turning for an instant, I saw the girl calmly superintending the labors of her faithful Hoban, who had resumed unloading their boat. Her back was toward us, and seemingly she had dismissed us from her mind.

CHAPTER IX

Of A Purposeful Lady.

Grayson, who had been smoking in silence for a quarter hour, of a sudden knocked the ashes from his pipe and spoke vehemently.

"Scott, this is the devil of a pother! It's preposterous, out of all calculation, unlucky beyond imagining. Here's this girl, dropping in upon us as coolly as you please—or she pleases—fine, upstanding, decent girl, who looks you straight in the eye and tells you what she thinks. Orders you off coolly as if she'd caught you stealing pansies from her flower beds. Expects you to go, too, just as if there were a policeman within call. Oh, Lord, it'll be a mes of happenings!"

"Well, what are you going to do about it," said I, petulantly. I had been doing some meditating on my own account, and reveries of the interview with Miss Perham hadn't increased my good humor.

He dug a heel into the sand. "I don't know. What's your idea of the proper thing?"

"She's a prejudiced party," said I. "She'll be obstinate."

"Her mind's pretty thoroughly made up," he admitted. "She's sure she's right, and so she's going ahead, regardless. That's the way she's gone so far. Why, look here, Scott! Consider! She's been raised in luxury—her father had money enough to run the Zenobia, remember. She's been cared for, and guarded, and shielded from unpleasant things all her life. She's always had her way. People have done what she asked them to do. Now, of a sudden, it's all different. But she hasn't grasped the fact yet. There isn't so much money. If there were, she wouldn't have had to figure on expense; she would have had somebody down here with a full wrecking crew for the job. She knows she's short of cash, and so she comes on her own hook to investigate and see if it's worth while to dig into her capital."

"Why isn't there sense in that?" I demanded, being, in fact, disposed to controversy.

"There might be, if she had any glimmering notion of the game she'll have to play; if she'd ever thought of correcting her views of life for latitude and longitude. This isn't New England or New York by a long shot; it's a God-forsaken jumpingoff place. Law? Just as much as you can enforce for yourself. Property rights? All you can grab and hold against all comers. And here she is, with some sort of a family man-of-all-work to look after her, and drive off squatters like you and me and other cutthroats that happen along."

"I reckon we won't be driven," said I.

But he stuck to his train of thought. "Hoban's all right—in his line. He's that rare bird, a trustworthy retainer, I warrant you, with all the bird's virtues and defects. He's been trained to let somebody else think for him. 'Come along!' says the girl, and along he comes. If there's trouble he puts up his best fight, but he doesn't scheme and work out ways to dodge the trouble."

"Or he'd never have let her get into this fix?"

"Never! And, on her side, there's utter reliance on him and confidence in the sort of world she's always known, along with an American girl's beautiful belief that this earth was made for her to stroll about as she pleases. No girl but an American girl could have made this expedition; no American girl could have made it except one reared and sheltered as she has been, and ignorant as she is."

"Still agreeing with you," said I, "I repeat: What are we going to do about it?"

"It's magnificent ignorance; it's folly carried to the nth degree."

"Umph! Una walked among the lions, didn't she?"

"There are more tigers and snakes and jackals than lions in these parts."

"You shun the real question," I pointed out.

"I'm not ready for it. I'm trying to picture the state of her affairs. The financial part we can reckon established, I fancy. If there had been a pot of money, there'd have been some trustee, or administrator, or advisor to veto the venture, or send an expedition strong enough to take care of itself."

"Agreed! Go on."

"Admit financial stringency, and you'll have to bar mere curiosity as a moving cause. There must be a substantial reason. She has ground—or thinks she has ground—to believe there's salvage worth recovering. Now, what is it?"

"The mummies" I hazarded.

"Doubted."

"What, then?"

He spread wide his hands. "Make any guess you like; the field of conjecture is limitless."

"If Perham had money enough to keep a big yacht, his estate should suffice to keep one daughter in affluence. If it fails to do that, why—why isn't it a logical inference that a lot of his property was aboard the boat?"

I could see that Grayson was impressed. "That has a reasonable sound," he admitted.

"And a pleasing sound?"

"Yes." The word was uttered curtly.

"Well," I observed after a moment's pause, "have you done with theorizing?"

"No; but Scott——" He broke off abruptly, sprang to his feet, and fell to pacing back and forth before the fire. "Hang it, man! it'll have an ugly look. Girl—legal heir—on the ground; stray looters ready to drive her off. No law about it, you say. Wreck abandoned? True enough and yet—I've done my share of queer stunts in my time, but I hate to rob a woman."

"Especially a pretty one?"

He halted, and glared down at me. "Yes, especially a pretty one. We won't argue that. Justice is justice always, maybe; only sometimes it's more so."

"Particularly when beauty smiles on you," I growled.

He laughed, nervously. "Oh, you're handicapped, Scott, but you'll have your chance. Get a shave and a clean shirt. They'll work wonders in your tout ensemble."

"To thunder with you!" said I. "You're weakening, because a pretty girl has condescended to talk to you for a few minutes—and ordered you off her reservation."

He was serious enough in an instant. "When I weaken on this job, you can carry me out, toes up. It's my big play, man, my one hope to make a strike. But I can't tell how it'll have to be made—with her or against her. Who knows how much talk she and that fellow Hoban made at St. Thomas? Who knows how many highly undesirable citizens have got a tip that something's doing hereabouts? How soon will the first patched jib come poking around the end of that island yonder? Who knows how many ruffians will be in the crew of the boat that carries that jib? As against such a gang, we might be driven to make common cause. Whatever happens, we'll have to see she comes to no harm, of course. She' American, we're Americans—we've got to stand by her."

"Oh, in that way, yes," said I. "But meanwhile—what?"

"I'm going to see her, to talk things over. We ought to come to some understanding."

"Desire my company and moral support?"

He hesitated. "N-o-o—unless you care especially to be there."

"Care?" said I. "Not a copper's worth!"

He laughed, but there was no heart in his laughter. He moved away, slowly, and with the bowed head of one who is thinking deeply and none too cheerfully.

A good hour must have passed before he returned, dropped on the sand beside me, and clasped his hands about his knees.

"Well?" said I, for he seemed to need prodding in the matter of a report.

"Nothing doing," he replied.

"The lady obdurate?"

"She has a fine will of her own. Given that, a clear conscience, and certain attendant conditions——" He checked himself, paused an instant, went on, with a change of tone, "Scott, we're wonders at diagnosis, but quacks at treatment. As fortune tellers we've read her past and present, but the future's beyond our powers—beyond mine, anyway. I give it up."

I went back to the old conundrum. "Well, what are you going to do about it all?"

He threw up his hands in a gesture of helplessness. "God knows!" he groaned.

CHAPTER X

The Logic of Events.

Having decided, perforce, to let the future take care of itself, we went about our work next morning, attempting no further negotiations with the rival camp.

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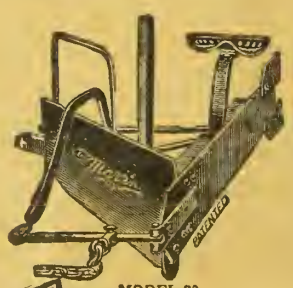

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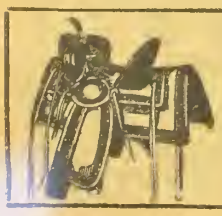

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Hoban was cooking breakfast as we passed the tents but the girl was not in sight.

Aboard the wreck Grayson donned his diver's suit and went below, and presently we were hauling up broken beams and planks, with a deal of trouble in view of the meagre results. This had gone on for some time before I saw the white boat putting off from the beach.

"Give Mr. Grayson the signal to come up," I told the skipper, and devoted my attention to the approaching craft.

Hoban pulled his curiously stiff stroke, but now the yawl's rudder had been shipped and Miss Perham held the lines. It was clear that she was steering for the stern of the yacht, alongside of which, in due course, she laid the boat. Whereupon Hoban made fast, assisted his mistress aboard, and promptly followed her.

I was watching the girl closely, prepared to doff my cap if I could catch her eye, but she gave no hint of knowledge of my existence. Grayson was luckier. He had been relieved of his helmet, but still cut a sufficiently remarkable figure, which may account for the fact that she studied him with undeniable interest, if not with favor; and when he bowed, acknowledged the salute with a slight inclination of her shapely head. Then she began to pick her way forward, the faithful Hoban close at her heels.

As has been said, the bow of the Zenobia was slightly deeper than the stern, so that the deck, where the newcomers had stepped upon it, was clear of water. As they came toward us, however, they began to encounter pools and then ponds, not deep, to be sure, but threatening to shoe leather. There was, however, more or less debris strewn about, which might be used like stepping stone in shallows, and of these helps the girl took full advantage. I marked the grace of her movements, the splendid poise; and shook my head. A girl like that had no business to be there. It was all wrong, and her very attractiveness made it worse.

In her cruising days, as has been related, the yacht had had a bridge and under it a chart-room; the placc of the one now indicated by twisted stanchions and that of the other by the charred remnants of its walls. The after house, too, had been practically destroyed by seas and fire, so that there was nothing to obstruct our view of the advance of the visitors. They halted, at last, a dozen paces from the forehatch—at the limit of the stepping stones, so to speak.

A moment the girl surveyed us, calmly and resolutely.

"Once more," she said, "I command you to leave this ship. You are to understand that this is a formal demand, made by me as owner of the vessel and in the presence of a witness. As the owner, I order you to go away—without delay, instantly!"

"And once more," Grayson answered patiently, "we must decline to obey. I have tried to explain why we question your title; I regret I can neither amplify our statement nor change our decision."

"It is needless for you to attempt the former," she retorted.

"Of that I fear there can be no doubt."

"But you shall rue your decision. The law punishes thievcs."

I started at the word. "Thieves" At least, she might have called us robbers or bandits or pirates, man-sized villains, as it were. But Grayson's temper was proof.

"I am sorry that we can not see facts in the same light," he said, very courteously. "And as for the roles we play—why, in these latitudes each must settle with his own conscience rather than with the law."

Her lip curled. "The one being more clastic than the other?"

"No; merely more directly applicable."

She wheeled abruptly, and moved aft, Hoban keeping his place in her train. I glanced at Grayson.

"Well?" said I. "What now?"

"Turn to!" he answered curtly. There's nothing more to be said."

I couldn't gainsay him. The period of argument was past, plainly enough, if ever it had been clearly defined. So the diver's helmet was replaced, Grayson climbed down the ladder, the pump was set in motion, and the dreary routine went on.

Miss Perham and Hoban were close to what had been the companion leading to the main saloon. Hoban was sounding with a line and again with a pole, the girl watching him closely and referring at frequent intervals to a notebook. Once or twice she took the pole from him, and prodded vigorously at objects in the submerged cabin; and these experiments of hers were followed by brief consultations with her helper. A little later they transferred their attention to the deck aft the companion, to which, however, they had returned before we knocked off for food and rest at noon.

Smoking a pipe together, Grayson and I compared theories.

"There's but one saving circumstance," he told me. "Our field is forward; theirs, so far, is in another part of the ship. At present neither party interferes with the other; and that's a condition that can go on indefinitely, so far a I'm concerned."

"Then you don't think there's plunder aft?" I queried.

"I'm not sure whether there is or not. Old Louis's crowd, though, went through the cabin quarters after a fashion, and didn't rake up much but rugs, silver, furniture and the like. And they were not the chaps to overlook portable valuables, even if they were in a hurry. The yacht wasn't so deep in the water then; that's to be borne in mind."

"Anything worth while in the after house?"

"Nothing beyond comfortable fittings. It wasn't a big affair, you know, something in the line of a sun parlor, lounging room—that sort of thing. Perham lived below, and so did his guests, when he had any."

"Not being a free-handed entertainer?"

"Far from it. As I've told you, he cruised alone most of the time. And, by the way, the yacht's furnishings weren't luxurious."

"Yet it must have cost a pretty penny to keep her in commission."

He nodded. "Yachting in a big boat like this is no poor man's week-end affair. Perham was out in her for months at a time—he practically lived aboard."

I took an observation of Perham's daughter. "They're following our schedule," said I. "They've piped to luncheon. And, by thunder! they're doing it in style. They've rigged a table, and spread a cloth!"

"There's a high degree of capacity about Friend Hoban," quoth Grayson.

"He knows how to treat a lady!" said I, maliciously.

Grayson fell to drumming with his fingers on his knee. "Rather approve of the decencies of life, myself. Have had to do without them enough to value them. That contraption you've called a table stands for something in the social scale."

"Signing for the flesh-pots and fine herbs?"

"I've sighed for 'em in my time. Just now I'm sighing chiefly for a tunnel through that jumble below."

"I wonder," said I, "how much she knows about the mummies. Or about the circumstances of the wreck, for that matter. Told her your story?"

"No; she didn't encourage confidences. She kept the conversation close to the main issue. And—well, she's a masterly young person, Scott."

"Fair but not fickle, eh?"

He chose to revert to our worthies of ancient Egypt. "You asked how much she probably knew about the mummies. Very little, I think. At any rate, there's something else aboard—or she suspects there's something else—which interests her more. Otherwise, there'd have been more action about the forehatch this morning."

"We're four to two," I objected. "What could she have done?"

"You'll have to ask her," said he drily. "She's a remarkably enterprising young woman, to my way of thinking."

Enterprising as she may have been, she did not elect to interfere with us that afternoon; and we toiled forward, undisturbed, while she and Hoban continued their explorations aft. They could hardly have made many discoveries, but they were persistent, Hoban at last attempting the diver's role, came up puffing and sputtering but with no trophics. I was watching him, half in sympathy and half in amusement, when the skipper uttered a sharp exclamation. I whipped about.

He had no need to point seaward; his excited jabber fell on ears that required no explanation of his alarm.

One of Grayson's prophecies was already proving true. The patched headsails of a schooner were creeping into sight beyond the outer island.

CHAPTER XI

They May Keep Who Can.

The stranger came in very rapidly, driving along before the stiff breeze and carrying a bone in her teeth. As she cleared the end of the island we could see that she was a little craft, blunt-bowed and stumpy of mast; but with all plain sail spread she made famous progress, and the manner in which she shifted helm and shot into the lagoon, showed that somebody on her knew the channels among the reefs.

Grayson, fortunately, had been on deck when she appeared, and instinctively we drew closer to him, rallying about him, indeed, as the leader in a crisis.

"Strong handed, is she?" he asked the skipper, the keenest sighted among us.

"Seven—eight men, sah."

"That'd be about her complement. Know her?"

The skipper hesitated. "Not sure, sah. Maybe out of Martinique, maybe not."

"Humph Acts as if she'd been here before," Grayson remarked, half to himself.

The skipper stirred uneasily. "The Pera? Dat fellow—he lay her aboard?"

Grayson squinted at the intruder. "No; we're her meat. She isn't going to waste Ha! What'd I tell you?"

The crew of the strange schooner were shortening sail, making a quick job of it, if not a very seamanly one, but her course was still laid for the wreck. In fact, for a little, it seemed as if her master proposed to run fairly alongside us. However, her nose suddenly swung, and as she pointed into the wind and lost headway, an anchor plumped over the bow. A moment later she had put over a yawl, into which half a dozen men tumbled. There was a merry splashing of oars, plied lustily if raggedly, a tall chap in the stern steering and yelling encouragement to his crew.

Grayson bent over the rail, and shouted, "Boat ahoy!" at the top of his lungs; whereat the oarsmen turned on their thwarts to stare at him. The boat, however, continued to glide forward under her impetus.

"Who are you and what do you want?" he demanded.

The fellow in the stern sang out something which might have been Greek, so far as I was concerned, but which Grayson interpreted readily.

"No, you don't!" he bellowed. "None of that. Shcer off and keep off!"

The boat was so near that the features of the men could be made out distinctly, and as ruffianly a lot they were as one might come upon—not a white man among them and not a full-blooded negro, but almost as many crosses of race represented as there were individuals. None of them appeared to have a gun, but little imagination was needed to arm every man Jack with knife or pitol or bludgeon.

So far as we were concerned, armament was equally limited. The Pera's ancient fowling piece was ashore. Grayson had a revolver and so had I, but neither Jose nor the skipper was equipped with anything more effective than a sheath-knife. Truth to tell, though a raid by rivals was well within the possibilities, even our alert leader had not prepared for one with such scant warning. As it was, being no marksman, I left my pistol in my pocket and grasped a stout club, in this following the example set by Jose. The skipper's hand went to the haft of his knife. Grayson still bent over the rail.

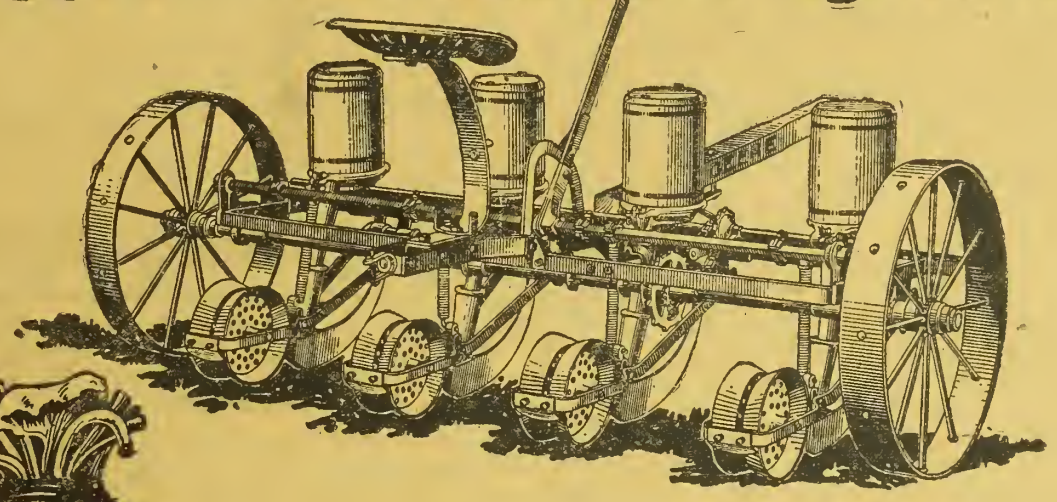
"Keep off!" he shouted sternly, but even in that moment, while the boatmen rested on their oars, I doubt if anybody on either side had a notion that the order would be obeyed.

The tall fellow laughed jeeringly. The oars dipped in the water. Grayson straightened his back, but kept his eyes on the enemy.

"All hands, repel boarders," he said over his shoulder.

I must admit they came on gallantly enough, the rowers bending their backs, a couple of swarthy scoundrels crouching in the bow, ready for a spring to the yacht's low-lying rail, and their commander showing his teeth in a grin of savage expectation. He steered straight for us, too, with the confidence which lets the other fellow choose the

Bigger Profits from Sugar Beets



"In the Twin Falls Countr; there was produced 11,200 pounds of sugar per acre, which at the present prices will bring $1,080.00." This quotation from a recent publication shows what is being done and what can be done in the sugar beet industry.

THE present average in the United States is only about 15 tons of sugar beets per acre. A perfect crop of beets is a two-pound beet, eight inches apart in 18-inch rows—44 tons of beets, or over $1,080.00 worth of sugar per acre.

Every additional ton you get means extra profit. To increase your yield, you must use tools made especially for planting, cultivating and harvesting beets.

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BEET AND BEAN TOOLS

John Deere 4-row planters and cultivators are primarily beet tools, but are easily convertible into high-class three row bean tools.

John Deere 4-row beet planter is equipped with John Deere "Natural Cell Fill" Seed Plates—the accurate seed-dropping mechanism that plants seeds at equal distances apart over the entire field.

John Deere 4-row beet cultivator is equipped with quick adjusting tool bars, the most simple construction ever devised for enabling operator to change adjustment and styles of tools to suit field conditions.

John Deere No. 20 beet lifter is the riding two-wheel lifter with special shaped lifting blades that do not damage the beets. Instead they loosen the beets, pulverize the soil, lift the beets a short distance and leave them upright and easy to handle.

Only two wheels—as easy to turn and back as a two-wheel cart — no tongue truck required—only one lever.

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ground of combat; though, as a matter of fact, it was no harder to board the wreck at one point than at another, the deck of her being practically awash from bow to stern.

There was, of course, the dragging moment of awaiting the onslaught, and in it my glance strayed aft. I fear I had forgotten the girl and Hoban; beholding them certainly had an odd effect of surprise. They had ceased their labors, and were watching the boat, Hoban standing in his stiff attitude of the soldier at attention. Miss Perham erect, observant, and be it confessed, with every token of neutrality. Well, it wasn't her fight. In her view one gang of looters might be no better than another; disaster to either might be only less desirable than disaster to both. In her splendid ignorance, and her blind faith in the long arm of the law and the sturdy protection of the capable Hoban, she was waiving the slight difference in average complexion of the hostile gangs. I gritted my teeth at the thought, grasped my club tighter, and turned with new zeal to take a part in the impending struggle for possession of the Zenobia.

Very skilfully and with generalship the leader of the enemy threw the boat alongside, shifting her course at the last so that she did not strike us bow-on, but at so slight an angle that he brought his full force into play at once. His spring for the rail was little longer than that of his bowmen, and followed it by a bare fraction of a second, while the fellows in the waist of the boat swung viciously at our heads with their oars.

A descending blade grazed my shoulder, and I struck at a woolly pate. There was a thud of wood on a thick skull, and the man grunted and slid forward from his thwart; but even as he did so, his nearest mate caught my club in one and with the other jabbed at me with a knife, whose point raked my forearm. Then somebody, who had reached the rail, toppled over it, upsetting my adversary, and down went both together.

I shouted gleefully—and was bowled over by a pair of combatants, who collided with me with the force of a battering ram. A bare, black foot trod on me with a cruel violence and I clutched the leg, tripping the owner, who fell over me. He caught at my throat, and I at his, both of us having lost our weapons. For a little we writhed and struggled, with no great advantage for either and a fair chance for both of drowning in the water which covered the deck. Then I heard the report of a pistol, followed almost instantly by another. There was a heavy groan close to my ear, and the hands at my throat relaxed their grip.

I shook them off, and got upon a knee, none too clear in wits and with a sense of a world awhirl about me. But I knew that the tide of battle had turned, and that we had won.

The skipper, the shirt half torn from his back and blood streaming from a gash in his face, was hurling curses at a retreating enemy. Jose was stolidly binding a wounded arm with a colored handkerchief. Grayson, revolver in hand, was grimly watching the boat. He, too bore marks of the combat, but seemingly had come to no great harm.

Our force thus accounted for, I looked about for the enemy's dead, not realizing that a very pretty rough-and-tumble battle may be waged without fatalities. A couple of fellows were sprawled in the bottom of the boat, and their leader was clutching at a shoulder, but the others evidently were able to row; for the boat was zigzagging back to the schooner. But there had been another to be accounted for, the one from whose attentions I had been so mercifully relieved. Dully puzzled, I turned to look for him, and was just in time to behold him spring to his feet, dash for the side, and dive over the rail. Whatever his hurts might have been, they were not of a sort to cripple him, for he swam after his companions at a great rate, and presently overhauling the boat, was dragged aboard with small ceremony. Then, in due course, they were alongside their vessel and scrambling over her side; and then, in amazingly short order her anchor was up, they had canvas on her, and she was heading out to sea as if in a precious hurry to be gone.

I got upon my feet, but was glad to lay hold upon the rail, for I was still sick and dizzy. Grayson bent and picked up a pistol lying in the water on the deck.

"They opened with the artillery," he said, "and drove me to respond. Fortune was kind, though—I winged their gunman before he could get off a second shot. And so he was pleased to get away alive, as were his pals; and they didn't linger to try a second attack or even a flanking movement. If they'd captured the Pera, now, they'd have put us to our trumps."

"That they would!" I agreed. "As things are, however, we're well rid of them."

"And 'for the present,' and I'm of your mind," said he.

The creak of oars caught my ear. Miss Perham had had enough of the wreck for the day. Hoban was rowing her ashore. She sat erect in the stern of the white boat, her gaze straight before her, and never a thought in her pretty head, apparently, of the men whose prowess she had observed.

"Umph!" said I a bit grumpily. "Mighty little she cares who won the fight."

Grayson nodded. "I'm afraid you're right. Also I fail to see what we are going to do about it."

At that I grinned at him with a sort of feeble triumph. "You're coming to my way of thinking," said I, and he did not attempt denial.

To be Continued.

A Review of the Durocs.

B. W. FAIRBANKS.

The Duroc-Jersey Show at the National Western Stock Show was more than a success—it was a revelation. During the judging, the ringside was crowded with interested spectators, and upon every hand the verdict was to the effect that this was the best Duroc show that the West has ever seen. The breeders made the success possible by driving out before the judge large classes of very typy stuff. All the way through, the spectators had excellent demonstrations of size for age, good stretch of body, strong bone and excellent feet, and these, coupled with all the quality necessary. The judging was very ably done by Mr. W. A. Williams of Marlow, Okla., who would not take stuff that was highly fitted, and each prize winner had to carry a good shoulder. The class of young stuff was much larger in numbers than the older classes, which was an indication that Colorado was progressing in the breeding of Duroc-Jersey hogs.

Burke's Good Enough Again, owned by the Blue Ribbon Live Stock company of Pueblo, was a winner in the aged class. This is the third consecutive time that this boar has carried off the honors in this class. This boar with Professor Morton's Montair Sensation and the Colorado Agricultural College's Cherry Chief of Edgemore was driven out for the three-cornered fight for senior championship. Burke's Good Enough Again has the size and a wonderful shoulder, but he is sloping in the rump and down a little on his hind feet. These put Montair Sensation and Cherry Chief of Edgemore above him, with Cherry Chief of Edgemor getting senior championship and Montair Sensation reserve senior championship. J. W. Brauer of Colorado Springs drove out the junior championship boar. He was wide, carried a good arch to the back, plenty of length to the sides and all the smoothness desired. Cherry Chief of Edgemore finally won over the junior championship and was made grand champion of the show. J. W. Brauer's boar was made reserve grand champion.

In the sow class, Caldwell Martin's sow was made grand champion and Dr. Daly's Crusader Queen was junior champion and reserve champion. Crusader Queen was the sensation of the show. She was a wonderful gilt, and the judge in placing the awards said, "She is a most excellent gilt, but as she has a long way to go, I put up the bigger sow."

The swine awards follow:

Duroc Jersey.

Judge—W. A. Williams, Marlow, Okla.

Boars, 2 years old or over (9 shown)—1st, The Blue Ribbon Live Stock Co., Pueblo, Colo.; 2nd, R. C. Van Scoy, Denver, Colo.; 3rd, Earl Wilson, Denver, Colo.; 4th, Caldwell Martin, Littleton, Colo.; 5th, Vaille Ranch, Littleton, Colo.

Boar, 18 months and under 2 years (5 shown)—1st, Geo. E. Morton & Sons, Ft. Collins, Colo.; 2nd, Colorado Agricultural College, Ft. Collins, Colo.

Boar, 1 year and under 18 months (8 shown)—1st, Colorado Agricultural College; 2nd, The Blue Ribbon Live Stock Co.; 3rd, H. Bert Cave, Littleton, Colo.; 4th, Colorado Agricultural College; 5th, Grace Waggoner, Englewood, Colo.

Boar, 6 months and under 1 year (17 shown)—1st, J. W. Brauer, Colorado Springs, Colo.; 2nd, E. D. Hardman, Pueblo, Colo.; 3rd, Warfield Ryley, Longmont, Colo.; 4th, The Blue Ribbon Live Stock Co.; 5th, The Blue Ribbon Live Stock Co.

Boar, under 6 months old (41 shown)—1st, J. W. Brauer; 2nd, Caldwell Martin; 3rd, Dr. F. T. Daly, Cambridge, Neb.; 4th, Colorado Agricultural College; 5th, Caldwell Martin; 6th, Donald Plum, Greeley, Colo.; 7th, J. W. Brauer.

Boar pig born in June, 1919 (19 shown)—1st, Blue Ribbon Live Stock Co.; 2nd, Blue Ribbon Live Stock Co.; 3rd, Blue Ribbon Live Stock Co.; 4th, Colorado Agricultural College; 5th, Colorado Agricultural College; 6th, Colorado Agricultural College; 7th, Colorado Agricultural College.

Sow, 2 years old or over (19 shown)—1st, Caldwell Martin; 2nd, Grace Waggoner; 3rd, Colorado Agricultural College; 4th, Caldwell Martin; 5th, Caldwell Martin.

Sow, 18 months and under 2 years (13 shown)—1st, J. W. Brauer; 2nd, H. W. J. Edbrooke, Denver, Colo.; 3rd, Vaille Ranch; 4th, Blue Ribbon Live Stock Co.

Sow, 1 year and under 18 months (28 shown)—1st, Geo. E. Morton & Sons; 2nd, A. A. Clements, Paonia, Colo.; 3rd, Blue Ribbon Live Stock Co.; 4th, Colorado Agricultural College; 5th, Colorado Agricultural College.

Sow, 6 months and under 1 year (32 shown)—1st, Caldwell Martin; 2nd, J. N. Campbell, ——; 3rd, The Blue Ribbon Live Stock Co; 4th, The Blue Ribbon Live Stock Co.; 5th, The Blue Ribbon Live Stock Co.; 6th, McIntyre & Kinney, Denver, Colo.; 7th, McIntyre & Kinney.

Sow, under 6 months old (40 shown)—1st, Dr. F. T. Daly, Cambridge, Neb.; 3rd, Caldwell Martin; 4th, Caldwell Martin; 5th, Dr. F. T. Daly; 6th, Colorado Agricultural College; 7th, Dr. F. T. Daly.

Sow pig born in June, 1919 (26 shown)—1st, Blue Ribbon Live Stock Co.; 2nd, Blue Ribbon Live Stock Co.; 3rd, Colorado Agricultural College; 4th, Blue Ribbon Live Stock Co; 5th, Colorado Agricultural College; 6th, Blue Ribbon Live Stock Co.; 7th, John E. Burns, Longmont, Colo.

Senior Champion Boar—First, Colorado Agricultural College; 2nd, George E. Morton, Fort Collins, Colo.

Junior Champion Boar—J. W. Brauer, Colorado Springs, Colo., on Colorado Chief Sensation.

Grand Champion Boar—Colorado Agricultural College, on Edgemoor Cherry Chief 2nd. Reserve, J. W. Brauer.

Senior Champion Sow—Caldwell Martin on Edgemoor Juno.

Reserve Champion Sow—J. W. Brauer.

Junior Champion Sow—Dr. F. T. Daly.

Reserve Champion—Caldwell Martin.

Grand Champion Sow—Caldwell Martin, on Edgemoor Juno.

Reserve Champion Sow—Dr. F. T. Daly.

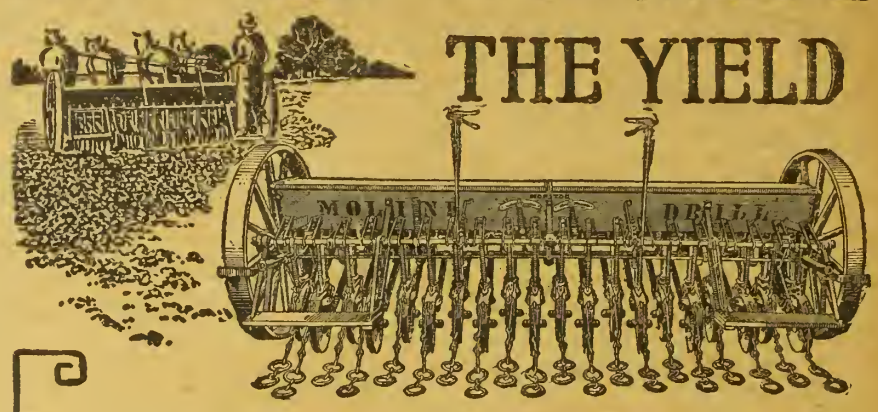
Boar and 3 sows, over 1 year old—1st, Caldwell Martin; 2nd, Colorado Agricultural College; 3rd and 5th, Blue Ribbon Live Stock Co.; 4th, W. L. Stone & Son, Pueblo.

Boar and 3 sows, over 1 year old, bred by exhibitor—1st, Caldwell Martin; 2nd, Blue Ribbon Live Stock Co.; 3rd, Colorado Agricultural College.

Boar and 3 sows under 1 year old—1st, Caldwell Martin; 2nd, Dr. F. T. Daly; 3rd, Colorado Agricultural College; 4th, Blue Ribbon Live Stock Co.; 5th, Geo. E. Morton & Sons.

Boar and 3 sows, under 1 year old, bred by exhibitor—1st, Caldwell Martin; 2nd, Dr. F. T. Daly; 3rd, Colorado Agricultural College; 4th...

SAVE SEED AND INCREASE THE YIELD



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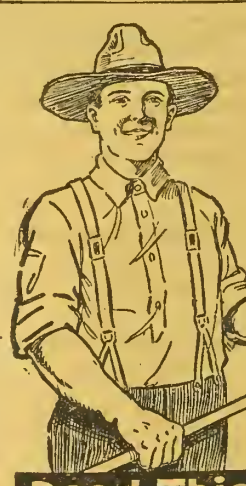

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Gehl Bros. Co.—I have fed ground alfalfa to horses, milch cows, sheep and swine every winter since 1889, and believe it is the most economical source of protein I have ever used. I am thoroly impressed with the idea of home grinding, and am pleased with the 17 inch cutter with grinder attachment which I purchased from you. I have ground 150 tons with it, grinding the third cutting as needed and at such times as the farm help is available for the work. With our 10-20 power we have little trouble in running through close to a ton an hour.
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Four animals, either sex, get of one sire—1st, Caldwell Martin; 2nd, Dr. F. T. Daly; 3rd, Blue Ribbon Live Stock Co.; 4th, Colorado Agricultural College; 5th, J. W. Brauer.

Four animals, either sex, produce of one sow—1st, Dr. T. F. Daly; 2nd, Caldwell Martin; 3rd, Donald Plumb, Greeley, Colo.; 4th, Blue Ribbon Live Stock Co.; 5th, Colorado Agricultural College.

Poland China.

Boar, 2 years old—1st, Fred W. Damrow, Haxtun, Colo.; 2nd, Deming Ranch, Oswego, Kan.; 3rd, H. B. Payne, Littleton, Colo.

Boar, 18 months and under 2 years—1st, Deming Ranch.

Boar, 1 year and under 18 months—1st, Deming Ranch; 2nd, A. D. McGillvray, Boulder, Colo.; 3rd, Colorado Agricultural College.

Boar, 6 months and under 1 year—1st, L. G. Davis, Denver; 2nd, Parsons & Holmes, Denver; 3rd, L. L. Mathison, Ft. Morgan, Colo.

Boar, under 6 months old—1st, W. E. Wright, Clifton, Colo.; 2nd, Colorado Agricultural College; 3rd, W. E. Wright; 4th, W. R. Reynolds, Longmont, Colo.; 5th, Deming Ranch.

Boar pig born in June, 1919—1st, Eleck Baldwin, Dickens, Neb.; 2nd and 3rd, Colorado Agricultural College.

Sow, 2 years old or over—1st, 2nd and 3rd, Deming Ranch.

Sow, 18 months and under 2 years—1st and 2nd, Deming Ranch, Oswego, Kan.; 3rd, Fred W. Damrow.

Sow, 1 year and under 18 months—1st and 3d, Deming Ranch; 2nd, A. D. McGillvray.

Sow, 6 months and under 1 year—1st, 2nd and 4th, Deming Ranch; 3rd and 5th, L. G. Davis, Denver.

Sow, under 6 months—1st and 3rd, Deming Ranch; 2nd, L. R. Winskey, Littleton, Colo.; 4th and 5th, Colorado Agricultural College.

Sow pig born in June, 1919—1st, Colorado Agricultural College; 2nd, L. G. Davis; 3rd, A. D. McGillvray.

Senior Champion Board—F. W. Damrow, on Longfellow.

Junior Champion Sow—Deming Ranch, on Designer Beauty Bob 2nd.

Grand Champion Boar—F. W. Damrow, on Longfellow.

Reserve Champion—L. G. Davis.

Senior Champion Sow—Deming Ranch, on Liberty Belle 1st.

Junior Champion Boar—L. G. Davis, on Gordon Wonder Boy.

Grand Champion Sow—Deming Ranch.

Reserve Champion—Deming Ranch.

Boar and 3 sows over 1 year old—1st, Deming Ranch; 2nd, Fred Damrow; 3rd, A. D. McGillvray.

Boar and 3 sows, over 1 year old, bred by exhibitor—1st and 2nd, Deming Ranch.

Boar and 3 sows, under 1 year old—1st, Deming Ranch; 2nd, L. G. Davis; 3rd, Colorado Agricultural College.

Boar and 3 sows, under 1 year old, bred by exhibitor—First, Deming Ranch; 2nd, L. G. Davis; 3rd, Colorado Agricultural College.

Four animals, either sex, get of one sire—1st and 2nd, Deming Ranach; 3rd, L. G. Davis.

Four animals, either sex, produce of one sow—1st, Deming Ranch; 2nd, L. G. Davis; 3rd, W. E. Wright.

Berkshire.

Boar, 2 years old or over—1st, C. W. Henry, Greeley, Colo.; 2nd, Robert O. Park, Edgewater, Colo.; 3rd, B. L. Rhea, Littleton, Colo.

Boar, 18 months and under 2 years—Gossard Breeding Estates, Chicago, Ill.

Boar, 6 months and under 1 year—1st and 2nd, Robert O. Park, Edgewater, Colo.

Boar, under 6 months—Lida C. Merryman, Littleton, Colo.

Boar Pig, born in June, 1919—1st, F. A. Ogle, Greeley, Colo.; 2nd, Gossard Breeding Estates; 3rd, C. W. Henry.

Sow, 2 years old or over—1st, C. W. Henry; 2nd, Gossard Breeding Estates; 3rd, C. W. Henry.

Sow, 18 months and under 2 years—1st, Gossard Breeding Estates; 2nd, Robert O. Park.

Sow, 1 year and under 18 months—C. W. Henry.

Sow, 6 months and under 1 year—1st, Gossard Breeding Estates; 2nd and 3rd, Robert O. Park.

Sow, under 6 months old—1st, Gossard Breeding Estates; 2nd, 3rdand 4th, C. W. Henry; 5th, F. A. Ogle.

Sow Pig, born in June—1st and 2nd, C. W. Henry; 3rd, Gossard Breeding Estates.

Boar and Three Sows over 1 year, bred by exhibitor—C. W. Henry.

Boar and Three Sows, under 1 year old—1st, C. W. Henry; 2nd, Gossard Breeding Estates; 3rd, Robt. O. Park.

Boar and Three Sows, under 1 year, bred by exhibitor—1st, C. W. Henry; 2nd, Gossard Breeding Estates; 3rd, Robt. O. Park.

Four Animals, either sex, get of one sire—1st, Gossard Breeding Estates; 2nd and 3rd, C. W. Henry.

Four Animals, either sex, product of one sow—1st and 3rd, C. W. Henry; 2nd, Gossard Breeding Estates.

Senior Champion Boar—Gossard Breeding Estates. Reserve—C. W. Henry.

Grand Champion Boar—Gossard Breeding Estates. Reserve, C. W. Henry.

Grand Champion Sow—C. W. Henry. Reserve, Gossard Breeding Estates.

Hampshire.

Boar, 18 months and under 2 years—1st, P. P. Ceder, Genoa, Neb.

Boar, 1 year and under 18 months—1st, C. S. Bratt & Son, Arapahoe, Neb.; 2nd, P. P. Ceder.

Boar, 6 months and under 1 year—1st and 2nd, P. P. Ceder; 3rd, C. S. Bratt & Son.

Boar, under 6 months old—1st and 3rd, C. S. Bratt; 2nd and 4th, P. P. Ceder.

Boar Pig, born in June, 1919—1st and 2nd, C. S. Bratt; 3d and 4th, P. P. Ceder.

Sow, 2 years old or over—1st, 2nd and 3rd, P. P. Ceder; 4th, C. S. Bratt.

Sow, 18 months and under 2 years—1st, 2nd and 4th, P. P. Ceder; 3rd, C. S. Bratt.

Sow, 1 year and under 18 months—1st and 2nd, P. P. Ceder; 3rd and 4th, C. S. Bratt.

Sow, 6 months and under 1 year—1st, 2nd and 4th, P. P. Ceder; 3rd, C. S. Bratt.

Sow, under 6 months old—1st and 2nd, P. P. Ceder; 3rd and 4th, C. S. Bratt.

Sow Pig, born in June, 1919—1st, 2nd, 3rd and 4th, C. S. Bratt.

Senior Champion Boar—P. P. Ceder.

Reserve Champion—C. S. Bratt.

Junior Champion BoarP. P. Ceder.

Grand Champion Boar—C. S. Bratt.

Reserve Champion—P. P. Ceder.

Senior Champion Sow—P. P. Ceder.

Junior Champion Sow—P. P. Ceder.

Grand Champion Sow—P. P. Ceder.

Reserve Champion—P. P. Ceder.

Boar and 3 sows, over 1 year old—1st and 3rd, P. P. Ceder; 2nd, C. S. Bratt.

Boar and 3 sows, under 1 year old—1st and 3rd, P. P. Ceder; 2nd and 4th, C. S. Bratt.

Boar and 3 sows, under 1 year old, bred by exhibitor—1st and 3rd, P. P. Ceder; 2nd and 4th, C. S. Bratt.

Four Anmals, either sex, get of one sire—1st and 3rd, P. P. Ceder; 2nd and 4th, C. S. Bratt.

Four animals, either sex, produce of one sow—1st and 3rd, P. P. Ceder; 2nd and 4th, C. S. Bratt.

Reports from Threshermen.

A number of Colorado people who are interested in the collection annually of accurate agricultural statistics for the state have suggested that a bill be introduced in the next legislature providing for the licensing of all threshermen and requiring them to make reports each week during the threshing season showing the acreage and production of all grain threshed by them. The form of measure generally favored is one similar to the law now in effect in Michigan, which has proved very successful. Under this no fee is charged for the licensing of threshermen, but they are required to furnish information regarding acreage and production of grain threshed in lieu of paying a fee. The State Immigration department now collects through county assessors information showing the acreage devoted to each crop, but accurate information regarding production is not available. Threshermen must obtain this information in the natural course of their business and it would require very little extra effort on their part to furnish it to some properly constituted state authority. Under the Michigan law the state furnishes the blanks to threshermen for making the necessary reports and the federal government furnishes franked envelopes in which they are mailed to the proper state authorities. They are then used by the state crop reporting service in making up final reports on the acreage and production of all grain harvested.

Steer Feeding Shows Results.

In a steer-feeding experiment conducted last year on the government farm at Beltsville, Md., four lots of 2-year-old steers were fed. The purpose was to compare cottonseed meal and soaked velvet beans when used with and without the addition of shelled corn.

The addition of corn to a ration composed of corn silage, cottonseed meal, and wheat straw did not pay. The addition of corn to the ration of velvet beans and corn silage was profitable.

The lot receiving corn silage and soaked velvet beans with a small quantity of cottonseed meal as an appetizer produced the most economical gains and showed the greatest profit, even though the daily gains and the selling price of the cattle were lower than those of any of the other lots.

The Chicago Grand Champion—Junior Lad, the grand champion steer at the International show at Chicago was bought by Mousel Brothers of Cambridge, Neb., at $2.62 a pound and slaughtered and served at a banquet held in Cambridge during the Hereford sale which broke the world's record with an average of $4,421 for the first sixty head through the ring.

Killing Off the Hoppers.

The grasshopper-killing campaign of last summer in Lewis county, Idaho, saved crops worth $327,027, above expenses of $12,000 for campaign, according to a report by County Agent A. E. Wade. The acreage treated was 6,752, for which 95,000 pounds of bran was used, with 3,175 pounds of white arsenic, 600 pounds of Paris green, 1,800 dozen lemons and 1,800 gallons of molasses. This saving in one county was greater than the entire expenditure of the university extension division for the year, which was $285,000.

"I made one mistake—But this time I think I picked a winner"

(From a letter to the Western Electric Company)

"If I was a mechanic instead of a farmer, I would have bought a Western Electric Outfit in the first place, and not waited till I was several hundred dollars poorer and wiser in the bargain. I am not going to say anything against other plants, because I know that isn't the way you work. I can't even tell the whole truth about your own outfit for fear that people might think you paid me to boost it. You don't have to. F. W. Levis

EDITOR'S NOTE: Mr. Levis is a farmer near West Chester, Pa.

When it comes to electricity I give up

"I believe the wiser a man is, the quicker he will admit how little he knows about electricity. We can see and touch mechanical things, but when somebody gets talking about electricity, he can tell us pretty near what he pleases, and we can't dispute it.

"Take batteries for instance—the most important part of any light plant. We farmers, and even the wiser ones, talk about current flowing into a battery and out of it. But how many people go beyond that? Now look at it this way. If you shoot a stream of water into a bucket fast enough, most of the water will splash out as fast as it splashes in. And if the bucket is an average wooden one, it won't be long before the bottom pushes out. To you men whose batteries are giving trouble, and you who haven't bought yet, I'd suggest first of all that you consider how the battery is charged by the generator. If the current comes in fast at first and then slows up gradually when the battery fills—as with the Western Electric—that means you'll have long-lived batteries. Otherwise you're 'out of luck,' as my son says since he came back from France.

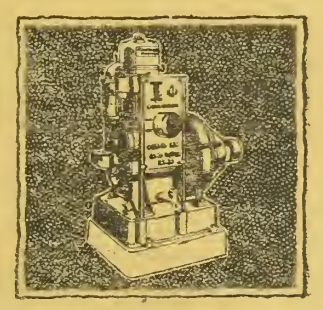
Power and light, or light and power—which?

"When I started to buy a plant, I was dead wrong about the lighting end of it. I had a lot of gentle hints at home and heard talk around the neighborhood about how nice electric light is—and it is nice. But what I needed, and what I think nine farmers out of ten need, was a piece of machinery, first and last—an engine to help me do the farm work. Because if I had power enough, light would go with it as a matter of course.

"It took me quite a while to wake up to the fact that it would be an economy to pay a little more for a large outfit that supplied plenty of power, as well as light, rather than to buy a slightly cheaper and much smaller plant that would furnish light only. Right here's the important thing, and the farmer who buys an undersized plant is fooling himself just as I came near doing, because on a farm, power is about the only thing you need except brains, and the only thing that costs nothing when you don't use it.

What I insisted on was an engine that would *run*

"Of course getting plenty of engine is one thing and whether the engine will run is another. You don't want to buy till you've seen the engine in action, any more than I did. Now I don't know what your experience has been, but mine tells me that for genuine dependability you can't beat a valve in head, 4-cycle kerosene engine—that starts just by pressing a switch and runs in all kinds of weather. These are only some of the points about my new Western Electric Outfit. There are lots others I could talk about for pages yet—like that feature of the throttle governor to give uniform speed under any load you please, and the splash system of oiling that's as certain as it's easy. But I figure you'd rather find out about these points for yourself than read my remarks.



"Please don't get the idea I am trying to convince you that there are no good farm plants except the Western Electric. There probably are. But if you can tell me one that's any better, or made by people who are fairer to a buyer or who have been in the electrical business more than 50 years—I'd like to congratulate you, because you are some little finder."

Maybe some of the information that helped Mr. Levis decide will help you too in choosing a Power and Light outfit. Just write for booklet WL-1, Western Electric Company, at Denver or Salt Lake City.

Western Electric Power and Light

Makes the Battery last longer

Western Livestock Survey.

The annual survey of livestock on farms in Colorado just completed by the Crop Reporting Service shows slight increases in the numbers of horses, mules and dairy cattle in the state, and slight decreases in other cattle, swine and sheep. The reports also show slight decreases in the average value per head of every class of livestock and a very considerable decrease in the value of all livestock on farms in the state on January 1 this year as compared with January 1, 1919.

The number of horses on farms January 1 this year is estimated at 427,000, compared with 419,000 on January 1, 1919, and the average value per head this year is estimated at $79, compared with $91 last year. This is the largest percentage of decrease shown in the value of any class of livestock.

The number of mules on hand in the state this year is estimated at 31,300, compared with 31,000 last year, and the average value per head is estimated at $101, compared with $107 last year. For the United States the average value of mules on January 1 this year is estimated at $147.10, an increase of nearly $12 per head over the values on the same date last year.

The number of dairy cattle on Colorado farms this year is estimated at 272,000, compared with 264,000 last year, and the average value per head is $87, compared with $88 on January 1, 1919. The number of dairy cattle in the United States is estimated at 23,747,000, compared with 23,475,000 last year, and the average value per head at $85.13, compared with $78.20 last year. The number of other cattle on hand in the state this year is estimated at 1,355,000, compared with 1,425,000 last year, and the average value per head is $48.10, compared with $54.40 last year. The number of other cattle in the country at large this year is estimated at 44,385,000, compared with 45,085,000 on January 1, 1919.

The number of sheep in the state at the beginning of this year is estimated at 2,121,000, compared with 2,209,000 last year. The average value per head is $9.80, compared with $10.90 last year. For the country at large the number of sheep is estimated at 46,615,000, compared with 48,866,000 last year.

The number of swine in the state at the beginning of this year is estimated at 382,000, compared with 406,000 last year, and the average value per head is $18, compared with $22 last year. A decrease of more than 1,600,000 is shown in the number of swine on hand in the United States as compared with a year ago.

Idaho Figures.

The total value of all livestock on Idaho farms and ranges has depreciated from $106,145,000 in January, 1919, to $93,357,900 in January, 1920. Although this reduction is partially attributable to the decrease in numbers of horses and swine, the chief reason is found in the decrease of $12 per head for horses, $7 per head for mules, $4.80 for cattle, $1.80 for sheep and $1.80 per head for swine. Milch cows are the only class of livestock showing an increased value. They average $85 per head, an increase of $3 over last year's value. Their value per head has been steadily increasing since 1917.

Sheep have held first place in total value since 1917, the total varying from $25,994,000 to the high water mark of $42,587,000 in 1918, while horses and cattle, other than milch cows, have contended for second place.

Horses are estimated at 270,000 or a decrease of 2 per cent in number from last year. Heavy losses of range horses have been reported due to scarcity of feed and extremely cold weather this winter.

There was no change from last year in the number of milch cows reported, which can probably be explained by the work of the ever increasing cow testing associations and the high cost of feed in eliminating the poor producers. The slacker could not earn her keep and was sent to the block. Canyon county is the banner dairy county in the state, with 12,540 cows valued at $1,040,820. Ada is a close second with 11,001 cows valued at $1,001,040. These two counties produced close to 17 million gallons of milk in 1919.

Mules, other cattle and sheep show no change in number from last year, being reported at 4,000, 537,000 and 3,234,000 respectively. Owyhee county ranks first in number of sheep with 318,973 valued at $3,157,832.

Swine are the only class of livestock that have shown no increase the past five years. The decline has been steady until today we have only 187,000, or 54 per cent of the number in 1916. Cost of production at the present high feed prices is the discouraging factor.

Wyoming Figures.

In Wyoming the drouth caused nearly a 50 per cent shortage of forage and feed resulting in a corresponding reduction in cattle and sheep herds which were shipped out or marketed.

Estimated number of horses on January 1, 1920, was 207,000 head, compared with 230,000 head on January 1, 1919. Average price per head on January 1, $63, compared with $77 last year.

Estimated number of mules on January 1, 1920, was 4,000 head, compared with 4,000 last year. Average price per head $104, compared with $106 last year January 1.

Estimated number of milch cows on January 1, 1920, was 77,000 head, compared with 75,000 head on January 1, 1919, showing an increase of 2,000 head. Average price per head $93, compared with $95 per head last year.

Estimated number of cattle on January 1, 1920, was 788,000 head, as compared with 1,100,000 head (January 1, 1919, revised). Average price per head $62, compared with $61.80 last year.

Estimated number of sheep on January 1, 1920, was 3,200,000 head, compared with 4,000,000 head on January 1, 1919, revised. Average price per head $10.20, compared with $12.30 last year. The estimated number of swine on January 1, 1920, was 63,000, compared with 70,000 head last year. Average price per head $18.40, compared with $21.50 last year on January 1.

Skinning Your Catch.

All the animals trapped in North America are treated in one of two ways—their skins are either "cased" or taken off "open." If taken off open some are preferable fur side out and some pelt side out.

Casing a pelt means that you peel it from the body of the animal intact. Here is the way most experienced trappers say to do it. With a sharp knife cut from the base of the tail down each hind leg to the foot. Also cut the skin loose about the eyes and nose. Then suspend the carcass by the hind legs and with a gentle, slow movement so that you will not tear the pelt, begin pulling downward, until you have peeled the whole pelt from the animal's body. If the tail is valuable it should be skinned also, and the bone removed.

If you have never had experience in casing your catches it would be wise to have some seasoned trapper show you how it is done before you attempt it yourself. It is a task that requires care and skill, but you are repaid by the better prices that well skinned pelts will bring.

The "open" method is used generally on coon, beaver, badger, mountain lion and bear. With a sharp knife slit the pelt down the belly from the jaw to the base of the tail. Also make incisions down the back of the hind legs and the inside of the forelegs.

Then peel the skin off gently, taking special care when you come to the head not to rip or tear it. Never cut the head off. After you have done this remove every ounce of surplus flesh on the pelt.

Next comes the stretching of the skins. Steel stretchers may be procured for this purpose

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When Should Tractor be Bought

EXPERT URGES FARMERS TO PLACE ORDERS NOW.

EARL B. STONE.

Shredding corn with the tractor for power.

RECORDS of retail tractor sales for more than five years past show that the farmers of America buy more tractors in April and September than at any other time in the year. And since these two months mark the opening of the busiest seasons of seed bed preparation, we are forced to conclude that our farmers wait until the very last minute before selecting their tractors.

But this is a practice which sooner or later will cost the majority of tractor owners a whole lot of trouble and delay and it has already brought discredit upon more than one worthy tractor. If our farmers are to get full value from their tractor investments they cannot wait until the season is on before buying.

A tractor, like any other piece of hauling machinery, whether it is mechanical or alive, must be worked in gradually to bring out its full efficiency. No farmer would think of driving his horses at a mid-season pace after months of inactivity in the barn. He knows their limitations and so works easily for only a few hours at first, gradually increasing the load and the hours as sinews harden and their wind improves. This method of building up horse flesh is such common knowledge to the farmer that he forgets or neglects to apply it to his tractor. But when the tractor gives way under the sudden strain of spring work, he refuses to consider himself in any way at fault.

Even the lesson learned from their first automobile experience fails to impress our farmers as applicable to tractors. The auto dealers wisely cautioned them to take it easy at first. Some heeded the caution and became enthusiastic over their first machine, while others "stepped on the gas" right from the start and they got nothing but trouble and expense in return.

How much more this take-it-easy warning should be observed when starting a tractor is evident from the fact that a tractor motor does more than twenty times the work of an automobile engine in traveling the same distance. If it paid to give the automobile a thorough working in, it will pay ten times over to give your tractor the same care and attention.

No farmer will ever get all he is entitled to get from his tractor if he buys it the day or the week before he starts to plow. The tractor will do its level best of course—perhaps it will go through one whole season without a hitch, but he has shortened its life and in the end he will pay dearly for his last-minute purchases.

The time to buy a tractor is a month or two before it will be needed for the hard job of breaking ground and fitting the seed bed. The farmers who are going to buy this spring will save money by making their purchase now. A month or more of easy work will get the new tractor "fit" for the strenuous day when it must sometimes work 24 hours without a stop.

There is no end of odd jobs which the tractor can do before spring work opens up and each day it is used will help to make it more dependable when the heavy work comes along. Most wood lots have some fallen timber which should be snaked to the barn yard and sawed. The tractor will do both jobs and welcome the chance to limber up its gears. Or there is corn to shred, feed to grind, manure to haul, roads to clear of snow and ditches to run.

These odd jobs do two things which insure the successful operation of the tractor in the future. First of all they acquaint the owner with his tractor as nothing but actual use can do. They give him the "feel" of his machine and develop an "ear" for its song of satisfaction or cry of pain. Second, they give the bearings a chance to work and help the valves to seat more snugly. They fit piston rings to cylinder walls more perfectly than the most exact machine can do it and they limber up every gear and pinion much as the first days of easy work take the kinks out of a horse's back and legs.

Once worked in and properly maintained, the tractor is as far ahead of the horse as the Twentieth Century Limited is ahead of the olden stage coach. But it cannot do its best without a chance to limber up. When the farmer buys his tractor a month or more ahead of the busy season and works up to his peak load gradually, he will get the maximum return from his investment. He cannot expect it in any other way.

Saved $275,000 in Crops.

A saving of crops worth $275,323 on 62,205 acres of land was effected in Oneida county, Idaho, by the co-operative poisoning of ground squirrels in the last year, according to a report received by the University of Idaho extension division from County Agricultural Agent R. J. Smith, of Malad. In this campaign, 505 farmers co-operated. Three species of ground squirrels—the Richardson, Piute and Idaho Emsis, had threatened the entire crops of the dry farm sections.

For mixing the poisoned bait, the county purchased, wholesale, 3,000 ounces of strychnine, 48,000 pounds of oats, 300 ounces of saccharine, 300 pounds of starch, 300 pounds of soda, 160 gallons of syrup and 15 gallons of glycerine.

Poisoning of land of non-resident owners was made possible through enforcement of the Idaho rodent control law, which provides that the county may do the poisoning and charge the costs in taxes on the property. In one case several thousand acres of one corporation's holdings were poisoned in this way, at a tax of $400, after the corporation had failed to comply with a request that the work be done voluntarily. Bait was mixed at a central point under direction of the Farm Bureau project committee and the county agent. Community project leaders supervised distribution in their respective sections, selling poison at actual cost.

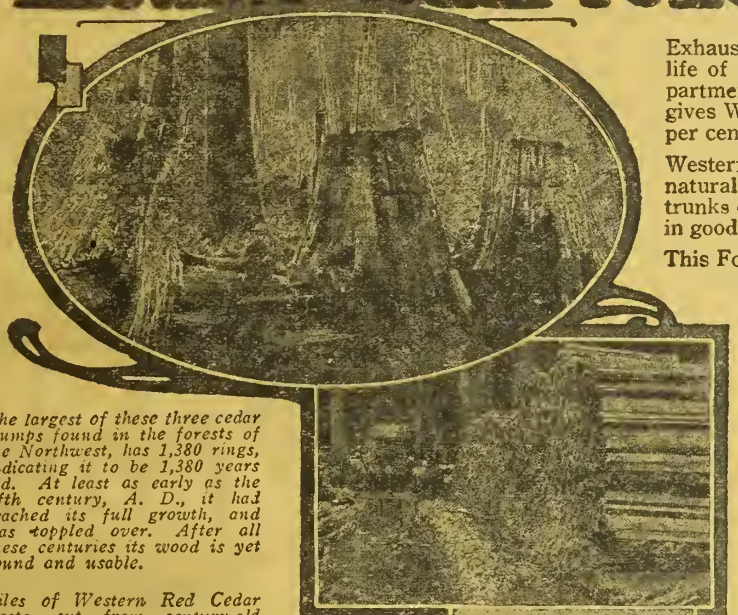
The Cost of a Water System.

One of the common objections to installing a system of running water in the farm home is that of cost, says F. A. Mechel of the University of Missouri College of Agriculture. The average person seems to picture some complex system of pipes and a dollar-and-a-half-an-hour plumber to install the puzzle. A good system is not of necessity the most expensive one on earth. A little pitcher pump at the kitchen sink will bring in the water and save as many steps in a year as will any other. Here are some accurate figures taken from a Missouri woman's report of her pitcher pump installation. Less than fourteen bushels of wheat will pay for the entire outfit.

One pitcher pump	$3.00
One sink	7.00
One sink frame	1.00
Nineteen ft., 1¼ galvanized pipe	3.80
One and one-half feet lead pipe	.35
Two, 1¼-inch elbows	.30
One 1¼-inch coupling	.20
One foot 1¼-inch black pipe	.15
One ¼-inch foot valve	.75
Labor (plumber)	4.25
Drain board	1.00
Personal help	6.00
Total	$27.80

Western Farm Life is worth its weight in gold. Old Putnam is worth the subscription price alone.—Chas. F. Jones, Como, Colo.

Conclusive Evidence That "Lifetime" Cedar Fence Posts LAST



The largest of these three cedar stumps found in the forests of the Northwest, has 1,380 rings, indicating it to be 1,380 years old. At least as early as the fifth century, A. D., it had reached its full growth, and was toppled over. After all these centuries its wood is yet sound and usable.

Piles of Western Red Cedar Posts, cut from century-old trees, as they lie in the woods awaiting inspection and trade-marking with the name "Lifetime."

Exhaustive tests have proven the durability and long life of Western Red Cedar Axe-Split Posts. U. S. Department of Agriculture, Foresty Service, Bulletin 95, gives Western Red Cedar a breaking strength of 81 per cent of white oak.

Western Red Cedar is a slow growing wood. It has the natural resinous oils which withstand decay. Fallen trunks of red cedar trees in Western forests are found in good condition after 600 to 800 years.

This Forestry Bulletin says about Western Red Cedar: "Its long resistance to decay is shown by the fact that some of the fences built nearly half a century ago were doing service until just recently."

Farmers can now get Western Red Cedar Axe-Split Posts of guaranteed first grade. "Lifetime" Posts have the name stamped on every post.

Mr. H. D. Lute of the Obar Ranch, Paxton, Neb., says: *"We have had and built in the last twenty-five years 30 or 40 miles of fence. We have tried oak, white cedar, Western Red Cedar and Southern red cedar. The country here came almost entirely to the Western Red Cedar, as they seemed to stand longer than the others."*

Your lumber merchant now has "Lifetime" Western Red Cedar Posts in stock or can get them for you quickly. Mail us the coupon today and we will send you our booklet, "Pointers on Posts."

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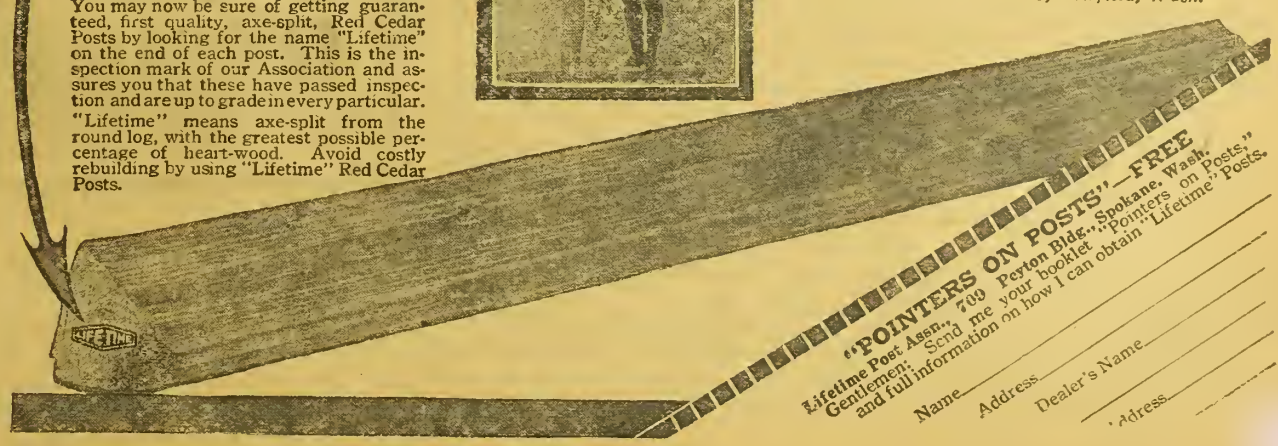
You may now be sure of getting guaranteed, first quality, axe-split, Red Cedar Posts by looking for the name "Lifetime" on the end of each post. This is the inspection mark of our Association and assures you that these have passed inspection and are up to grade in every particular. "Lifetime" means axe-split from the round log, with the greatest possible percentage of heart-wood. Avoid costly rebuilding by using "Lifetime" Red Cedar Posts.

Gentlemen: The Red Cedar Posts (photo at left) were placed in the ground by myself and man more than 18 years ago. The fence is still in good condition, and a large portion of the posts will see many more years of service.

JAMES HAYES, Fairfield, Wash.



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The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

The Housewife.

She rises up at break of day.
And through her tasks she races;
She cooks the meal as best she may
And scrubs the children's faces.
While school books, lunches, ribbons, too—
All need consideration.
And yet the census man insists
She has "No occupation."

When breakfast dishes all are done.
She bakes a pudding, maybe;
She cleans the rooms up one by one.
With one eye watching baby,
The mending pile she then attacks.
By way of variation.
And yet the census man insists
She has "No occupation."

She irons for a little while.
Then presses pants for daddy;
She welcomes with a cheery smile
Returning lass and laddie.
A hearty dinner next she cooks
(No time for relaxation),
And yet the census man insists
She has "No occupation."

For lessons that the children learn
The evening scarce is ample,
To "mother dear" they always turn
For help with each example.
In grammar and geography
She finds her relaxation.
And yet the census man insists
She has "No occupation."

—Elsie Duncan Yale.

The Camel's Only Rival.

The camel still carries enough water for more than one drink and so does the woman who has a well outside, all outside. At the stock show we saw a booth showing the contrast between the exterior and interior water systems and the women who use each of them. One was pulling a bucket of water out of an ancient well. She wore a flappy sunbonnet and an apron which she had not had time to mend by reason of having to use all her extra time to perform the duty which a two-inch pipe can do much better.

Of course the woman at the beautiful sink inside was very trim and neat and was pointing with pride to some small labor saving devices around her sink, such as garbage cans and dish drainers, and saying, "I wouldn't leave the farm for anything!"

The Rebecca at the well was remarking, "This drudgery is killing me, and the price of one of Jim's registered calves would put the water inside!"

All of which is true. It shouldn't take a thoughtful man long to figure that it pays to save his wife's strength for better things, and her good looks for him to be proud of for several years longer. He will point with pride to his very sleek, well-conditioned cattle, as they show his good care. But it doesn't occur to him that a tired out, pale and worn wife may show just as surely his thoughtlessness in securing a few labor saving devices to save her strength. Now then, isn't that an awful slap?—E. D.

When Our Old Duds Aren't Old.

There used to be an old conundrum that is so old I hope most of you have forgotten it about, "When is a hat not a hat," and the answer was, "When it becomes a pretty lady." Now, we can't improve the very simple pun, but we will say that the "becoming" qualities of the hat were very limited. If it had been an old suit, now, it might have been able to become anything—a beautiful dress, or a little boy's suit, or a jumper dress for a girl, or most anything else.

Of course, all the cleverly designed remodeled garments in Colorado couldn't be shown in this Home Economics Extension exhibit at the Stock Show, but there were very good samples of almost every type of made-over garment.

A small boy's suit, for which we have to pay anywhere from ten to twenty-five dollars, takes a good deal of time in the careful cutting and tailoring necessary. The one shown, however, a brown one made from an old suit of very good material, had certainly paid and was every bit as worth while and good looking as one from a fashionable store.

A little girl's dress made from an old one of mother's and trimmed with a bit of bright wool embroidery was another very interesting exhibit. Then there was a woman's dress, the upper part made with an overskirt and panel, and the skirt dropped a little on a yoke, which had come from a worn brown suit. Embroidery in blue and gold wool gave a beautiful trimming.

An old blue and tan sweater which had been dyed at home to a rich seal brown, and a set of furs, muff and stole, from an old seal coat showed some more unusual ways of using our makeover ingenuity. There was underwear of unusually good fit and design made from flour sacks, and then we saw two beautifully hand woven rugs—but those will come in a later article.

The big placard above the whole exhibit said, "Your old clothes are dollars—cash 'em," and several onlookers offered to cash theirs right there. Other signs were calling attention to the necessity for cleaning, pressing and good hanging for even made over clothes. The old broom stick appeared as a good holder for coat hangers in one's coat closet. A number of posters showed just how various garments might be cut from the pieces of other garments, as, for instance, a small boy's suit from a six-gored skirt, etc.

We might go on and on into further detail, but that would not make you see the whole thing. It was a worthwhile exhibit and one which should do its full share toward taking the swagger and the breath out of old "H. C. L."—E. D.

Those Braided Rugs.

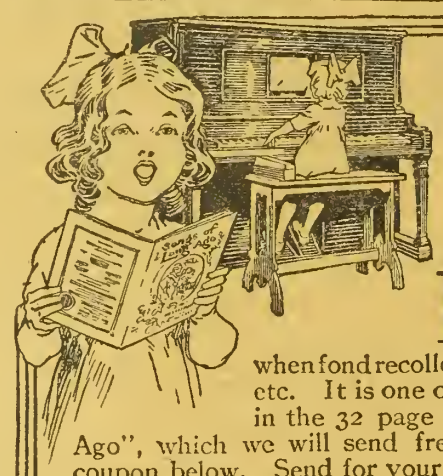
We promised to tell you more about the braided rugs in the "cashing-old-clothes" booth, and we will. Mrs. F. C. Paige of Wigwam had loaned two splendid braided rugs which caused many comments and drew many questions.

Both were made pretty largely of stockings and underwear which had been dyed; that is, the underwear was dyed, but not the stockings. One had a pretty soft rose with the black and the other had a dull blue. The rose and black one was close to three yards long and was a little over a yard wide. It was made in definite stripes of black, rose, rose and black and then black again.

The blue and black one was smaller, about the same width and four and a half to five feet in length. This one had a wide band of mixed colors, yellow, a very light green and red and white. Then came a band of blue, then blue and black, and then the border of black.

Each rug was simply made of three strand braid of strips about an inch wide, braided very tightly and sewed together so carefully that one could not see the stitches. They lay perfectly flat on the floor and were heavy enough that they would not kick up.

The beauty of the rugs lay mostly,



What is she singing?

IT goes like this—"How dear to my heart are the scenes of my childhood, when fond recollection presents them to view" etc. It is one of the 26 popular old ballads in the 32 page song book, "Songs of Long Ago", which we will send free to anyone returning the coupon below. Send for your copy today.

Baldwin

A Name that Stands for Real Worth in
PIANOS AND PLAYER PIANOS

You cannot make a mistake in choosing a Baldwin-made Piano or Player-Piano, because in so doing you are following the example of the world's best musicians of yesterday and today—DePachmann, Bachaus, Sembrich, Henry, Pugno, Scharwenka, Eddie Brown, Tillie Koenen, LaForge, Richard—and hundreds of others. The Baldwin line includes the Baldwin, Ellington, Hamilton and Howard Pianos, and the Manualo, "the player-piano that is all but human". Our local representative will be glad to demonstrate and let you try any of these instruments.

Songs of Long Ago

Dept. B-17.

The Baldwin Piano Company
Dept. B-17.
Cincinnati Chicago St. Louis New York
San Francisco Indianapolis
Denver Louisville Dallas

Send me your free song book "Songs of Long Ago."

Name.....
Street or R. F. D.....
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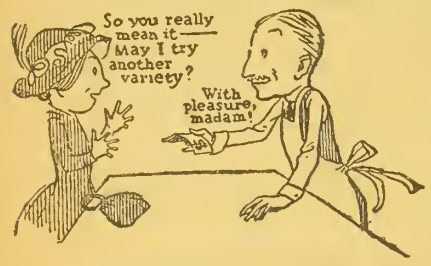
Would you like to have a piano or player-piano?



Money-back on Schilling Tea means: We know you will like the tea.

Try each kind at our expense until you find the one you like best.

There's nothing generous about this; it's business. So please do it. Your grocer pays you the money back; we pay him.

There are four flavors of Schilling Tea—Japan, Ceylon-India, Oolong, English Breakfast. All one quality. In parchmyn-lined moisture-proof packages. At grocers everywhere.

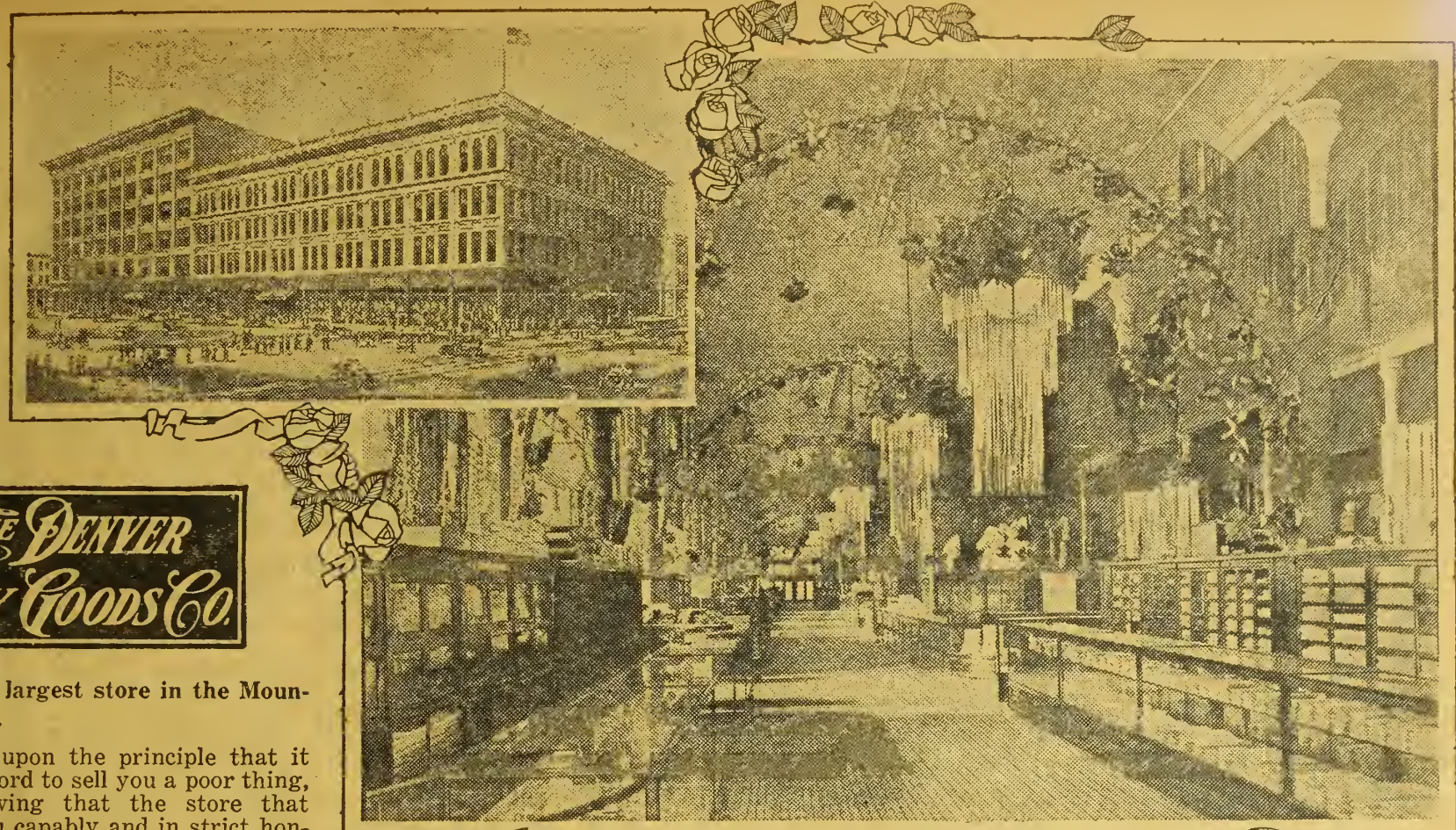
A Schilling & Co San Francisco

ESTABLISHED 1879 Stark JEWELERS

Our Principle

places Quality, Usefulness and Durability before price.

709-711 Sixteenth St., Denver.



THE DENVER DRY GOODS CO.

Much the largest store in the Mountain West.

Operated upon the principle that it cannot afford to sell you a poor thing, well knowing that the store that serves you capably and in strict honesty today may expect to serve you in the future.

Section of The Denver's Main Aisle, 400 Ft. Long, Running directly thru the Great Store from 15th to 16th Sts.

Our Mail Order Service

WE INVITE YOUR PATRONAGE

The remarkable increase in our mail order trade is due to service. By service we mean right prices, prompt response to inquiries, prompt forwarding of samples requested, and prompt shipment of satisfactory merchandise.

of course, in their very splendid design, but the care used in making them gave them the value in use of a much heavier commercially made rug. They were the sort which posessors of fine old colonial houses would envy and desire for the space in front of the fireplace or the long hall. They had the distinctive charm which only a beautifully made home thing can have.—E. D.

A Home Made Dress Form.

Any of you women who have tried fitting yourselves at home usually know you "have a fit" trying it and then aren't satisfied with the fit you do get. And some of the commercial dress forms seem pretty expensive and some of them rather unsatisfactory, so that seems a hard way out.

One woman in Larimer county has solved the problem beautifully. This is a home dress form, called in the bosom of the family "Susy"; and "Susy" has to prove her helpfulness by working most of the time. "She" was loaned to the Home Economics exhibit at the Stock Show and attracted considerable attention.

"Susy" got her start at an incarnation by having a neighborhood dressmaker make a tight fitted lining which included bodily territory from and including the owner's neck to twelve inches below her waist. This was the "up and down" part of the casing. A half-inch board, sawed to fit, forms the lower part of the body or casing of the dress form. A round piece finishes the top of the neck, and the arm holes are also finished with a round piece of material to hold in the packing.

A piece of "2x2" braced at the bottom like a Christmas tree forms the standard. This standard really extends up inside the body part and has a cross piece which goes from one arm hole to another. A square hole is sawed in the half-inch board at the lower part of the form to let the standard pass through. The height of the form is that of the owner, from her neck to her feet.

You will be interested in the material of which the form is made, as several materials were tried out before a satisfactory one was found. Muslins, galateas and drillings all stretched when they were packed. Ticking or denim will not stretch. This "Susy" is embodied in good strong denim, and her stuffing is ground cork with a little sawdust. The cork came from a fruit store and was the packing for a barrel of grapes. All sawdust used for packing seems to settle and leave the form misshapen after a little use. Paper and cotton cannot be gotten in evenly. The packing is the fine art and requires much patience.

We might add that some of the home demonstration agents in this and other states are holding classes to make these dress forms. And think what a joy it would be to have a replica of yourself who never got tired standing to "try on" things!—E. D.

A Touch of Spring Styles.

Someone has remarked to me recently that if the showing up of spring styles is moved still further back on the calendar we'll pretty soon get them back to the season in which they really belong. But anyway it is fun to begin speculating on how the summer wardrobe might look even as early as February, and it really couldn't be much earlier without being last year.

Most of the new georgette and dress up blouses of silk or voile have short sleeves, as you have guessed, and a great many are collarless, with only a bias binding about the neck. They open back or front, or slip on over the head with something like a middy opening in front. The designs on the georgette blouses are all big and sprawly, sometimes printed, sometimes machine embroidered in a new tufted sort of embroidery and sometimes hand painted. People usually tire of that sort of design and these may be only a springtime fancy.

There are to offset these short sleeves any number of tailored blouses, and these seem to be made of any sort of material, voile, crepe-de-chine, tub satin, batiste, linen finishes, pongee or net. They have high collars and long sleeves, and either ties or frills are worn at the neck.

Then there are wool jerseys, long blouses or smocks, which will be very good in the spring. By the way, many of the other blouses have finished belts or are long and to be worn outside. There is one great beauty in these. Many of us have white skirts which are good looking after several washings, except that they have sort of lost the new trim look at the waistline which they originally had. If your blouse covers up this ambitionless belt, who's to know but what the rest of the skirt is comparatively new?

The hats as yet are small, and there are many toques. They are simply trimmed, and very "flatly and frankly" as they used to say in "Old Chester Tales." Much of the trimming is embroidery, and most of the embroidery on hats and blouses—perhaps because we've knitted until we haven't anything else to knit and there is still yarn left—is wool.

That long basting stitch of many colors goes round the necks of blouses, around the brims of hats, outlines the top and bottom of the crowns. It goes round and round to make circles and up and down and across to make squares and triangles, and in and cut to form beautiful little conventionalized designs. It is easy to do, but needs careful stitching to keep it from drawing, and it is as soft and lovely as anyone could wish. That bit of wool will help many of us to wear a last year's hat or fix the edge of a georgette collar to be wearable for a time longer.—E. D.

Quick Delivery on Patterns.

Our women readers will be interested in the announcement of a new pattern service with quicker delivery. Beginning with the present pattern list which will be found on the next page, all orders will be mailed from Chicago, instead of from New York. This means a saving of four or five days in delivery of orders, which is an important matter for the women who have planned their sewing for a certain time and naturally want garments made up in time for the opening of the season they are intended for.

Our new service is known as The Peerless Fashion Service and is the same as that used by most of the leading women's magazines. It may therefore be depended on to give our readers the latest fahions, along with the practical things that are always in style.

About one order in every ten received by us for patterns fails to specify size, or is faulty in giving the address of the reader, or fails to include the proper amount of stamps, or money. Please be careful about these details. They are all important if you wish patterns to reach you promptly.

Remember the new price—12 cents. This supersedes the 15 cent price which has been charged by us during the last year. We are glad to be able to make the reduction. There is absolutely no profit in the patterns. In fact, the correspondence necessary in giving our readers this service often causes us some loss. Care in ordering will avoid this. We want you to have the best of service at a minimum price, and that means exact cost to us. We hope the new patterns will please you. Orders on the old lists which have appeared up to and including the issue of February 1st, will be filled only 30 days longer, up to March 15 at the latest.

Have You Poultry and Eggs to Sell?

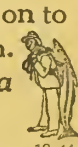
You can find buyers from among our 50,000 readers for all the poultry and eggs that you have to sell. If you will send in a little "ad" for the "Farmers and Stockmens Exchange." A little "ad" in this department will do the business. Try it.

A Source of Strength

Science reveals that cod-liver oil is a fruitful source of vitamins and that its use helps a child grow normally.

Scott's Emulsion

made of the richest and purest *Norwegian* cod-liver oil, never fails in its mission to nourish and strengthen. *Let the children have a plenitude of Scott's.*



Scott & Bowne, Bloomfield, N. J. 19-44

Try Ki-moids for Indigestion

Dyed Her Faded Skirt, Also a Coat

"Diamond Dyes" Make Shabby Apparel Just Like New—So Easy!

Don't worry about perfect results. Use "Diamond Dyes," guaranteed to give a new, rich, fadeless color to any fabric, whether wool, silk, linen, cotton or mixed goods,—dresses, blouses, stockings, skirts, children's coats, draperies,—everything!

A Direction Book is in package.

To match any material, have dealer show you "*Diamond Dye*" Color Card.

1000 Sixteenth Street Denver

JOS. I. SCHWARTZ 1000 ART GYPSY JEWELER DENVER COLO

Diamonds and Good Jewelry

We Specialize On Watches and Watch Repairing

PHOTO SUPPLY HOUSE

KODAKS—FILMS and Professional Photo Supplies

FORD'S, 1029 16th Street Denver

Develops Films. Print Pictures. Mail Orders Solicited. Catalog Free on Request.

New Fashion Service.

All patterns Now 12 cents Each: Address WESTERN FARM LIFE, Pattern Department, 1518 Court Place, Denver, Colo.

Please note change in price, a reduction from 15 to 12 cents which becomes effective on patterns ordered from this and subsequent lists. We also wish to announce that we have been able to make arrangements for mailing patterns from Chicago, instead of from New York. This means a saving of several days' time in filling orders. Please be sure to specify size, and to give your complete postoffice address.

No. 9574. Ladies' Waist. Cut in sizes 36 to 44 inches bust measure. Reveres of satin join the collar and continue to the waist.

No. 9542. Ladies' Waist. Cut in sizes 36 to 44 inches bust measure. A waist of tub silk, has an unusual closing and collar and cuffs of washable satin.

No. 9000. Ladies Dress. Cut in sizes 36 to 44 inches bust measure. The surplice fronts button over a gathered skirt with a panel front.

No. 9538. Ladies' Dress. Cut in sizes 36 to 44 inches bust measure. The skirt is cleverly cut to form wide pockets and back and front waist-panels at the same time.

No. 9499. Mens and Boys' Mackinaw. Cut in sizes 4 to 16 years and 36 to 46 inches. The lower part of the coat is joined to a deep yoke.

No. 9461. Childs' Rompers. Cut in sizes 1, 2 and 4 years. A kimono yoke joins the cunning bloomers that stand out in a perky way at each side.

No. 9539. Ladies' Skirt. Cut in sizes 26 to 34 inches waist measure. An inverted plait at each side of the front introduces a panel effect.

No. 9566. Ladies' Skirt. Cut in sizes 26 to 32 inches waist measure. Although the effect is that of a gored skirt, this style is, however, in one piece with darts at the front to take up the fullness.

Mesa County Clubs.

Mesa county, Colorado, has a number of women's clubs in rural districts which are more than live wires; they're wires connected up and working for all the good things they can find. At Fruitvale, in spite of horrible roads, they have had a most interesting five-number lecture course and have signed up for a six-number course for next year. They say the consolidated school is partly responsible for this community interest.

The women's clubs of the country and Grand Junction have established a rest room which has been a pattern and an inspiration for many other communities all over the country. The county and city have appropriated funds for the rental. A lunch room which began as a soup kitchen takes care of the matron's salary, the upkeep, purchase of new furniture and other items. The county women say they cannot get along without it, for it is not only a rest room where they can wait for "John" to finish his business, and a lunch room where they can get something good to eat very reasonably, but there are beds there if one happens to become ill in town where one can really rest up. This room is a monument to a thoughtful and wonderfully enterprising number of country and town women's clubs.

Farmer's Wife—No Occupation.

"Farmer's wife. No occupation," is the way census enumerators are writing it thousands of times a day, while counting 60 million farm folk in the land. Likewise "Housewife. No occupation," while counting the rest of us.

The men and women who have "real jobs" are classified according to their calling and their cash value. This latter may range from the $1,200 a year clerk to the $25,000 manager, from the $1,000 stenographer to the $5,000 head of the ladies' cloak and suit department. But the farmer's wife has no cash value!

She is not rated, yet her cash value is of itself large enough to give her an A-1 rating anywhere. She works from daylight till after dark without thought of pay. She cooks, sews, washes, irons, sweeps, scrubs, helps to plant and harvest, cans and preserves, cares for her own and her neighbors' sick, and never has time for rest or recreation.

"Yet no one has ever thought of her in terms of cash," writes Mrs. Phoebe V. Warner in a recent number of the Banker-Farmer. "She has no salary, no definite income, no fixed allowance by either written or unwritten law. She works from the day she marries till the day she dies, often without realizing in dollars and cents a single dream of her life.

Mrs. Warner, who seems to be a sane thinker, views it this way:

1. If a reasonable commercial value were placed on the work of the women and children on the farm it would equal in dollars and cents the total real estate values of our nation.
2. If the value of the work of the women and children is equal to the value of the farm, not one man in ten could ever pay for a farm if he had to pay for the work of his wife and children.
3. Few women are strong enough to take care of their families and do enough extra to pay for a farm if the husband is a no-account man.
4. Two of the greatest needs of rural women and children are home economics in our rural schools and cash markets for those farm products offered for sale by women and children.

She says if the bankers would cooperate with the farmers' wives and daughters to create a better marketing system for their farm products, so that they, too, might have their own bank accounts, the bank deposits of the nation would increase millions of dollars. And almost every dollar of this money would go back, through the banks, into the farm homes, and farm women would be healthier and happier, and men and children on the farm would be healthier and happier also.—Philadelphia North American.

Pillars of Fire Up to Date.

The pillar of fire that Moses used for guide in the wilderness may have been a little larger and perhaps a little more awe-inspiring to the Israelites; but it couldn't have been any more impressive than one we saw at the Stock show. This one wasn't really on fire, but it was a great light unto our souls.

A big pyramid of shelves had been built in the center of the room which the boys' and girls' clubs had for their exhibits. These shelves were filled with the most beautiful jars of canned things which the club people had sent. The shelves and background had all been lined with paper and then electric lamps placed back of the paper. The pyramid really looked like a great lighted lamp with the jars as the design on the shade. No designer of parchment shades ever had more beautiful figures.

You want to know how many jars there were, but I'm going to leave you to guess. The pyramid, of course, had four sides, each one four feet long at the base, and it was eight feet high. I don't know just how many jars there were, but I can very easily find out, and if you really want to guess you may. At any rate you are to imagine how beautiful our modern pillar of fire was, and if you are a boy or girl interested in gardening, plan on being in a canning club next year and have some of your jars part of a bigger pyramid next year.—E. D.

Successful Breeders Are Successful Salesmen

As a general thing livestock breeders probably do not think of themselves as salesmen. The term usually brings with it a mental picture of what we used to know as a "drummer," a knight-of-the-grip, who spends a good deal of his time on railroad trains and who sells, maybe, baking powder, or tea and coffee, or hardware.

Nevertheless the successful breeder of livestock is NECESSARILY a successful salesman. It is one thing to raise purebred cattle; it's another to dispose of them profitably. This is where the salesmanship element comes in.

Breeders are relieved of the necessity of jumping around the country on trains, however. They have a simpler, far cheaper and in the end more effective way of marketing their stock and that is by ADVERTISING.

The wise breeder lets the farm paper do his traveling for him. He realizes it would take him a year or more to call on say 5,000 "prospects" personally, and he would have to devote his entire time to the job at that. With his advertisement in a publication such as Western Farm Life, however, the breeder calls on 50,000 prospects EVERY TWO WEEKS, and he doesn't have to stir a foot off the ranch.

He is a good salesman when he appeals to the right class of people, thru the right kind of a publication and with the right kind of "copy." Also he is a good manager when he selects the medium that gives him the GREATEST RETURNS ON THE MONEY EXPENDED.

A good many successful breeders in this part of the west have chosen Western Farm Life as the publication that possesses all these necessary qualifications. Their judgment is backed up by ACTUAL RESULTS, in dollars and cents, which after all is the only thing that counts.

You can carry a breeders' card in Western Farm Life, for a solid year—24 issues—for only $54, or $4.50 per month. This is for the one inch cards. A larger card, occupying two inches single column and affording sufficient space for an illustration, will cost you but $102 per year, or $8.50 per month.

In what other way can you reach 50,000 farm and ranch homes in Colorado and contiguous territory, twice each month, for anything like the money Think it over and then send in your copy. We'll write and arrange the card for you if you wish.

ADDRESS BREEDERS' DEPT.

Western Farm Life

1518 Court Place
DENVER, COLORADO

Denver The Live Stock Market

Denver is the Highest Market **Most of the Time** and the Best Market **All the Time** for Western Cattle and Sheep.

Time and again cattle have sold on the Denver market for higher prices than the same cattle would bring same days at the Missouri River.

Why don't you market your cattle and sheep at Denver, where they will bring you greatest net returns?

Poultry and Eggs for Sale.

In the "Farmers and Stockmens Exchange" columns in this issue of Western Farm Life will be found advertised poultry stock and eggs of almost every strain and variety. This department is well to the back of the magazine. Look it up. You will find what you want at the right price.

According to a reliable survey made several years ago the robin and the English sparrow are the most abundant of all birds.

Colorado Cooking Club Girls Giving a Bread Baking Demonstration at the National Western Stock Show.

Juvenile Club Awards.

Prizes to the value of over $700 were awarded to members of the Colorado Boys and Girls clubs at the Stock show for exhibits in canning, cooking, sewing, baking, pig raising and other lines of activity. More than 100 boys and girls from various parts of the state were here to participate in the big show and to give demonstrations for the benefit of audiences in the college exhibit. This work is under the direction of Miss Maude Sheridan, State club leader, and Miss Eunice Kennedy, Assistant State leader, who prepared an exhibit which attracted much attention. Mention of the pig club awards is made in a separate article. Following is a list of the awards in the corn clubs, potato clubs, baking and sewing:

Corn.

Grand champion—Stanley Mitchell.

Minnesota 13, 10-ear exhibit—1st, Glenn Leggett 2nd, Leslie Madison; 3rd, Bernard Buster; 4th, William Ambrose; 5th, Horace Selby; 6th, Rudolph Brand; 7th, Charles Sanger; 8th, Lester Baird; 9th, David Firm; 10th, Roy Boese.

Iowa Silver Mine, 10-ear exhibit—1st, Stanley Mitchell; 2nd, Guy Plumb.

Swadley, 10-ear exhibit—1st, Oscar Mennenga.

Crates—1st, Stanley Mitchell; 2nd, Glenn Leggett; 3rd, Bernard Buster; 4th, William Ambrose; 5th, Rudolph Brand.

Sewing.

First year sewing—1st, Eva Shively; 2nd, Crystal Ellis; 3rd Helen Fulton.

Second year sewing—1st, Mildred Winfrey; 2nd, Mary Jamison; 3rd, Maggie Young.

3rd year sewing—1st, Ida Boese; 2nd, Elizabeth Buckley; 3rd, Patty Jamison.

Remodeled garments—1st, Eva Shively.

Canning.

Club canning, the greatest average number of jars per member—Fort Morgan Canning club.

Best 10-jar exhibit—1st, Elaine Hendricks; 2nd, Amenta Ambrose; 3rd, Mabel Hixson; 4th, Della Boger; 5th, Clyda Bartels.

Individual member canning greatest number of jars—1st, Amenta Ambrose; 2nd, Elizabeth Bewsher; 3rd, Bertie Trumbo.

Best jar of beans—Clyda Bartels.
Best jar of peas—Amenta Ambrose.
Best jar of corn—Alice O'Brien.
Best jar of beets—Bertha Boger.
Best jar of greens—Bertha Boger.
Best jar of pork—Bertha Boger.
Best jar of beef—Alice O'Brien.
Best jar of chicken—Elizabeth Bewsher.
Best jar of fish—Lela Buckley.
Best jar of mutton—Elizabeth Bewsher.
Best jar of wild game—Alice Gardner.
Best jar of peaches—Marguerite Ahern.
Best jar of pears—Alice O'Brien.
Best jar of plums—Helen Fuller.
Best jar of berries—Mildred Smith.
Best jar of rhubarb—Gertrude Law.
Best jar of cherries—Alice O'Brien.
Best jar of cucumbers—Elizabeth Bewsher.
Best jar of relish—Viviene Worley.
Jelly—1st, Alice Gardner; 2nd, Thelma Sutley.
Jam—1st, Thelma Sutley.

Baking.

1st, Orion Broadhag; 2nd, Rebecca N. Moss; 3rd, Thelma Hamilton; 4th, Margaret Hart; 5th Mary Frances Broadhag; 6th, Ruth Clark; 7th, Betty Hawthorne; 8th, Isabelle Linton; 9th, Marjorie Moedel; 10th, Blanche White.

Potatoes.

Seed potatoes—1st. Merlin Stewart, Saguache county, Russets; 2nd. Bernice Smith, Saguache county, Russets; 3rd, Bernice Smith, Saguache county, Brown Beauties.

Market potatoes—1st, Merlin Stewart, Saguache county; 2nd, John Moore, Saguache county; 3rd, Clifford Hodgin, El Paso county.

Sauer's Cows Do Well.

W. C. Sauer & Son, dairy farmers and breeders of registered Holsteins at Fort Lupton, Colo., are making a good showing with their herd in the Johnstown Testing association, as is evidenced by the records that follow of nine cows which, in January, made over 50 pounds of butterfat each:

Verda, aged 3 years, 2,110 lbs. milk; 3.4 per cent fat; 71.8 lbs. butterfat.

Korndyke, aged 6 years, 2,030 lbs. milk; 3.5 per cent fat; 71.1 lbs. butterfat.

De Kol, 5 years, 1,430 lbs. milk; 4.7 per cent fat; 67 lbs. butterfat.

Parthenia, 5 years, 1,656 lbs. milk; 3.7 per cent fat; 61.2 lbs. butterfat.

Aaggie, 5 years, 1,810 lbs. milk; 3.4 per cent fat; 61.5 lbs. butterfat.

Crewsdale, 4 years, 2,065 lbs. milk; 3 per cent fat; 61.8 lbs. butterfat.

Mechthilde, 4 years, 1,762 lbs. milk; 3.3 per cent fat; 58.2 lbs. butterfat.

Spofford, 3 years, 1,690 lbs. milk; 3.4 per cent fat; 57.5 lbs. butterfat.

Jenny, 12 years, 1,430 lbs. milk; 3.8 per cent fat; 54.3 lbs. butterfat.

Progress of Federal Loans.

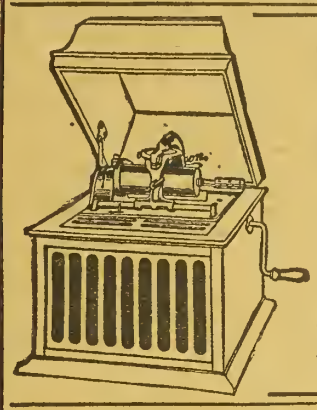
On January 1, 1920, there were operating in the United States 3,923 Farm Loan associations. The total mortgage loans made by the Federal Land banks through these associations to 111,131 farmer borrowers as of that date amounted to $296,386,496. During December 7,484 applications were received asking for $28,913,802. During the same period 6,435 loans were approved, amounting to $21,411,365.

The grand total, as above, of loans made is distributed within the Federal Land Bank districts as follows:

St. Paul	$39,834,900
Spokane	39,270,420
Omaha	37,942,490
Houston	33,647,906
Wichita	25,333,600
St. Louis	23,223,110
Louisville	21,317,700
New Orleans	20,563,530
Columbia	16,030,495
Berkeley	15,713,300
Baltimore	11,959,400
Springfield	11,549,645

Up to January 1, 1920, interest and amortization payments due by borrowers to the banks amounted to $16,825,073.07. Of this amount all but $233,904.07, or 1.4 per cent had been paid, and of this sum $115,499.71 represents instalments which had only become due during the month.

It costs 4 cents per acre, labor included, to treat wheat or oats for the control of smut. Ten per cent smut in a field will mean a loss of from $3 to $5 an acre. Many fields in Colorado last year, the seed for which had not been treated, showed more than 20 per cent smut. Thus an investment of 4 cents per acre yields returns of from $3 to $10 per acre. Does it pay to treat your seed grain?



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SAVE $300 to $1000

Avoid Lumber Shortage

Lumber shortage—a virtual famine of lumber—exists in many parts of the country. Reports indicate it is impossible even now to get material for certain needs. Stocks were never so low as they are now. The demand was never as great as it is now. THIS MEANS STILL HIGHER LUMER PRICES. It means that prices will go upward rapidly—that it will possibly take $150 in six months or a year to buy $100 worth of lumber at present prices.

Complete Material for Immediate Shipment.

Aladdin taps the four greatest forests of the United States. Each one has sufficient standing timber to take care of the needs of the country for many years. The probable lumber famine predicted in all parts of the country will not affect the Aladdin Co.

Every Aladdin house ordered in 1920 will be shipped quickly and completely. Sufficient lath and plaster for lining the interior of the home. Nails in necessary sizes and quantities. Beautiful grain, perfect quality interior trim. Doors of high quality material and excellent workmanship Every item of the complete home will be promptly shipped to every Aladdin purchaser in 1920, regardless of shortages of lumber and other building materials in the general market.

National Home Building Service

Shipments of Aladdin Readi-cut Homes are made from the four greatest timber-producing sections of the United States From the Atlantic to the Pacific—from Canada to the Gulf—Aladdin can serve you wherever you live. Aladdin houses are manufactured and shipped direct from the Aladdin Company's own mills in Michigan, Mississippi, North Carolina, and Oregon. Aladdin houses come to you in a straight line from the nearest timber region. Complete Sales and Business Offices are maintained in connection with each mill. Fully 24 hours' time is saved in your mail reaching our offices.

20 Feet of Lumber from a 16-Foot Board.

The Aladdin System of Homebuilding has been practicing for 14 years the principle the world has only learned during the war—the elimination of waste of lumber and labor. The Aladdin Book explains this system thoroughly, shows how 20 feet of lumber is cut from a 16-foot board The great Aladdin Organization, composed of experts in every branch of homebuilding, stands ready to help you build your home at a saving. Put this group of experts to work on your problem

Send for 100 Page Book "Aladdin Homes."

The Aladdin Book of Homes has a message for you. Amongst its pages, profusely illustrated in colors, leading home designs are represented to you. Aladdin houses are cut-to-fit as follows: Lumber, millwork, flooring, outside and inside finish, doors, windows, shingles, lath and plaster, hardware, locks, nails, paints, varnishes. The material is shipped to you in a sealed box-car, complete, ready to erect. Safe arrival of the complete material in perfect condition is guaranteed. Send today for a copy of the book, "Aladdin Homes" No. 1880.

The Aladdin Company
PORTLAND, OREGON
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Wonderful Power Built Into This Light Tractor
For All Kinds of Field and Belt Work

HERE is a lightweight tractor with a big four-cylinder 5 x 6 motor which gives you a substantial margin of reserve power for pulling three plows easily through the toughest kind of soil. The *Allwork* also furnishes sufficient belt power for a 24-in. separator, 16-in. ensilage cutter, etc.

Guaranteed to Burn Kerosene Successfully

This reliable tractor is a safe investment which will pay you big returns, and its excellent past performance insures satisfactory service and long life. During the six years the *Allwork* Tractor has been in actual use on thousands of farms in all parts of the country, it has retained the same sturdy design, while numerous improvements and refinements have been added from time to time, most of them being prompted by the farmers using this tractor.

ELECTRIC WHEEL CO.
Box 72A Quincy, Illinois

Profitable Farm Poultry

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, WESTERN FARM LIFE, Denver, Colorado.

The Breeding Flock.

To produce high layers only the best individual producers should be used as breeders. This suggests the necessity for having a special breeding flock On farms where eggs for setting are saved from the entire flock, selection is usually based only on the size and shape of the eggs. With this system the breeder stands a good chance of setting many eggs from the very lowest producers. Even the poorest hens lay fairly well during the hatching season and their eggs are usually large and smooth. This method of mass selection of setting eggs is in the same class as the crib selection of seed corn and will bring just as poor results. The first step in improving the egg production is the establishment of a special breeding flock.

No special fencing is necessary to handle the flock. Free range gives ideal conditions for breeding fowls. A pen is a great detriment to the efficiency of the breeding flock and is not at all needed on the farm. Close confinement reduces the vitality of the stock and results in poor hatches and weak chicks.

Where separate houses are available for the breeding flock and the commercial flock, free range can be given the birds in each group. If feed is kept constantly available in the mash hoppers in each house the birds will return to the proper house to lay so that the eggs can be kept separate without any attention to yards. Of course, males should be supplied only for the breeding flock, and by keeping these birds in the house until eight or nine o'clock in the morning, satisfactory mating will be insured. Some mating may occur on the range between the hens in the commercial flock and the males from the breeding flock, but this does no special harm. On farms where there is only one poultry house, a partition can be put in to keep the two flocks separate. If it seems undesirable to allow both flocks to range at the same time, alternate the range by letting the breeders run at large one day, and the commercial layers the next. During the cool weather of the breeding season this system works satisfactorily.—T. S Townsley, Missouri College of Agriculture.

Four Hundred Pullets
Lay 320 Eggs in One Day

Some old wise man said, "Experience is the best teacher." Maybe so, but experience, your own, is sometimes very costly and hurts a lot. But the experience of the other fellow, if we are sensible enough to take advantage of it, is usually cheap enough and often valuable.

Many times during the past few years, when driving over the road from Fort Collins to Denver, I have been attracted by a flock of White Leghorns on a farm just south of Longmont. A farm flock of Leghorns is not an unusual sight in Colorado, but this particular flock was interesting because of several things. It belongs to a regular farm where alfalfa, beets and grains are the principal crops, the poultry only a side issue; the flock is three or four times the size of the usual farm flock; the youngsters were always uniform in size, healthy and snappy; roosters were absent after the frying age; the flock, buildings, yards, fences and everything showed that more than the customary farm care was given. So for a long time I had promised myself a visit to this place for the purpose of getting for our readers some first-hand information and experience, as to "lots of poultry on the farm."

Recently I had the privilege of making this visit. The owner of the farm is Frank Wadsworth, but needless to say the boss of the poultry business is Mrs. Wadsworth. Before telling what we learned that day, we feel safe in assuring our readers of a most cordial welcome at this pleasant home, if they feel like stopping to inspect a real up-to-date farm poultry plant.

Mrs. Wadsworth buys baby chicks, does not have time to do the hatching, does not believe it pays her, and is perfectly satisfied with the plan.

She buys her chicks in California. They are shipped the first Monday in April and arrive at Longmont three days later. The chicks are fine and strong, and out of a shipment of seven hundred in 1919 only sixteen died before arrival. Once they are placed in the brooder the loss is comparatively small. A Simplex oil brooder is used. The brooder house is 14x14 feet, and one brooder accommodates all the chicks.

For two days the chicks are confined to this space; then they are admitted to another room, 10x12. After a few days more they are given permission to play outdoors. By this time they know where Mother Heat is and never fail to find their way back.

The cockerels are sold at ten weeks, weighing about one and a half pounds. Last spring two hundred and forty-one were sold in a lump. Generally there are more pullets than cockerels and this year Mrs. Wadsworth has three hundred and twenty fine pullets from the seven hundred chicks bought. The first egg laid in 1919 was August 19. In September quite a few pullets are laying; by November 15 the yield is almost 50 per cent.

The maximum number of eggs gathered in the spring of 1918 from four hundred pullets in any one day was three hundred and twenty.

The average number laid in a year is about one hundred and fifty. In March, 1918 four hundred hens laid 8,955 eggs. In April, 8,921; in May, 7,512.

Mrs. Wadsworth had her pullets Hoganized last fall. Out of three hundred, ten were discarded as being no good; one hundred and fifteen were adjudged to produce two hundred and twenty eggs; ninety-five were good for one hundred and ninety eggs. You will notice that the average yield heretofore has been about one hundred and fifty eggs, so this year's pullets will either prove to be better than their predecessors, or the judge is liberal in his score. I am not permitted to give the net returns in actual cash, but Mrs. Wadsworth is willing to state that on any farm, if right business methods are followed, a hen is good for more (and I am sure she said "considerable more") than $2 per year above her feed cost.

Very briefly, you have here what we learned from the Wadsworth flock of White Leghorns. There is material here for a good deal of thought and we invite you to review a few points.

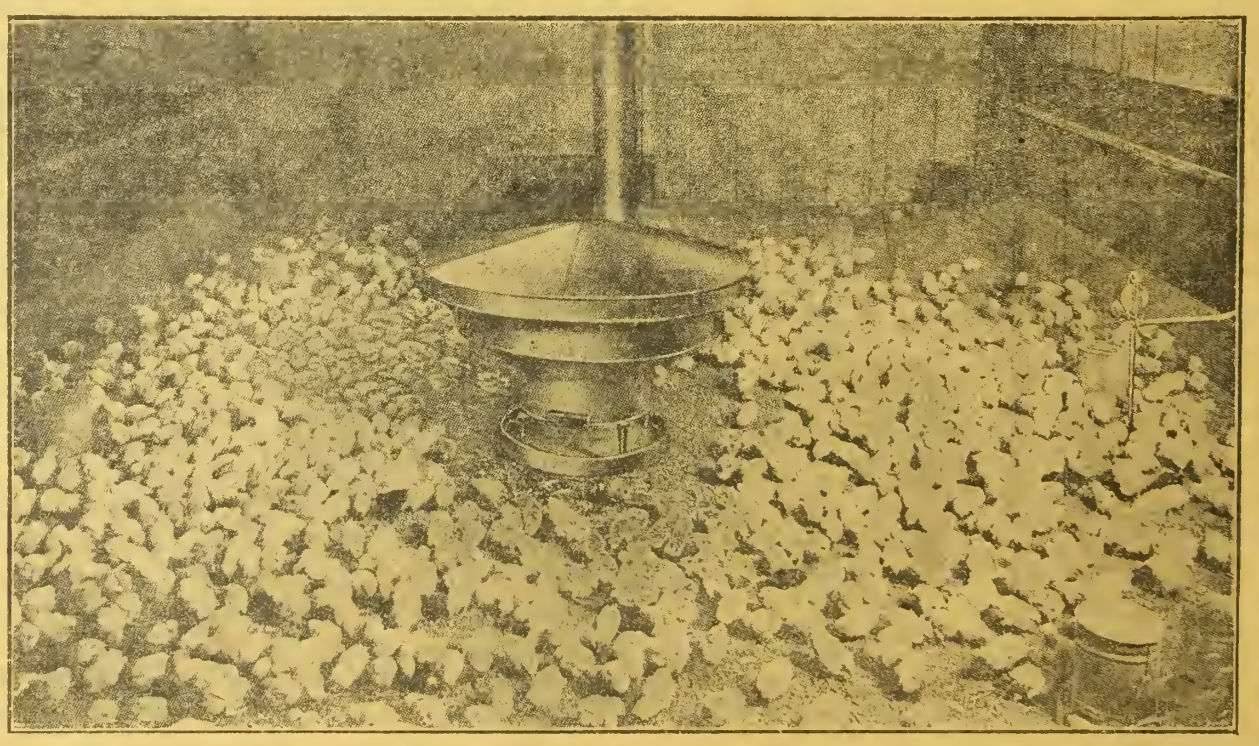
First—Compare the usual practice of setting two or three hens, more or less, at intervals of a few days, beginning in March and ending when "we have enough chickens," with Mrs. Wadsworth's plan of getting the whole season's chicks at once, and just when they are wanted. No wonder we swear off on the whole business every year. A string of boxes and coops and barrels scattered all over fourteen acres; setting hens and mother hens leaving the nest, breaking eggs, fighting, killing the chicks or losing them in the wet hay; isn't a woman who can stand three months of this worthy of a better fate?

One batch of chicks; one brood; a nice warm room in which to care for the whole bunch; the whole season's chicks of one age and size; doesn't it seem that poultry on the farm may mean more pleasure and profit and less drudgery?

Buys in California; What's the matter with our Colorado hatcheries? Are they not able to fill orders? Or are their chicks inferior? Or is the price the reason?

Mrs. Wadsworth orders more chicks for her neighbors than for herself, so the business is worth going after. I am sure the prices paid will surprise you as they did me: $11.40 per hundred, laid down in Longmont, express and war tax paid. Does it pay to bother with hatching?

We may accept Mrs. Wadsworth's statements as conservative; so we can figure on at least $2 per hen profit. Four hundred hens on the farm: $800 profit; less worry and fuss and hard work than the seventy-five now kept make for us! It's worth thinking about.—W. E. Vaplon.



Seven hundred White Leghorn Baby Chicks around a Simplex brooder stove in Mrs. Frank Wadsworth's brooder house near Longmont, Colo. These chicks were hatched at Petaluma, Calif., on a Monday morning, shipped the same afternoon and arrived at Longmont the following Thursday with only a loss of six. (Illustration by Courtesy of Through the Leaves.)

THOUGHTS and THINGS

The business of living, when boiled down to its clearest essence and all the froth skimmed off, is just a matter of thinking.

Each of us is continually thinking ideas of our own and swapping them for the ideas of others. If there is a famine of outside ideas we shrivel up ourselves. Children with 'nobody to play with" are unhappy and unmanageable.

From thinking with our heads to doing with our hands is but a little step and then our thoughts become things.

It is because men of America are so unfettered in their thinking and doing that this country is such a fine place to live in. It is also because these thoughts are freely radiated and spread broadcast, in the distribution of manufactured things and in the distribution of the facts about them (advertising), that this country is such a fine place to live in.

The originator if an idea is not much better off than before he originated it till he gets some one else to absorb it and enjoy it and benefit by it.

The man or woman surrounded by better thoughts and things but who pays not the slightest attention to them is not much better off than the one with "nobody to play with."

Advertisements are thoughts—telling you about the ideas that other men and women have thought out for your happiness. Read the ads. They are the voices from hundreds of thousands of looms, shops, foundries, studios, laboratories, where millions of minds are turning pleasant thoughts into worth while things for your comfort.

SMOKE YOUR MEAT THE "WRIGHT" WAY

Thousands of Farmers are Using Wright's Condensed Smoke (made from seasoned *Hickory Wood*). A small brush, thirty minutes and a $1.00 bottle **Wright's Smoke**, smokes a barrel of meat. *Smokes it thoroughly and gives the meat a delicious flavor.* No fooling with fires. No danger of meat spoiling. No drying out or shrinkage. Easier, Cheaper, Quicker and better than using a smoke house.

Curing Meat Before Smoking is very important. ***Wright's HAM PICKLE*** is a scientifically prepared sugar cure that gives perfect results. A $1 jar and 27 pounds of salt cures a barrel of finely flavored hams and bacon.

Wright's FARM BUTCHERING SET (Nine regular butchers' tools, including saw and cleaver) should be on every farm. We buy in carload lots and **Re-sell at Cost—$3.95.** Send for instructive booklet: *"The New Way of Smoking Meat."*

All Wright Products are Guaranteed. Sold by All Drug and General Stores.

E. H. WRIGHT CO., Ltd., Established 1895 **815 Broadway Kansas City, Mo.**

Pasture for Poultry.

B. W. FAIRBANKS.

The following remarks may seem out of season for when the thermometer is hugging the lower regions, a subject like summer pasture for poultry is not naturally suggested. It is hoped that the winter problems have been met successfully, and now is the opportune time to consider some of the coming spring and summer problems.

During these winter months, successful breeders and producers have been keeping their egg production up by the supply of a generous amount of green and succulent feeds. They claim that such a practice is of supreme importance, and have a large list of reasons for their practice. The tendency quite frequently is to appreciate this green feed during the winter when it is scarce, but it is forgotten to some degree during the spring and summer. Poultrymen think that there is plenty of green stuff available at this season of the year, and that the birds will get it. But do they?

A large number of our poultrymen are keeping their birds in yards and under fenced conditions, and in the opinion of the writer this practice is on the increase instead of on the decrease. If chickens must be "yarded" through necessity, we will have to make the best of the conditions, but in too many instances birds are yarded when the necessity is more imaginative than real.

Lippincott has put the idea in very open words when he writes, "Poultry should be fenced out rather than in." The farmer can fence the chickens out of those places where they are likely to become a nuisance, and give them the whole farm over which to range. It has been proven repeatedly that birds must have green and succulent feed, and it is only upon an open range where they can get this in adequate amounts. The general health of the birds will be better, and they will possess that constitution and vigor which is needed in good breeding and high producing birds.

Stewart and Alwood are quoted in Poultry Production by Lippincott. Their decision is, that the fertility of eggs from chickens on free range is much higher than from chickens under confinement. This is of especial interest to the breeder of poultry. Two lots of Leghorns were under observation, one with free and extensive range, while the other was confined to a lot 15x100 feet. The eggs from the lot on the free range had a fertility of 91.5 per cent, and 83 per cent of these eggs hatched, while the eggs from the chickens under confinement had fertility of 75:6 per cent and of these only 67.5 per cent hatched.

The poultryman in the city must yard his birds, but every effort should be made to have the yards large. As important is the size of the yard, is the supply of green feed that the chickens receive. A system which is successfully operated by the city poultryman, who is forced to work under conditions of confinement, is that commonly known as "double yarding." As the name implies, there are two yards. In one of these the birds are kept this year, and the other is in pasture. Next year the yards will be reversed. Through alternation, the pasture is benefited from such a system. The range of the birds can be regulated, and the droppings will have a fertilizating effect. This alternation from year to year has the effect of rejuvenation, and the birds will get that supply of green feed and that opportunity to do some ranging which is so necessary for success in poultry production.

Comment on Kent's Article.

I cannot refrain from adding a slight explanation to Gordon Kent's article in January 15 issue, entitled "Power of the Pullet." I have been in the poultry business since 1892 both natural and artificial incubating. I want to state that it depends on what you want to use your egg for. If for market, then the pullet is the stuff; but I will wager the best pen on our plant that while the pullet will discount the hen in quantity from 30 to 40 per cent (both being of laying type and number, of course), at the end of the season you will have raised to full maturity from the hens 30 to 40 per cent more, stronger and better chicks.

We try our pullets out the first year, selecting best layers, type, etc., for breeders the next or following season, mating these hens to strong, vigorous cockerels, getting a 90 per cent fertility or better and a hatch seldom below 86 per cent.

But as Mr. Kent has outlined, there is much to be considered. We have a flock of about 120 pullets hatched after May 15, 1919, that laid on January 31, 1920, 29 eggs, and those hatched two months prior have been laying since October 1, and for the short period of two or three weeks the eggs brought $1 per dozen. A little hard on the consumer but quite flattering to the producer.

Each year a new bunch of beginners embark in the poultry business and nine times out of ten they want to get their start as cheap as possible (natural, is it not?)

Well, they go to a good reliable breeder, state how much money they want to invest, also how many birds they expect for the purse and the breeder may or may not explain that they cannot expect very flattering results, as they, the pullets, are very young that he would sell at those figures. Therefore the beginner is disappointed and in this case the breeder is advertised but not beneficially; as is often quoted, "gets a black eye." But if the beginner waits until the second year to use them as breeders it will be easy for him to build up a dandy flock.

These few pointers are from actual tests, and we have a strain of "bred to lay in winter," W. P. R. that we can show records second to none on flocks of 100 to 300.

L. P. McCann, county agricultural agent, Mesa county, has given you the secret plus good feed, care, housing, etc. Cleanliness is as necesary as feed. When the droppings are not removed, the fumes arising from them invite disease. Our dropping boards are cleaned every morning, hence a short job.

We house from 200 to 250 in a house 20x50, with south side (the front) all open except burlap curtains to drop on very bad weather. Also burlap curtain to drop down in front of roosts in very cold weather. They then put on a heavy, compact coat of feathers and cold- chilly days do not affect them. Our poultry have not had even a cold this winter and are in the pink of health, scratching, singing and laying. —A. W. Gingery, Aurora, Colo.

Grain for the Fowls.

What parts should be used of wheat, barley and oats to be ground together for poultry as a dry mash? Wheat and oats and barley are the only grains available in this part of the country.—R. L., Wyoming.

Here is the table:

	Protein	Carbo-hydrates	Fat
Wheat	13.5	73.4	2.1
Oats	12.4	70.5	4.4
Barley	11.5	74.5	2.1

As you will notice, wheat contains 1 part protein to 5.7 parts carbohydrates; oats 1 part to 7; barley 1 part to 6.7. I believe that poultrymen consider a ration of one part protein to about 5.5 parts carbohydrates about right. In that case wheat is the nearest to a balanced ration, but no one grain should ever be fed exclusively. Briefly, you cannot be far wrong to feed the three grains in equal amounts.—W. E. V.

Chickens In the Far North.

Chicken farming under the Arctic circle or in its near vicinity, would hardly seem to be an attractive industry, yet it has proved profitable in one instance at least. A certain man in Valdez, moved by a desire to have fresh eggs occasionally and a bit of chicken meat to flavor the ordinary fare of that region, bought a dozen hens, paying for them $2.65 each. There are certain obstacles in the way of climate that the fowls have to overcome, but in spite of this they have produced for him 935 eggs and twenty-three young chicks. He sold $80 worth of eggs, and his chicks, at the time of writing the item from which this information was gleaned, were worth about $50 for frying purposes. His expenses for food and fencing were $25, so he figured his net profit on the original investment as $73.20 for the first summer.—Rochester Democrat and Chronicle.

Mrs. Kyffin Has Moved.

Mrs. J. W. Kyffin wishes to announce to her old customers and friends that she is now at her new location at R.F.D. 2, Box 142B, Pueblo, Colo. Her new poultry farm is equipped in an up-to date manner, and she is now able to take care of all ordrs for her Business Buffs more promptly than heretofore, as the mail and express service is much better than at the old place.

Virtue In Nest Eggs

Is there any virtue in nest eggs; natural or artificial?—W. C., Nevada.

Yours is one of the many questions we cannot answer. There may be virtue in nest eggs, if the profit accruing to the merchant who sells them makes him more virtuous. However, we have found the opposite to be true, that the more money a man makes the less virtuous he is. I have never had any trouble to get my hens to lay in prepared nests. There will be a little trouble with the pullets, but they soon find the nests and I think as soon without nest eggs.—W. E. V.

Buff Orpington Ducks.

If you want to raise ducks, why not raise large ones and get eggs too? The Buff Orpington ducks are of good size and great layers, averaging over 200 eggs a year. These eggs are a third larger than a hen egg, are white and of a fine flavor.

The surplus drakes make most delicious table fowls, but to kill a Buff duck would be like killing the goose that laid the golden egg, as they are valuable layers when much older than hens. They are twice the size of Runners and produce a large amount of feathers, which adds greatly to the profit.

Here in our latitude of Stillwater, Okla., the young ducks start to lay in January and lay steadily until September, when they molt and rest for several weeks. They will be ready to lay in the fall if not allowed to grow too fat.

The Buffs are considered one of the handsomest of the duck family, being a deep yellow, except the neck and head of the drake which is a soft seal brown.

The ducklings are easily raised and should be liberally fed on soft feed several times daily, as they grow about three times as fast as chickens. When full grown, Buff ducks are light feeders, good foragers and destroy thousands of insects and obnoxious weeds. They are certainly death on crawfish, angle worms, bugs and worms on cabbage and potato vines.

They are easily confined, scratch no gardens and do not require fine houses, in fact they prefer to roost out doors except during deep snows and zero weather, at which time any dry shed will do for a shelter.

These ducks have all the advantages of chickens and none of the drawbacks such as lice, mites, fleas, roup, cholera and scaly leg. They do not require a stream of water, although a pond is very desirable a they can gather lots of their living out of the water. We have raised all kinds of poultry but find the Buff Orpington ducks the least care and the most profitable.—Mrs. Fred Sieglinger, Stillwater, Okla.

Penrose to Sell Holsteins.

One of the big public sales of the season is that scheduled for Denver in the near future, when M. E. Penrose, the well known breeder of Holsteins, will offer 125 head of milk stock—all cows but ten—at public auction. This dispersion of Holstein blood will give dairy farmers in Colorado and neighboring states a good opportunity for adding to their herds, or for buying purebreds as foundation stock. Mr. Penrose is in the habit of topping the breeding sales at the National Western Stock show. He has nothing but the best blood lines and high producers—the kind that will pay a profit right from the start. Read his advertisement in this issue.

I like Western Farm Life and cannot think being without it. Subscription price for two years is enclosed.—H. H. Abbott, Del Norte, Colo.

S. C. W. Leghorns, Tom Barron's Imp. Pedigreed Stock
Hatching Eggs---Day-old Chicks

450 OF OUR BRED-TO-LAY PULLETS LAID OVER $800.00 WORTH OF EGGS IN NOVEMBER AND DECEMBER. If you want layers, place your order at headquarters and make no mistake. Get the bred-to-lay kind. They make money for us and our customers; they will for you. Write for catalog, prices and facts, before you buy eggs or chicks. It's free; it tells all, write

FOWLER EGG FARM, Route I-B, Fowler, Colo.

62 BREEDS PROFITABLE Pure-Bred Chickens, Geese, Ducks, Turkeys. Hardy Fowls, Eggs and Incubators at lowest prices. *Pioneer Poultry Farm.* Valuable poultry book and catalog FREE. F. A. NEUBERT, Box 331, Mankato, Minn.

Poultry Book Latest and best yet: 144 pages, 215 beautiful pictures, hatching, rearing, feeding and disease information. Describes busy Poultry Farm handling 53 pure-bred varieties and BABY CHICKS Tells how to choose fowls, eggs, incubators, sprouters. Mailed for 10 cents. Berry's Poultry Farm, Box 66, Clarinda, Iowa

PLANS for Poultry Houses ALL STYLES, 150 ILLUSTRATIONS, SEND 10 CENTS. INLAND POULTRY JOURNAL, Dep. 42, Indianapolis, Ind.

Chickens Sick?—Use Germozone Roup, colds, bowel troubles, sore head, limber neck, etc. At dealers or postpaid 75 cts. with 5 book Poultry Library. GEO. H. LEE CO., Dept. F-28 OMAHA, NEB

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Not Too Big to Appreciate You

There is a Weakness in the Stockgrowing Industry

Mr. Stockman, you are losing dollars every day because the control of the stock-growing business does not rest in your hands. Check over with us the three main processes that must take place before the stock on your ranch becomes dollars in your pocket.

RAISING	FINANCING	MARKETING
This YOU Control	?	?

The profits from two of these three operations you now do not participate in. The control of two-thirds of the industry by which you earn your livelihood is now out of your hands.

This condition need not exist. The large profits earned by financing livestock men can be yours.

Stockgrowers of the West possess ample capital to fully finance their own ranches by pooling their resources.

Previously the organization has been lacking. Now this need has been met in the form of a company organized by stockmen to loan money to stockmen.

Colorado Stockgrowers' Loan Company

Authorized Capital $2,000,000

Suite 750 Equitable Bldg. Denver, Colorado

Entirely owned, controlled and managed by "live wire", successful STOCKGROWERS. Every officer and director of this Company has been a resident of Colorado from 10 to 50 years, has made a signal success of his own ranch, and is of high financial standing.

John P. Klug, Greeley, Colorado
President

"Mr. Klug's extensive ranch—one of the largest in Colorado—is not only stocked with the best Hereford cattle, that careful selection and scientific breeding can produce, but is also complete with modern buildings, stock corrals, broad alfalfa fields, yielding five tons to the acre, and next year will be added 1,000 acres of wheat.

"Year by year Mr. Klug, who homesteaded on this ranch 34 years ago, has added to his holdings until today he owns more than 25,000 acres of deeded lands with a total of 30,000 deeded and leased.

"Like all progressive men, Mr. Klug has found time to interest himself in civic affairs, and is president of the Colorado Stockgrowers' Association."

—*Colorado Manufacturer and Consumer, issue of September, 1919.*

Jos. S. Hunn, Glenwood Springs, Colorado
Vice-President

Mr. Hunn is widely known on the Western Slope, is an extensive sheep operator, and vice-president of the First National Bank of Glenwood Springs, Colo.

Percy Houts, Denver, Colorado
Secretary

Cattleman—owner of a large ranch at Delta, Colo.

John Welsh, Eagle, Colorado

President of the First National Bank of Eagle and a cattleman of wide prominence.

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William Marlman, Las Animas.
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Richard Dillon, Sedalia.
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A. F. Dworak, Longmont.
O. M. Baker, Eagle.
William Kettle, Westcliffe.
John Meyer, Westcliffe.
Bart Owens, Fruita.
H. P. Olesen, Eagle.
M. F. Stewart, Loveland.
Charles F. Nogal, Eagle.
Conrad Hunn, Loveland.
R. McClain, Sharon Spgs., Kan.

Fruitful Field for Operations

Stockmen's journals and the daily press constantly urge INCREASED PRODUCTION and tell of the WORLD-WIDE SHORTAGE of meats, animal fats and leather.

For increased production increased capital is necessary.

The latest report of the Federal Bureau of Crop Estimates places the present valuation of livestock in Colorado at more than $200,000,000.00.

Authentic statistics, collected during the war, show that about 85 per cent of the livestock business is done on borrowed capital.

Think what an immense amount of financing that $200,000,000.00 represents. Every increase in production means a proportionate increase in capital required.

Why Not Pay Interest To Yourself?

Get in with us, boys!—in the biggest money-making end of the livestock business—the loaning of your surplus to other stockmen.

Let a portion of your assets work for you without effort on your part.

Finance your own industry and control it.

Wherever your ranch may be—in Colorado or any other state—sign your name on the proper coupon, tear out and mail to us today, and we will give you by return mail complete details of this plan, which will revolutionize the stockgrowing industry.

CUT OUT COUPON HERE

Colorado Stockgrowers' Loan Company,
Suite 750 Equitable Bldg., Denver, Colorado.

Gentlemen:

I may need a_____dollar livestock loan about _____, 1920. Please send me full details.

Name _____

Town_____ State_____

R. F. D._____

SEND THIS COUPON TODAY

Colorado Stockgrowers' Loan Company,
Suite 750 Equitable Bldg., Denver, Colorado.

Gentlemen:

I may become financially interested in your Company. Please tell me your plans fully.

Name _____

Town_____ State_____

R. F. D._____

Horse Association of America.

This is the name of a new organization recently formed by the leaders of the horse breeding associations. It is not formed with the idea of fighting motor driven vehicles, but simply to tell the truth about the horse and thereby put them where they belong in the economical progress of the country.

The new organization should be of interest and should receive the support of all industries directly allied with the horse business. The plan to be adopted by the association will be to conduct a publicity campaign in this country and Canada, setting forth the horse and its importance to other industries. It is pointed out that the mechanically driven device has not been able to supplant the horse and it is consistently true that the horse has been able to save the day in innumerable cases.

The demand for good horses is making it profitable for the farmer to again resort to the practice of breeding good mares to good horses with the idea of producing the kind of animals that are wanted. Money is never made with poor or cull horses; but the good, clean and physically sound animals will always bring a price that makes it profitable to raise them.

The foreign demand for horses has created a very good market for the right kind. As the expense of transportation is heavy, the best only are taken. This is also true at home; the market demands are strong for the better ones. This plan of organization will be of help to the feed men, horseshoers, saddle manufacturers and all other industries allied with the horse business. The headquarters of the association is at the Union Stock Yards at Chicago.

Livestock Field Notes.

D. D. Barr & Sons of Sanford, Colo., owners and finishers of the grand champion Angus steer, have been in the breeding game only five years, but are forging to the front rapidly. It was their second year at the National Western show and they succeeded in cleaning up a good proportion of the championships in that breed. The grand champion Angus was a smooth yearling whose finish was due to a carefully balanced ration of rolled barley, oil meal, bran, ground corn and molasses with plenty of pea hay. Their winnings included first on senior bull calf, first on junior yearling heifer, first on aged bull and championship and reserve championship on steer. Nebraska Agricultural College bought the senior bull calf.

Dr. DeWitt has recently moved his fine herd of Herefords to his new Hermosa Farm, between Morrison and Denver. He has some top-notch show stuff to sell. His herd bull Mischievous, Jr., took third prize at the recent Stock Show. See his announcement in this issue of Western Farm Life.

Mr. H. J. Vughn of Kirk, Colo., has some fine Jersey bulls for sale. These animals are of the St. Lambert and Golden Lad breeding. If you want something good in Jerseys write Mr. Vaughn. Look for his ad in this issue.

R. C. Van Scoy & Son, Highland Station, Denver, have a Duroc Jerscy announcement among our purebred ads. Their exhibit at the National Western was highly creditable.

Keep March 5th in mind! On that date there will be a big sale at Longmont, Colo., of 72 head of Holsteins and 40 head of Durocs. These will be offered by Mr. D. H. Stephens of Longmont. All but 12 head of the Holsteins are registered. Read his announcement on our Livestock pages of this issue.

There will be a big Poland-China auction sale at Deer Trail, Colo., at the William Upp ranch. Mr. Upp is offering 40 head of fine individuals. It will be worth your while to attend this sale. Read the announcement in our Livestock department.

If you are looking for Holsteins, read the ad of W. C. Sauer & Son of Fort Lupton, Colo., in our Livestock department of this issue. They have some fine animals for sale, the kind that are bred for production.

L. G. Davis, of Saratoga, Wyo., and Denver, won many prizes at the Stock show on his Anxiety bred Herefords, both single classes and carload lots. He reports some large sales made during Stock Show week, some of which were, 32 yearling heifers at $600 each, and 50 young bulls at $400 and $500 each. Read his ad on our Livestock pages.

The Cornforth Livestock Co. of Elbert, Colo., are offering a few of their famous Forest Glen Shorthorns. See their ad in our Livestock department.

The Agricultural College at Fort Collins, Colo., have a 2-year-old son of the great Sir Pieterje Johanna Mercedes. He is a fine individual, and bids fair to make a top-notcher. Read the ad in our Livestock department.

W. B. and E. M. Downs of Yuma, Colo., are offering three fine bull calves of exceptional breeding. These are of the Holstein breed, and should make fine dairy herd headers. Read their announcement on our Livestock pages.

You now have a chance to get some of the Win-O-Dee Farm Holsteins. Mr. P. K. Hudspeth of Pueblo, Colo., owner of this herd, announces that he has some young stock of both sexes for sale. Read his ad on one of our Livestock pages of this issue.

There will be a big Holstein Dairy sale at Greeley, Colo., on March 8th. The herd of Mr. Harry J. Brown will be sold. He has some fine dairy animals and it will pay you to attend this sale if you are in the market for Holsteins.

Colorado Durocs
In Demand at Denver

Association Sale on January 20 a Grand Success

Prices not high, but quality and breeding unsurpassed, and consignments go to seven different states.

Top of the Sale, $410

Buyers and bids from as far as Indiana on the east, Idaho on the west, and Texas on the south.

Sensations, Orion Cherry Kings, Pathfinders and Good E. Nuffs Looked Good to Outside Buyers

The Breeders Represented in the Sale were:

GEO. E. MORTON & SONS, Fort Collins, Colo.

JUDSON SOLOMON, Olathe, Colo.

THE BLUE RIBBON LIVESTOCK CO., C. F. Burke, Mgr., Pueblo, Colo.

COLORADO AGRICULTURAL COLLEGE, Ft. Collins, Colo.

W. L. STONE & SON, Pueblo, Colo.

E. D. HARDMAN, Pueblo, Colo.

J. FRED BRAUER, Colorado Springs, Colo.

R. C. VANSCOY & SON, Highland Station, Denver, Colo.

HORACE G. SQUIBB, Aurora, Colo.

CALDWELL MARTIN, Littleton, Colo.

J. W. BRAUER, Colorado Springs, Colo.

Write the above breeders for up-to-date Durocs at private sale, or get on our Association mailing list by writing to The Colorado Duroc Breeders Association, C. F. Burke, Secretary, Pueblo, Colo.

We Hold an Annual Sale at Denver in January During Each Stock Show

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.

C. F. Burke, Mgr. Pueblo, Colo.

Shaggy, Sickly Sheep

Worms in sheep cause thin, sickly animals with shaggy wool. Removethese worms, and they will be healthy, heavy animals. Blue Devil Worm Chasers are guaranteedto remove these worms. Afterwards the animals will pick up weight rapidly, and the quality of wool will be greatly improved. The method of giving capsules is so simple that anyone can do it.

MONEY BACK—TRIAL OFFER

If Blue Devil Worm Capsules fail to remove the worms in your sheep, and if the animals do not improve in health to your absolute satisfaction, we will cheerfully and promptly return the purchase price.

Price, Prepaid, $6.00

Complete outfit of 100 capsules, jaw spreader, capsule injector, with complete instructions.

Prices for Extra Capsules (only)

25 Capsules	$1.50	200 Capsules	$10.00
50 Capsules	3.00	500 Capsules	21.00
100 Capsules	5.00	1000 Capsules	40.00

For larger or smaller quantities send for price. We also make Red Devil Worm Capsules for Hogs. Send for Circular 10.

CHARLES M. HICK & CO.

Dept. 205, 177 N. State Street, Chicago

Registered Breeding Bulls and Heifers

HEREFORDS SHORTHORNS

Young sctock of both sexes for sale at all times. Our sales yard is located within two blocks of The Denver Union Stock Yards. We are pleased to show our stock at all times.

THE LOWELL PUREBRED CATTLE CO.

Union Stock Yards, Denver.

Glendale Stock Farm

Irvindale Rowdy Grand Champion Belgian Stallion Chicago, 1917, Denver, 1918 and 1919

Breeders of

BELGIAN HORSES and POLLED HEREFORD CATTLE

Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.

Hermosa Ranch Herefords

Herd Bull—MISCHIEVOUS JR., by The Heir.

Dam full sister to BEAU MISCHIEF and dam of PRINCE IMPERIAL.

Very few high class herd bull prospects are for sale sired by Prince Imperial and other celebrated bulls.

Farm on the Morrison Road 9 miles from Denver.

T. L. DeWitt, Owner, 1550 Ogden St., Denver

PERCHERONS & BELGIANS

Purebred bay stallions and mares, 2 to 6 years old, weighing 1,800 to 2,150 lbs. The best that the world can produce. Every one has been a first or second prize winner at Denver.

JOS. ROUSSELLE & SONS
SEWARD, NEBR.

REGISTERED
DUROC JERSEY HOGS
BRED GILTS FOR SALE.

R. C. VAN SCOY & SON
Highland Sta., Route 5. Denver
Phone Arvada 105-R-2.

JEWELFIELD FARM

Big Type Poland Chinas

A few choice young Boars and Gilts for sale.

You will find no better blood lines anywhere.

Priced Right

L. L. MATHISON Ft. Morgan, Colo.

H. C. DENNIS, Auctioneer
FORT MORGAN, COLORADO

Registered Shorthorn and Jersey Cattle
Real Estate Sales Conducted. I can sell your real estate if it can be sold.
Wire at my expense for dates.
Phone: Res. Morgan 156J; Office Morgan 16

Farmers' and Stockmens' Exchange

Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

PLYMOUTH ROCKS

BARRED PLYMOUTH ROCK EGGS, SETTING of 15, $1.50. Address John M. Mischke, Route 3, Loveland, Colo.

WHITE ROCKS.

LIMING'S HEAVY WEIGHT WHITE ROCKS. Eggs $2 per 15. Quality Fruit & Poultry Farm, Manzanola, Colo.

WHITE PLYMOUTH ROCK HATCHING EGGS and baby chicks from winter layers. A. W. Gingery, 1951 Geneva st., Aurora, Colo.

BARRED ROCKS.

RINGLET BARRED ROCK EGGS AND DAY-OLD chicks. Write for prices. Mrs. C. N. Bailey, Lyndon, Kans.

BARRED PLYMOUTH ROCK EGGS FOR HATCHing, $1.50 for setting of 15. Mrs. C. J. Davidson. Fort Lupton, Colo.

PUREBRED BARRED ROCK COCKERELS, $3; winter laying strain. Eggs, 15 for $5. E. Plessinger, Cheyenne Wells, Colo.

BARRED ROCKS BRED FOR HEAVY EGG PRODuction, and exhibition quality. Cockerels, $7.50, $10 and $15. Ahlquist Bros., Box A, Florence, Nebr.

BARRED ROCK EGGS FOR HATCHING, FROM pens, either light or dark, $3 for 15; from range flock, $6 for 100. Send for mating list. Chester Blunt, Route 1, Greeley, Colo.

RHODE ISLAND REDS

S. C. RED COCKERELS CHEAP. U. G. Barnes, Norman, Neb.

S. C. RED COCKERELS FOR SALE, $3 EACH, or two for $5. Ed Grotenhuis, Crawford, Colo.

BEAUTIFUL ROSE COMB RHODE ISLAND RED cockerels; large and well matured; $2.50, $3, $4, $5. Lucy Ruppenthal, Lucas, Kans.

FOR SALE—PURE BRED ROSE COMB RHODE Island Red cockerels, from blue ribbon stock, $4 each. Mrs. Ernest Hieber, Burns, Wyo.

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

FINE CHICKENS AT THE TUCKER FARM. Rhode Island White, Rhode Island Reds. Baby chicks. Write me your wants; eggs in season. Mrs. Hattie M. Tucker, Pawnee, Okla.

LOWER'S POULTRY FARM, ARVADA, COLO. is the oldest and largest breeder of thoroughbred S. C. Rhode Island Reds in the West. Our stock is line bred, from selected heavy laying type for seventeen years. Eggs for hatching, $12 per 100, $5 for 30. Send for catalog and price list of stock and baby chicks.

BRAHMAS

LARGE-BONED LIGHT BRAHMA COCKERELLS for sale. Max Reugnitz, Route A, Otis, Colo.

FOR SALE—THOROUGHBRED LIGHT BRAHMA Cockerels, from prize winning stock. Best in the west. Prices reasonable. E. Grosser, 2240 Perry, Denver, Colo.

LEGHORNS

TOM BARRON SINGLE COMB WHITE LEGhorns. Eggs for hatching. F. B. Morger, Fowler, Colo.

ROSE COMB BROWN LEGHORN ROOSTERS, state winners; three dollars. Rufus Standiford, Reading, Kansas.

KYFFIN'S BUSINESS BUFFS—EGGBRED S. C. Buff Leghorns. Mrs. J. W. Kyffin, R. F. D. 2, Box 142B, Pueblo, Colo.

BABY CHICKS. BOOKING ORDERS NOW. Single Comb White Leghorns, selected stock, best laying strain. Gilbert Anderson, Norfolk, Nebr.

S. C. WHITE LEGHORNS—NOW IS THE TIME to place your order for hatching eggs. My hens are bred to lay, and do it. L. E. Larson, Fort Morgan, Colo.

BABY CHIX—BUFF LEGHORNS MARCH 10TH, weekly hatches after this. Other breeds in any quantity. Book your orders early to avoid disappointment. Champney, 2057 So. Broadway, Denver.

S. C WHITE LEGHORN COCKERELS $2.50 each, three for $6.75. Booking orders now for eggs for March and April delivery; $1.50 for 15, 8c each in lots of 30 or more. Wm. A. Draves, Lemoyne, Nebr.

BABY CHICKS—S. C. WHITE LEGHORNS, from Hogan tested, selected, early laying stock. All eggs from my own raising. Price for February and March setting 25c each, post prepaid. Cash with order. Please order early. Ivar Johnson, Fremont, Neb.

DO YOU WANT BIG WHITE EGGS ALL WINter? We sell machines that produce them. Single comb white Leghorn pullets, cockerels, yearlings, hatching eggs and baby chicks. Ask for prices and trap-nest records. Satisfaction guaranteed. Blakeland Farm, Littleton, Colo.

RIVERSIDE POULTRY FARM SINGLE COMB White Leghorns. Heavy winter layers. Today, Jan 1, we gathered 330 eggs from 450 pullets and 200 yearling hens. We have been breeding our Leghorns for 15 years to lay more eggs than common hens at all times, especially in winter when eggs are high. We breed from nothing but winter layers. Get Walker's strain and get winter layers. Baby chicks and hatching eggs for sale. Prices reasonable. Write for circular and price list. H. D. Walker & Sons, La Junta, Colo.

WYANDOTTES.

WHITE WYANDOTTE COCKERELS, PRIZE winning; 232 egg strain, $5. E. M. Downs, Route 1, Yuma, Colo.

COCKERELS FOR SALE—A FEW PUREBRED White Wyandottes, $2.50. A. W. Bickel, Correctionville, Ia.

WHITE WANDOTTES—A FEW MATED PENS (five birds), $15 to $25. Also cockerels, $3 to $25. G. W. Hardin, Brock, Neb.

FOR SALE—WHITE WYANDOTTE EGGS FROM trap-nested stock. A few cockerels. Mrs. Mary M. Wright, Rte. 2, Box 314, Boulder, Colo.

GET CLARY'S PRIZE WINNING STRAIN CHALK White Wyandottes. Cockerels, $3, $5, $7, $10. Satisfaction guaranteed. George Clary, Endicott, Neb.

WHITE WYANDOTTE EGGS—BOOKING ORders now for March and April delivery. $1.50 for 15; 8c each in lots of 30 or more. Wm. A. Draves, Lemoyne, Neb.

MINORCAS

SUYDAM'S MINORCAS—SPECIALTY BREEDER of Single Comb Black Minorcas. Exhibition and utility, cockerels, cock birds; hens and pullets for mating. Eggs, baby chix. Satisfaction guaranteed; write for price. H. R. Suydam, 4500 Bryant St., Denver.

ORPINGTONS.

FOR SALE—S. C. BUFF ORPINGTONS, COCKerels, farm raised. W. H. Pundt, Deer Trail, Colo.

FOR SALE—PURE BRED BUFF ORPINGTON roosters, 1 and 2 years old, $3 to $6 each. Mrs. Henry Swan, Hugo, Colo.

HIGH CLASS BUFF ORPINGTON EGGS FOR hatching. Winter laying strain, $2.50 for setting of 15, $6 per 50, $10 per 100. Good hatch and satisfaction guaranteed. Mrs. J. W. Lee, Bridgeport, Neb.

SEVERAL VARIETIES

WINTER LAYING BARRED ROCK AND WHITE Orpington eggs, $5 per hundred| Myrtle Stuller, Bristol, Colo.

FINE BLACK MINORCA AND BUFF ORPINGton Eggs. Baby chicks. Frank A. Agnew, Southside, Omaha, Neb.

COLUMBIA HATCHERY—WE CAN SUPPLY you with any quantity of Baby Chicks. We have 14 varieties including all leading breeds. Write for our prices, you will save money. P. O. Box 1102, Denver, Colo.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

CATTLE

FOR SALE—20 HEAD HIGH GRADE MILKING Shorthorn heifers, 8 to 20 months old. J. P. McEnroy, Larkspur, Colo.

FOR SALE—30 HEAD HIGH GRADE MILKING Shorthorn springing heifers. Geo. H. Stewart, Sedalia, Colo. Phone 82-J-5.

REGISTERED HEREFORD BULLS — ABOUT thirty coming yearlings, two coming two-year-olds, and one 5-year-old bull, the sire of the others, and one of our herd bulls. All best Anxiety breeding, well marked, big boned, and not pampered with flesh to hide their defects. Priced to sell. J. O. D. Ranch, Aroya, Colo.

HOGS

BIG BONE POLAND CHINA, FALL GILTS, $40; yearling sows, $100. J. O. Hendricks, Seibert, Colo.

REGISTERED SPOTTED POLANDS. A FEW choice boars and gilts. John B. Young, Cedaredge, Colo.

FOR SALE—POLAND-CHINA PIGS, CHEAP, from weaning size up, big type (registered). Write F. L. Toliver, Fort Collins, Colo.

FOR SALE—REGISTERED BIG TYPE DUROC-Jersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

FOR SALE—TWO DUROC BOAR PIGS—COLOrado-Nebraska prize winning stock. Ready for service about April 1. C. E. Stretcher, Aurora, Colo.

STOCK HOGS WANTED—WE WANT TO BUY several hundred head of pigs and hogs weighing from 60 pounds up. Let us know what you have for sale. Write Duroc Farms, 412 Cooper Building, Denver, Colo.

Here Is the Place to Sell Poultry and Eggs

If you have stock or eggs to sell this spring, send in an advertisement of what you have to offer. You will find all the buyers you want from among our 50,000 readers.

Others have found this the best place to advertise, you will also if you will but give it a trial.

Read what some of our advertisers have to say:

Western Farm Life: It sure pays to advertise in Western Farm Life. I have sold out all surplus pullets.—Mrs. J. W. Kyffin, Pueblo, Colo.

Western Farm Life: Your paper sure gets results. Will have another advertisement later.—Vivian Anderson.

Western Farm Life: Have had excellent results from my poultry ad with you.—Chester Blunt, Greeley, Colo.

Western Farm Life: Have sold all my cockerels, and the pulling power of Western Farm Life is much appreciated.—E. A. Miller, Alma, Neb.

Western Farm Life Run my ad in the next two issues. From this little ad I have sold poultry in several Western States and all over Colorado. Thanks to you.—F. L. Toliver, Fort Collins, Colo.

Western Farm Life: It might be of interest to you to know that I have this season sold through your paper one $50.00 order and numerous smaller orders. I find your paper a good advertising medium.—Liston L. Hall, Gering, Nebraska.

We receive almost daily letters like the ones quoted above from breeders who are successfully using the classified advertising columns of Western Farm Life. Every one of our 50,000 subscribers is a prospective buyer of poultry and eggs this spring. Send in your advertisement today, so it will reach us in time for the next issue. Rate, 5c a word; four or more insertions, 4c a word each insertion. Address

WESTERN FARM LIFE
DENVER, COLORADO

BABY CHICKS—ORDER EARLY, GET CHICKS from the winter layers. Price list. Sarver Poultry Farms, Hastings, Nebr.

WANTED—200 CASES OF EGGS, THOROUGHbred chickens, for hatching; will pay fancy price; what have you? Denver Incubator Co. & Hatchery, 173 South Broadway.

EGGS FOR HATCHING—SILVER CAMPINES, $2; Buff Leghorns, $2; Blue Andalusians, $2; Single C. R. I. Reds, $2 for 15 eggs. John L. Miller, Arvada, Colo.

BUFF LEGHORNS, RHODE ISLAND REDS—best layers on earth. Headquarters for cockerels, baby chix; hatching eggs. Write us your wants. Champney, 2057 South Broadway, Denver.

YOU BUY THE BEST CHICKS FOR THE LEAST money, from the Colwell Hatchery, Smith Center, Kansas. 150,000 to be shipped everywhere; 18 cents each, 500 for $89; guaranteed alive or replaced free.

BABY CHICKS THAT WILL LIVE AND THRIVE in this mountain territory. Eggs selected from the best Colorado flocks. Remember we have the only hatchery in Denver. Buy direct from us and save reshipping. Present capacity 30,000 eggs. Incubators and Brooders. Denver Incubator Co. and Hatchery, 173 South Broadway.

COLUMBINE BABY CHICK COMPANY—WE are booking orders for March and April hatches of White and Brown Leghorns. Reds, Barred and White Rocks, Orpingtons, Wyandottes, Brahmas, Black Langshans, and Minorcas. We guarantee live delivery. Ship everywhere. Mail or Express. We hatch from thoroughbred flocks under expert supervision and not from eggs obtained from anywhere and anyhow. They live. They lay. They pay. Send for price list and booklet on Baby Chicks free. Our only address, 459A So. Gaylord, Denver, Colo Phone So. 2602.

TURKEYS.

TURKEY EGGS—MAMMOTH BRONZE, FROM 16 to 20 pound hens, 50c each, for April and May delivery. Booking orders now. Wm. A. Draves, Lemoyne, Neb.

Let Western Farm Life Service Bureau help solve your problems.

REGISTERED BIG TYPE DUROC JERSEY boars and gilts, the kind that brings the money at the block. Fashionably and strongly bred by our herd boar, Orion Cherry King 15th, and out of Defender sows. We are sold out on anything up to July farrow. Money back if not satisfied. J. O. D. Ranch, Arova, Colo.

HORSES.

SHETLAND PONIES FOR SALE—STALLION coming 7; gelding coming 5. Both have won prizes at the Larimer County Fair. Also double harness and buggy. John M. Mischke, Route 3, Loveland, Colo.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—GENUINE SIX ROW BARLEY, Matures ninety days. P. O. Box 13, Denver.

1,000 ONION SETS $1.00, PREPAID. CATAlogue free. Long Seed Co., Boulder, Colo.

BEST WHITE BLOSSOM SWEET CLOVER, VERY reasonable. John Lewis, Route 1, Madison, Kan.

WANT GIANT YELLOW SWEET CLOVER SEED, Mellilotus Officinalis. Must be true to name. P. O. Box 13, Denver, Colo.

MINNESOTA NO. 13 SEED CORN—CERTIFIED and registered stocks. Catalogue free. Long Seed Co., Boulder, Colo.

ALFALFA SEED—FANCY WYOMING COMMON and certified Montana Grimm. Samples, catalogue free. Long Seed Co., Boulder, Colo.

WHITE SWEET CLOVER FANCY COLORADO hulled, scarified seed, 100 lbs. $32.00. Catalogue free. Long Seed Co., Boulder, Colo.

FARM SEEDS WANTED—WE WANT TO BUY all kinds of Farm Seeds and Seed Corn. Send samples for our best offer. Armstrong Seed Co., Denver, Colo.

GROW YOUR OWN SUGAR—GENUINE SUGAR beet seed, with instructions for making syrup and sugar, 4 ozs. 25c. Catalogue free. Long Seed Co., Boulder, Colo.

ARMSTRONG'S TESTED FARM SEEDS—Marquis Wheat—The King of all Spring Wheat. Ten days earlier than most other sorts, which means that it gets out ahead of rust, smut, drought and hot winds. Produces more bushels per acre and has a higher milling and baking quality than any other Spring Wheat grown today. Almost without exception Marquis Wheat grades No. 1, and always commands a premium on every market. Our seed is plump, sound and high germinating. Price, by freight or express at purchaser's expense: Lb., 15c; 2 lbs., 25c; 5 lbs., 60c; 10 lbs., $1; 25 lbs., $2; 100 lbs., $7. Seamless sacks 65c each; jute 25c each, extra. If wanted by Parcel Post, add 5c per lb. for postage. Colorado Dry Land Grown Reid's Yellow Dent Seed Corn. By 10 to 1 Reid's Yellow Dent is the most popular corn grown in the Central Corn Belt. Produces most bushels of dry sound corn of the highest feeding value and is without question the heaviest yielding sort known today. A small patch will fill your cribs full to the top and if cut in prime condition will make worlds of sweet and juicy silage of the highest feeding value. Our grower east of Denver on a strictly Dry Land Farm has been selecting and breeding up this corn for the past 7 years, so that he now has the biggest and best type of corn adapted to Western conditions and a sort which without any extra labor or expense should double your yields. Try a small patch of this corn this season, or plant it for your main crop and grow the biggest and best corn you ever had. You can order direct from this advertisement, or if you prefer to write us we will send you free samples so you can see just what it is, but don't delay, as our supply is limited. Price by freight or express at purchaser's expense: Lb., 25c; 2 lbs., 45c; 5 lbs., $1; 10 lbs. (enough to plant a big acre) 1.80; 25 lbs., $3.75; 100 lbs., $10. Seamless sacks 65c each, jute sacks 25c each extra. If wanted by Parcel Post, add 5c per lb. for postage.

We can furnish anything you may need in Farm Seeds, seed corn, seed potatoes, etc., and if you will write us stating what varieties and quantities of seeds you will want, we will gladly mail you Free Samples and quote you our lowest prices, delivered your station, all charges prepaid. Thirty-five years growing and selling seeds at Shenandoah, Iowa, has proven to us that there is only one quality of seed and that is the "Best Grade Only." We have no second grades. Let us send you our Special Farm Seed Catalog and Free Samples. Your name on a Postal Card will do. Armstrong Seed Company, Dept. L, Cor. 15th and Blake Sts., Denver, Colo.

STRAWBERRY PLANTS.

STRAWBERRY PLANTS—DAHLIA BULBS, 150 kinds. Write for prices, all kinds nursery stock. McMullen Nursery, Box 374, Council Bluffs, Ia.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

AGENTS—WRITE TODAY FOR CATALOG OF our sprayer and autowasher. Do not miss this opportunity. Columbian Mail Crane Co., Columbus, Ohio.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

WANTED—RAILWAY MAIL CLERKS, MEN—Women. Commence $110 month. Experience unnecessary. Common education sufficient. List positions open—free. Write immediately. Franklin Institute, Dept. P171, Rochester, N. Y.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

IF YOU WANT TO SELL OR EXCHANGE YOUR property, write me. John J. Black, 33rd St., Chippewa Falls, Wis.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wisconsin.

SHAWNEE OKLAHOMA—CENTER OF A RICH farming country; write for information. Board of Commerce, Shawnee, Okla.

IDAHO LAKE REGION OPPORTUNITIES—Farms all sizes and prices for sale. Peter Johnson, Sandpoint, Idaho.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

FARM AND CATTLE RANCHES—CHOICE LIST. If interested call or write F. E. Wrockloff, Merchants Bank, Seventeenth and Curtis Streets, Denver, Colo.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description, location and cash price. James P. White, New Franklin, Mo.

REAL ESTATE WANTED—SELL YOUR PROPerty quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., Dept. 11, Lincoln, Neb.

FOR SALE—BY OWNER, 1,360 ACRES IMproved ranch near Greeley. Horses, 50 Holstein cattle, farming machinery; $24 per acre. W. C. Marsh, 115 Broadway, Denver.

FOR SALE—5 ACRES, ½ ACRE ASPARAGUS, alfalfa; 6-room brick; out buildings; $4,500; terms. Walking distance end Washington Park cars. Carl Schlumpf, 4601 E. Louisiana, Denver.

FOR SALE—RANCH OF 80 ACRES, IMPROVED, good water right; 300 head of good cattle, Whiteface and Shorthorn; good range. Located two miles from Hotchkiss, Colo. For further information, write John Head, Hotchkiss, Colo.

FOR SALE—480 ACRES IRRIGATED, BOULDER county, private reservoir; 125 acres Grimm alfalfa, 62 acres wheat, 3 sets of improvements, 1½ miles woven wire. Good terms to good man; sell part or all. L. E. Chenault, 1225 Clarkson, Denver, Colo.

BIG LAND SALE—NEAR DENVER—30,000 acres being closed out by trustee at forced sale under order of court; rich soil; good water rights; good title; your chance to select a good farm on small cash payment and ten yearly payments for balance—all within 10 to 40 miles of Denver, and all near good railway towns. Come or write the Trustee immediately for literature. Chicago Title & Trust Co., Trustee, 701 Ideal Bldg., 17th and Champa Streets, Denver, Colo.

ATTENTION STOCKMEN — WE HAVE TWO stock ranch bargains. Just what you are looking for: each ranch comprises 320 acres deeded land with substantial improvements and large acreage under irrigation, and in alfalfa, timothy, clover hay, unlimited outside free range, with 4,000 acres of leased land under fence for fall pasture. These ranches are located three miles apart, 125 miles from Denver. Good shipping point, big money makers. Prices $12,000 and $13,600 on good terms. See us at once for these. Reynolds, Covey & Reynolds, 625 Exchange Bldg., Denver, Colo.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

RED CEDAR SPLIT FENCE POSTS—GUARANteed full size and A-1 quality. You pay after unloading. Send for booklet and prices, delivered your station. Kirk Company, Box 1138-S, Tacoma, Washington.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—OR TRADE FOR LAND, WALLIS Cub Tractor, with four-bottom plow, 12-ft. tandem disc and press drill. Write for more particulars. Gus Herfert, Julesburg, Colo.

ALFALFA MILL.

COMBINED ALFALFA MILL AND ENSILAGE cutter in first class condition. Price new $550, will take $250 cash. Write or phone C. E. Stretcher, Aurora, Colo.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

TYPEWRITER

GOOD TYPEWRITER FOR SALE CHEAP—FREE trial, easy payments if wanted. Write Bertha Payne, Shawnee, Kansas.

TANNING

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

INVENTIONS

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

GROCERIES AND SUPPLIES

SEND FOR OUR WHOLESALE WEEKLY PRICE list. it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

Purebred Holstein Cows Return $1.54 for One dollar of Feed.

Even though you may regard your farm as a diversion or your hobby, you would doubtless prefer to see it self-supporting, and perhaps take still greater pride in it for that very reason. Here are two or three facts! Holsteins are the largest, most vigorous, most even-tempered, the easiest-cared-for breed, and the greatest yielders of milk in the world. Their milk is the most evenly balanced in fat, sugar and proteids, and for that reason easily digested. It is everywhere recognized by the medical profession as absolutely the best for infant and invalid feeding as well as for general use. A herd of Holsteins will give you on the average $1.54 for every dollar's worth of food they eat. Send for our free literature and look it over. Perhaps you will be interested in buying Holsteins.

THE HOLSTEIN-FRIESIAN ASS'N,
186 Hudson Street
BRATTLEBORO, VERMONT

MILK RECORDS

Do Not Replace Straight Bates Shorthorn Blood

FOR

Straight Bates Shorthorns are the "foundation source' of the Milking Shorthorns of England and America.

The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

Big Bargain in Sheep

My entire band of registered and high grade sheep is on the market about 1,000 head in all, including 250 Rambouillet, 125 Hampshire, and balance range sheep from yearlings to aged, about half and half. I have one of the finest bunches of Rambouillets in Wyoming, having paid $1,336 and $600 for two of the stud rams.

I am offering the whole band at $17.50 per head, right straight through, to the man who takes them all.

Besides these choice Rambouillets there are some outstanding Lincolns, three of the registered rams in that breed costing me $150 a head. The flock has never been picked over and the range stuff is in fair condition, having been fed hay and grain since last fall. Write or wire me if you want first chance at this extraordinary bargain.

DELL PRATT, MONETA, WYOMING.

We Won 19 Premiums At the Last Denver Stock Show

including Senior and Grand Champion Sow, Reserve to Junior Champion Sow, First Aged Herd, First Young Herd, with a total of EIGHT FIRST PRIZES.

We also bred and raised Edgemoor Cherry Chief 2nd, the **Grand Champion Boar** shown by the Colorado Agricultural College; also the first prize Junior Yearling Sow exhibited by Green Acres Farm.

An Edgemoor Farm sow consigned by us also topped the Duroc Breeders' Sale.

We have won first on under-year herd at the last three Denver Stock Shows.

Our 1919 spring pigs are all sold, but we have a wonderful lot of big, smooth, stretchy fall pigs, sired by the Grand Champion Boar of the Denver Stock Show this year and out of our big prize winning sows. Get your order in early.

EDGEMOOR FARM,
Littleton, Colo.

CALDWELL MARTIN, Owner.
CHAS. SEMORE, Herdsman.

Shorthorn Steers

The Shorthorn Steer carlots at the International, Chicago, sold for an average of $26.69 per cwt.—higher than any other breed.

Thos. Johnson, Columbus, Ohio, sold 100 Shorthorn steers last October at his farm for $19 per cwt. They weighted 1,695 lbs., making a gain of 406 lbs. in five months.

It Pays to Grow Shorthorn Beef.

AMERICAN SHORTHORN BREEDERS ASSOCIATION
13 Dexter Park Ave. Chicago, Ill.

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

BEAU ASTER

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER
Holyoke, Colo.

Forest Glen Shorthorns

We are offering some medium-priced cows and a few choice bulls at attractive prices.

Cornforth Live Stock Co.
ELBERT, COLO.

WIN-O-DEE FARM HOLSTEINS

Herd Bull KING TWISK SEGIS PONTIAC 182200. This sire's two nearest dams have a record of 35.38 lbs. butter from 733 lbs. milk in seven days. The average record of his six nearest dams is 24.38 lbs. butter in seven days. Young Stock of Both Sexes For Sale.

P. K. HUDSPETH, PUEBLO, COLO.
Siloam Star Route.

Polled Herefords

Double Standard
Herd Headed by Polled Dude 2nd 11187, 612340
Beau Donald, P. Plato and March On Blood in the Herd

SMITH LIVESTOCK CO.
Chivington, Colo.

HOLSTEIN BULL CALVES

We have for sale some mighty good ones with fine advanced registry backing. Prices from $150 to $500. Write us.

PAHGRE VALLEY RANCH
Montrose, Colo.

LA MARIPOSA

The Carr W. Pritchett Ranch,
Steamboat Springs, Routt Co., Colo.,
has for sale at this time 12 fine bulls from 9 to 20 months old. Sired by LOYAL STAMP. Priced right. Great-grandsons of Whitehall Sultan.

The Hereford Corporation of Wyoming
Box 876, Cheyenne, Wyoming

Registered Herefords

We Offer For Sale

3 Loads Coming 2-Year-Old Bulls
2 Loads Coming 2-Year-Old Heifers

And can also take care of any breeder who wants a few good bred heifers and cows.

Denver office
406 Live Stock Exchange Bldg.
RAYMOND S. HUSTED, Mgr.

W. C. SAUER & SON, RANCH
Fort Lupton, Colorado

We are breeding Holsteins for type plus production.

By good type we do not mean the coarse bone animal that some breeders call big bone animals, but we want the refined animal with constitution, vigor and size.

By productuion we do not mean what one animal produced under forced conditions, but what the average of the whole herd produced under ordinary herd conditions.

We are putting all of our cows as they freshen on the semi-official test for the year, and all that we have put on test have qualified, most of them, in three months, making half the required amount for the year.

The fourteen cows that are milking, counting four three-year-old heifers and one two-year-old, are producing an average of 48.8 pounds of fat per month, an average of 51 pounds of milk per day.

All of our cows will be tested under herd conditions and for the 305 or 365 day tests, for we feel that these are the kind of records that count and are the practical ones that promote the breed.

A Few Young Bulls For Sale

Choice Offering of Bred Poland China Sows, Also Good Young Poland China and Duroc Jersey Boars

We are also pricing a two-year-old son of Sir Pieterje Johanna Mercedes.

Sir Pieterje Johanna Mercedes was by Sir Pieterje Ormsby Mercedes, the greatest sire of cows testing over 600 lbs., and was out of a 900-lb. cow. The young bull is from a cow with a 618 lb. record.

ANIMAL HUSBANDRY DEPARTMENT
COLORADO AGRICULTURAL COLLEGE,
FORT COLLINS, COLORADO

3 HOLSTEIN BULL CLAVES

Well grown, nicely marked for high producing dams. Sire, Western Sir Colantha Ascalon, he by Western Ascalon Champion Boy, a son of Colorado's Greatest Dairy Cow, and half brother to Colorado's Greatest Dairy Heifer. Write us.

W. B. & E. M. DOWNS,
Yuma, Colorado.

Hampshires

Extra good bred sows for sale. also growthy open gilts and spring boars. Choice weanling pigs.

NEBRASKA BREEDERS SALES CO.
Box 13-H., Lincoln, Nebr.

REGISTERED JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.
H. J. VAUGHN, KIRK, COLO.

DUROC BRED SOW SALE FEB. 13th

At the Daly Farm, Cambridge, Neb.

This herd won Junior and Reserve Champion sow at the recent Stock Show. Also 1st and 4th on Junior sow pig; 2nd on young herd, 2nd on get of sire, 3rd on Junior boar.

BRED SOWS AND GILTS

We are offering a lot of choice Poland China Bred Sows and Gilts, all bred for March and April litters.

State Fair winning blood runs through our entire herd.

Write Us Your Wants.
THE DEMING RANCH,
Oswego, Kansas.

DUROC JERSEYS

A few fall Duroc pigs sired by a son of Scissors, and from prize winning sows, $35 each.

Also an extra good March boar, sired by Big Bone Wonder.

AUGUST F. BORGMANN
R. F. D. 1, Box 124, Longmont, Colo.

COL. H. C. JENNINGS
Pure-bred Livestock

AUCTIONEER

Also conduct Sales of Real Estate

524 17th St. Denver, Colo. Phone M-6870

LA BELLE RANCH

Has for sale Choice Young Registered

Duroc Sows and Gilts

bred to a high class boar for early farrow. **Also Good Fall Pigs.**

H. G. SQUIBB, Aurora, Colo.

Season's Quality Dispersal Sale

104 Registered Holstein-Friesian Cattle 104
Head Duroc Jersey Hogs Head

To Be Held in the Livestock Pavilion at

Longmont, Colo., Friday, March 5th

Sale commences at 10 O'CLOCK SHARP, Rain or Shine, Under Cover

46 Head Registered Holstein-Friesian Cows, Heifers Calves, and Bulls, of the most approved breeding of the day.

SENIOR HERD BULL CREWSDALE BOSMA PONTIAC 123139, a grandson of Pontiac Korndyke. The daughters of this bull are well marked and those now in milk give great promise.

JUNIOR HERD BULL LONGMONT COLANTHA CORNUCOPIA PAUL 204549, grandson of Colantha Johanna Lad, whose seven nearest dams averaged 27½ lbs. butter in seven days.

Several have A.R.O. records ranging from 11 to 20½ lbs. in 7 days, made from 2 to 4 months after calving under ordinary dairy conditions, at the ages of 2 to 4 years. The records were not made for show, but to tell us what could be expected from the individuals under ordinary feed and care.

44 Head Registered Duroc Jersey Hogs of the most approved blood lines, such as Cherry King, Top Col., Cherry Chief, Jack's Friend, Joe Orion, Orion Chief, High Chief, Much Col., Chief of Cols., The Professor and Crimson Wonder. All these entries are in strictly first class condition—working and will continue to do so.

Our reason for selling is that our Creamery Business has grown so that we can no longer look after both ends; so we have decided, on account of the advanced age and none too good health of the senior member of our firm, to dispose of our entire herd of great producing Registered Holstein-Friesian cattle, and our herd of Registered Duroc Jersey Hogs. We have rented the farm and are retiring for the present at least.

THIS IS AN ABSOLUTE SALE—A dispersion of all our herds of cows and hogs. This is a real opportunity of the Buying Public to secure real foundation animals of the most approved blood lines of their respective breeds.

We are also offering 14 head of very high class unregistered Holstein cows and heifers selected and raised by us for use in our Longmont milk business.

REMEMBER THE DATE—MARCH 5th. UNDER COVER. RAIN OR SHINE

Col. G. M. BANKS, Col. A. BASHOR, } Auctioneers.

Col. J. W. SHEARER, Ring Man.
C. W. HALL, Expert, Holstein Pedigrees.

WRITE FOR CATALOG.

O. J. STEPHENS & SONS, Owners, Cherwall Farm. Longmont, Colo.

S L W
HARDY HEREFORDS

FOR SALE

25 HEAD HARDY YOUNG BULLS
12 to 16 Months Old

Richly bred and in fine condition. Delivery April 1 or later to suit purchaser. Our Hardy Herefords stand the test and do well anywhere. Sires in service, Wilbur Mischief, Lord Oswald, Prince Hermosa 2nd. Correspondence solicited. Visitors welcome.

The S. L. W. Ranch Co.

Postoffice, Kersey, Colo.
Telephone Greeley.

Harvey E. Witwer, Pres.
J. A. Milham, Supt.

Brownhurst Dairy Sale

At my farm, 3 miles N. W. of Greeley, just South of Boyd's Beet Dump on C. & S. R. R.

Monday, March 8th, 1920

At 1 o'Clock Sharp **Terms Cash**

32 HEAD OF HOLSTEIN COWS
10 HEAD TWO YEAR OLD HEIFERS
1 REGISTERED HOLSTEIN BULL

This is a complete closing out sale of my dairy cows. This herd has been selected and bred up for years, and all cows not coming up to a high standard of production have been discarded.

10,046 Pounds Milk, 410.4 Pounds Fat
Average Yearly Production of Milking Herd

Official records of Roy Curtis for the Johnstown Cow Testing Association.

Send for Catalog
J. V. H. BROWNE, Auctioneer

Harry J. Brown, Owner, Rte. 5, Box 37, Greeley, Colo.

L. G. Davis Herefords

ANXIETY BRED

For Sale—3 cars of registered Anxiety Bred Open Heifers in lots to suit purchaser. Can be seen at my Wynnewood ranch six miles from Denver.

WE HAVE A FEW HIGH CLASS YEARLING BULLS FOR SALE

L. G. DAVIS, Saratoga, Wyo.

Or Wellington Hotel, Denver

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS, JOHNSTOWN, COLO.

JAMES PONTIAC DEKOL ORMSBY

Western Holstein Farm

HALL BROS., Props.

Breeders of the correct thing in Holsteins. Colantha-Johanna-Ormsby Families. Pedigrees full of great show-ring winnings and world's record milk and butter production. Send for circular.

BULL CALVES $200-$500 EACH

Address Box 2, South Denver Station, Denver, Colo., or visit the Farm, 5½ miles southwest of Denver on the Morrison Road.

YOU SAW WHAT WE DID

At the National Western Stock Show. We can sell you Cows, Bulls and Heifers.
Let us know what you want.

STILL A FEW DUROCS FOR SALE.

A. M. McCLENAHAN, GREELEY, COLO.

DISPERSAL SALE

OF THE

DENVER HOLSTEIN HERD

125 Head Will Be Sold---All Cows But Ten---125

Sale Begins at **10 o'Clock** at the **Windsor Farm,** East 38th Ave. and Xenia St., **Denver**

Monday, March 8th
Tuesday, March 9th

I regret to sell this herd—the finest I ever owned, and Colorado people know that I have owned some good ones; but I hope my loss will be the means of starting a dozen new breeders with the right type of cattle. Buy one good cow, even if she costs you more than four of five poor ones. It is the good ones that bring the money. It is easier to sell a cow for $1,000 if she is worth it, than to sell an ordinary cow for $250; and their increase will sell in proportion.

There is not a poor cow in this herd.

I hope you will keep every cow of this herd in Colorado—by all means don't let this herd leave the state.

FARM EQUIPMENT Horses, Automobiles, 200 Tons of Alfalfa, and everything on the farm must be sold.

Send for Catalog. **M. E. PENROSE, Owner, Windsor Farm, E. 38th Ave. & Xenia, Denver**

PUBLIC SALE
75 Head
Registered and High Grade
Holsteins

WILL BE OFFERED AT PUBLIC AUCTION

Tuesday, March 2, at Sedalia, Colo.

At the Oakland Holstein Dairy Ranch

Our offerings include Morena Blanche, who has a record of 16.73 lbs. butter from 425.5 lbs. of milk; Morena Blanche 2nd; Evelyn Korndyke Colantha DeKol; Oak Park Gewina Watson; Rocky Mountain Zulu Chief, aged 20 months, whose sire was a worthy son of King of the Pontiacs, his dam a big producer with year's average test of 4.4 per cent; 4 bull calves, whose dams will be tested prior to sale.

We Also Offer Our Three Year Old Herd Sire

Oakes Home Farm Espret, 215614

This great sire's dam made 36.35 lbs. of butter from 619.9 lbs. of milk in seven days. The dam of his sire's sire made 44.74 lbs. of butter from 926.8 lbs. of milk in seven days.

25 head high grade young cows, and 40 head female yearlings and calves will sell.

Our heifers give 30 to 40 lbs. milk a day, and the mature cows from 40 to 70 lbs. a day.

We Have Used Registered Bulls with A. R. O. Backing for 13 Years

Don't forget the date, March 2nd. Terms cash, unless otherwise arranged with owner.

We Will Look for You Sale Day
Free Lunch at Noon

For further information, write

C. W. CURTIS & SONS, Owners, Sedalia, Colo.

William Upp Sells

40 Head Big Type Poland China Hogs at 40 Head

PUBLIC AUCTION

March 10, Deer Trail, Colo.,

Six Tried Sows **Six Spring Boars**
16 Spring Gilts **12 Fall Boars and Gilts**

SALE STARTS PROMPTLY AT 1 P. M.

This offering is worthy of the attention of all good breeders and farmers. The consignment is mostly of my own breeding and has been well spoken of by all good judges of hogs who have seen them. Sired by

Big Jumbo, Missouri Prince, Cottonwood King

The sires that get size and bone, and are great producers of the easy feeding, early maturing kind.

A Pig by Them Will Be a Valuable Investment

Catalogues sent free upon request. Free transportation to and from the sale for all persons arriving on trains.

COL. H. C. JENNINGS, AUCTIONEER, Kenmark Hotel, Denver, Colo.

First National Bank, Clerk,
Deer Trail, Colorado.

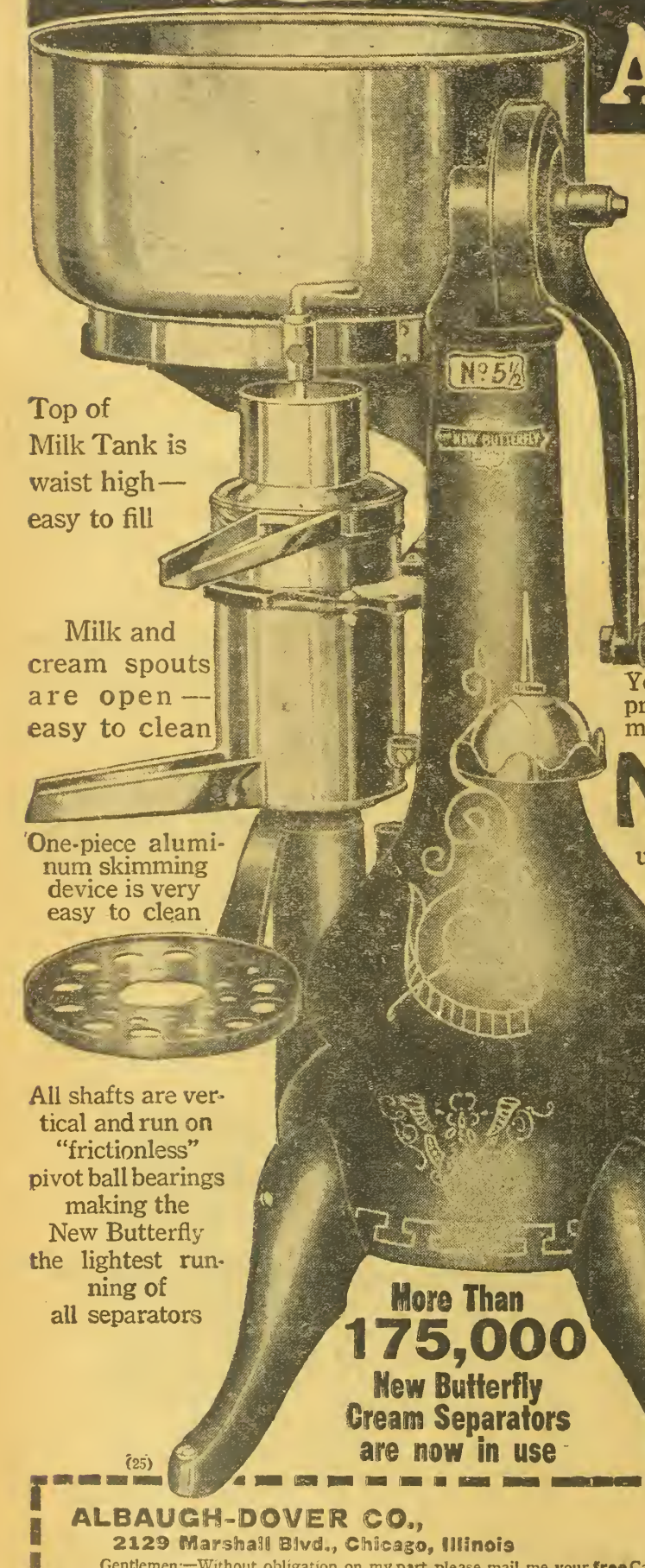
William Upp, Owner

ONLY $2 DOWN

A Year to Pay

Think of it! You can now get any size of the New Butterfly Cream Separator you need direct from our factory for only $2 down and on a plan whereby it will earn its own cost and more **before you pay.** You won't feel the cost at all. Our low prices will surprise you. For example:

Made $61.39 More from Same Cows
"We made $78.61 worth of butter before we had the machine and in the same length of time we made with the Butterfly Separator $140.00 worth of butter from the same number of cows." THOS. S. KERMOSKY, Point Aux Pins, Mich.



Top of Milk Tank is waist high—easy to fill

Milk and cream spouts are open—easy to clean

One-piece aluminum skimming device is very easy to clean

All shafts are vertical and run on "frictionless" pivot ball bearings making the New Butterfly the lightest running of all separators

More Than 175,000 New Butterfly Cream Separators are now in use

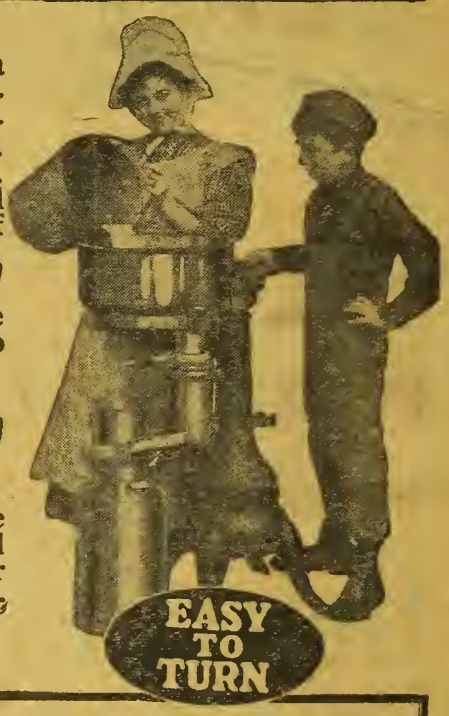
$38 buys the No. 2½ Junior, a light running, easy cleaning, close skimming, durable, guaranteed separator. Skims 120 quarts per hour. You pay only $2 down and balance on easy terms of

Only $3 a Month

You have no interest to pay. No extras. The prices we quote include everything. We also make four larger sizes of the

New Butterfly

up to our big 800 lb. capacity machine shown here—all sold at similar low prices and on our liberal terms of only $2 down and more than a year to pay. Every machine guaranteed a lifetime against defects in materials and workmanship.



Twelve-Year-Old Child Runs It
"We would not do without our Butterfly Separator or exchange it for all the machines we have seen. Our little girl, 12 years old, runs it like a clock!" MRS. P. E. RUDE, Ashland, Wis.

30 Days' Trial

You can have 30 days' trial on your own farm and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it alongside of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your $2 deposit and pay the freight charges both ways.

Catalog Folder—FREE

Why not get one of these big labor-saving, money-making machines while you have the opportunity to do so on this liberal self-earning plan? Let us send you our big, new, illustrated catalog folder showing all the machines we make and quoting lowest factory prices and easy payment terms. We will also mail you a book of letters from owners telling how the New Butterfly is helping them to make as high as $100 a year extra profit from cows. Sending coupon does not obligate you in any way. Write today.

Simplest, Easiest to Clean
"My son took a course in agriculture at Cape Girardeau and he worked with a dozen or more makes of separators, and he said this was the most simple and easier cleaned machine than any of them." J. B. FINLEY, Oran, Mo.

(25)

ALBAUGH-DOVER CO.,
2129 Marshall Blvd., Chicago, Illinois

Gentlemen:—Without obligation on my part, please mail me your **free** Catalog Folder and full particulars regarding your special easy payment offer on the New Butterfly Cream Separator.

I keep.....cows.

Name.....

P. O.....

State..... R. F. D.....

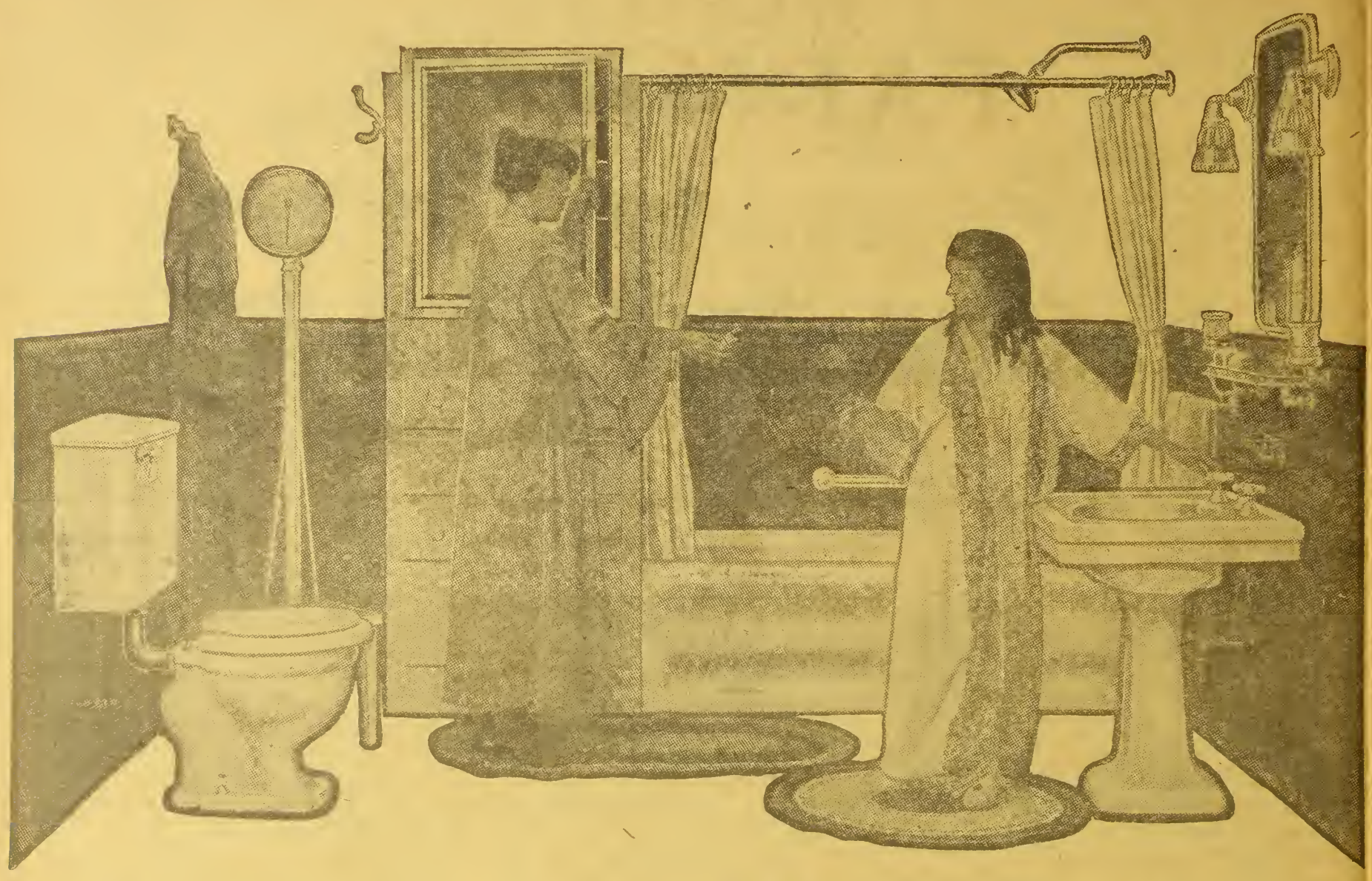
ALBAUGH-DOVER CO.
MANUFACTURERS
2129 Marshall Blvd. CHICAGO

IN
UNIVERSITY OF ILLINOIS LIBRARY
MAR 19 1920

WESTERN Farm Life

Vol. XXII. *Denver, Colorado, March 1, 1920.* *Semi-Monthly*

HIS FIRST SWEETHEART.



Enjoy the Comforts of *Modern* Plumbing

EVERY farm home should have good plumbing. The purchase of plumbing is an important matter, one that has to be met but once or twice in a lifetime. You want to be sure of satisfactory service every day in the year, and for many years. Study the question carefully and make your purchase deliberately and with the intention of securing full value, both in quality and long service.

Plumbing has been reduced to a science. The sizes and dimensions of pipe, fixtures and devices have been figured with precision. To learn the plumbing trade requires about four years. Drawings and diagrams of installations which look very simple on paper are almost impossible of execution in the hands of inexperienced persons.

Get in touch with a Contracting Plumber in your vicinity. Let him solve your problem.

Write for our color printed catalogue, "Standard" Plumbing Fixtures for the Farm." It illustrates all types of fixtures.

Standard Sanitary Mfg. Co., Pittsburgh

"Standard" PLUMBING FIXTURES

"Standard" Showrooms and Branch Houses

*NEW YORK	35 W. 31ST	*CLEVELAND	4409 EUCLID	*ERIE	130 W. TWELFTH	DALLAS	1200 JACKSON
BOSTON STA. 9	186 DEVONSHIRE	CINCINNATI	638 WALNUT	*ALTOONA	918 11TH	SAN ANTONIO	212 LOSOYA
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Kansas Professor Blots Out Milking Shorthorns

DUAL PURPOSE BREEDERS REFUTE STATEMENTS OF EXPERT.

ALVIN T. STEINEL.

"Neither is there any such thing as a milking type of Shorthorn."—Dr. C. W. McCampbell, Professor of Animal Husbandry, Kansas State Agricultural College.

THIS quotation from a letter written December 19, 1919, by Dr. McCampbell to Robert Chrismer, a farmer at Yuma, Colo., is the occasion for the present article, wherein the Kansas authority on animal breeding is shown to be mistaken. One hesitates to call it a mistake, because it is so evidently an intentional statement of what Dr. McCampbell believes to be a fact.

Mr. Chrismer wrote him for advice, as he contemplates engaging in the raising of Milking Shorthorn cattle. On receiving the letter, which appears in full below, Mr. Chrismer wrote Western Farm Life, asking whether Dr. McCampbell had advised him correctly and desiring our views on the subject. This is said in justice to Mr. Chrismer, who had no intention of stirring up a controversy, the responsibility for this discussion resting on us.

Here is Dr. McCampbell's letter in answer to Mr. Chrismer's questions which related to Red Polled cows and Milking Shorthorns:

Replying to your inquiry of recent date, permit me to say that Red Polled cows are neither dairy cows or beef cows. For this reason I cannot see that they have very much importance in the livestock industry.

Neither is there any such thing as a milking type of Shorthorn. There are certain long-legged, narnow-backed, peak-ended Shorthorn cattle that some persons choose to call "Milking Shorthorns,' 'but as a matter of fact it is only evidence of their inferior type of conformation.

Milking ability seems to be an inherent characteristic of Shorthorn cows of splendid beef type. For instance, we have our experimental herd of Shorthorn cows which consists almost entirely of short-legged, deep-backed, deep-bodied and thick-fleshed cows that are winning in the beef cattle show ring and they are producing from 8,000 to 11,000 pounds of milk per year.

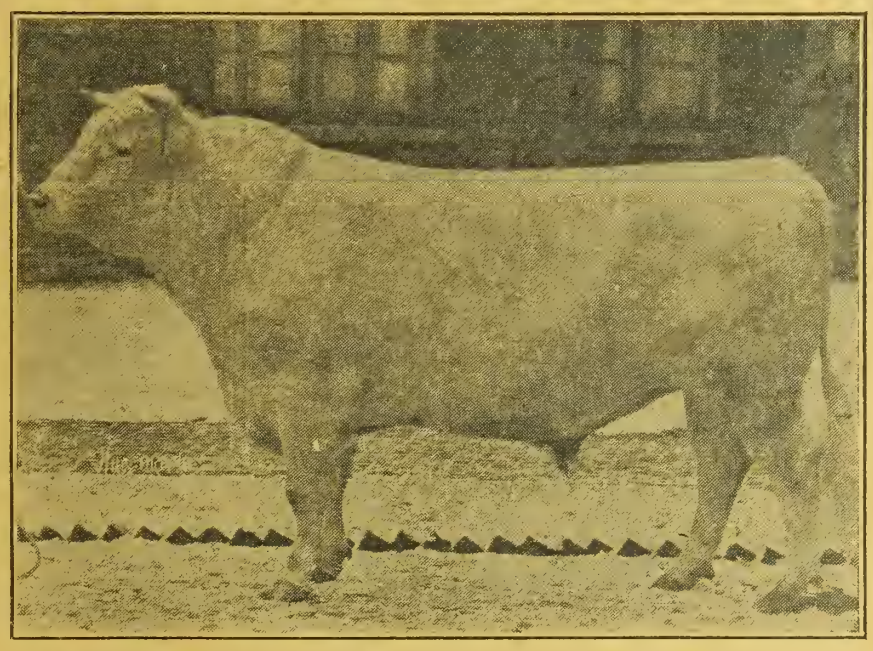
Purebred cows and bulls of this type of breeding and of assured milking strain, would cost from $700 to $2,000 each. At the present time we have no surplus for sale.

If you are interested in our next year's bull crop I would suggest that you get in touch with us at an early date, as there is a great demand for the surplus from this herd.—C. W. McCampbell, Professor of Animal Husbandry.

This letter was submitted to several authorities on Milking Shorthorns, among them Roy A. Cook of Independence, Iowa, Secretary of the American Milking Shorthorn Association; Prof. George E. Morton, head of the Animal Husbandry Department of Colorado Agricultural College, and others. The replies are worth careful reading.

There is some divergence regarding type, but the answers agree that Dr. McCampbell is wrong when he makes the statement quoted at the outset of this article. He is so obviously mistaken that it seems almost superfluous to point out his error, but the necessity arises from the fact that men who qualify as experts in animal husbandry are depended upon by farmers for advice and they should weigh their words. If Dr. McCampbell is right, then Shorthorn history goes for naught; then thousands of British farmers have been following an imaginary game in breeding dual purpose cattle; then the New Zealand farmers are fooling themselves in producing beef and milk on their farms; then the American Shorthorn Breeders' Association is wrong in its attitude toward the Milking Shorthorns and its advocacy of the dual purpose in the breed papers; then Alvin H. Saunders, America's far-sighted historian of the breeds, is inaccurate in his records and unsound in his prophecies. One is moved to wonder why Dr. McCampbell has ignored conditions and facts to echo a statement which used to be quite common among the followers of the special dairy breeds, but is heard now only from those who are either purposely closing their eyes to the re-establishment of the dual purpose type, or who have failed to keep step with this progress.

Dr. McCampbell, like others similarly placed in authority at the head of livestock work in an agricultural college, must deal with all the leading breeds of cattle. He may be a specialist in one or the other, but his public work is on a broad basis and he thus has had opportunity to learn both sides of the question in milk and beef development.



Queenston Duke, a Grand Champion and Typical Milking Shorthorn Bull.

On the other hand is Roy A. Cook, a specialist in Milking Shorthorns, for 10 years or more a breeder, an official judge of the dual purpose type and the Association secretary. Mr. Cook therefore speaks as an insider in the following statement:

Secretary R. A. Cook's Statement.

"Professor McCampbell of the Animal Husbandry Department at Manhattan, Kans., tells your Colorado inquirer there is no milking type of Shorthorn, that the beef type is the only type, that the cows in his herd, short-legged, deep-backed, deep-bodied, thick-fleshed, are winning in the show ring and producing between 8,000 and 11,000 pounds of milk in a year, and are of assured milking strain. You ask whether Milking Shorthorn breeders agree with this, or whether they are developing a dual purpose type that has both beef and milk characteristics.

"The Kansas cows are good milking cows because they have in their inheritance some good milking ancestors, either close up, or remotely at a time when all Shorthorns were expected to milk well as well as to beef well. Prof. McCampbell must refer to some county fair when he says the cows are winning in the show ring, because they couldn't hope to win in either the beef ring or the milking ring at any fairly well contested show. The cows are, for the main, a good beef type, they milk well, and their milk records makes them Milking Shorthorns of a sort.

"The beef characteristics so predominate in their individuality that they do not have a Milking Shorthorn type, and their ability to transmit their milking ability may well be doubted. Certainly no well-informed Milking Shorthorn breeder would try out their ability to transmit milking ability by using a bull from one of them, because a bull of that sort would, in a herd of fairly good udders, show up in his heifers a wonderful lot of misshapen udders. Milking Shorthorn type requires good udders, flexible udders, well hung, well-quartered, not cut up, with regularly placed teats and with teats neither too long, too large, too short or too small. All for the very utilitarian reason that with hired help we can't get the amount of milk in the pail from a cow with a bad udder that we can with a cow with a good udder.

"Along with the requirements for an udder, Milking Shorthorn type requires smoothness, looseness of skin, and absence of patches. Gobs of fat have no high value at the block. A cow has to have a loose skin and refinement if she is going to produce in general a good amount of milk. Some of the Kansas cows have a certain amount of refinement about the head, others are coarse there, and others are coarse in the brisket. These cows were selected from around twenty different herds because of their ability to raise prize-winning steers. After being got together it was found they all milked well, so they were hand-milked and given official records. They are Shorthorn cows of a beef type that milk well. And while they are, on account of their milk records, Milking Shorthorns, they lean appreciably to the beef type, and it is certainly novel that Prof. McCampbell should think that because he has beef cows that milk well that he has the only name-blown-on-the-bottle type of Milking Shorthorns. He has Milking Shorthorns, but not Shorthorns of Milking type, on account of their deficiencies in their udders, on account of the coarseness in head, neck and brisket in different cows He has not even a uniform type among his cows, so I do not see that he can be said to have cornered any type, let alone having the only type for a Milking Shorthorn.

"Prof. McCampbell also says that there are 'long-legged, narrow-backed peaked ended Shorthorn cattle that some people choose to call Milking Shorthorns.' We prefer to call a Shorthorn a Milking Shorthorn with reference to its possession of definite milking inheritance. If it has that, or if a cow makes a certain creditable milking record, we freely admit it to the charmed circle of Milking Shorthorns. Of course, a Milking Shorthorn is not as good a beef animal as one bred solely for beef. Amos Cruickshank's labors were not in vain. He built up a superior beef-alone Shorthorn. Neither is a Milking Shorthorn as good a milk or butterfat producer as a dairy cow. And I concede that a Milking Shorthorn will not have quite as short legs on the whole as a beef Shorthorn, will not be quite as wide-backed or quite as full-ended as a beef Shorthorn. But among Milking Shorthorns there is quite as much of a premium placed on fairly short legs, wide backs and full ends as there is among beef Shorthorns. And a long-legged, narrow-backed, peaked-ended Milking Shorthorn is no more typical of Milking Shorthorn type than is a cow with a mean, cut-up, long-titted or small-titted, or short-titted udder typical of Milking Shorthorn type.

"Milking Shorthorn breeders desire a good amount of milk and a good beef form. If they had the Manhattan cows, they would use a bull of good Milking Shorthorn type on them, because they would want to smooth them up and put better udders on them. They do use such cows, mating them with such bulls, and a very acceptable type of Milking Shorthorn results. For instance, the grand champion, Queenston Duke, whose picture I am sending you herewith, was by a bull of definite Milking Shorthorn type and inheritance, himself a grand champion. His dam was a cow of the type of the Manhattan cows somewhat, sired by the Canadian beef winner, Queenston Montallis.

"If there be no such thing as Milking Shorthorn type, I would like to know what there is to prevent a beef bull winning in the Milking Shorthorn classes, where entrance to them is without any requirement of a certain record in the dam. At the Western Livestock Show in Denver, this year, the bars were down. Any Shorthorn bull was let in at the gate, and was entitled to a fair consideration on his individuality as he stood in the ring. A bull was even brought over from the beef barn for one class. The possession of Milking Shorthorn type is the only indication in a bull that he is a Milking Shorthorn, as he stands in the ring. He has the type because he has the definite Milking Shorthorn inheritance. There were a number of bulls in the different classes that were without Milking Shorthorn inheritance. And yet, every bull that won first in each one of the classes had a definite Milking Shorthorn inheritance. Because he had it, he had the type that entitled him to first place.

"To my way of thinking, the Manhattan cows are just what every beef herd of Shorthorns should be. They should be good milkers to raise good calves. Nurse cows hold no very strong economic position nowadays, since feed

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Use the Movies for Telling the Farmer's Story

COLORADO RANCH WOMAN'S PLAN FOR EDUCATING THE CONSUMER.

HELEN HARBALL.

NOT long ago, when reading an article on "Education for a City Man," it concluded with this statement: "There should be some way of conducting a campaign of education, and I feel that this will be about the biggest and best thing a national farm organization can do."

To many it seems that this matter of educating the consumer to a better realization of what it costs in time and labor and money to produce food is the next big thing for some farm organization to do. We all know that the United States is passing through possibly the most critical period of her history, a period of unrest, industrial strife, suspicion and jealousy unequaled in the past The high cost of living has drawn a front seat in the middle of the platform, and we who are interested in the drama of life are aware of its presence wherever we look, whether it is for food, or clothing, coal or lumber, machinery, milk or rents; it is the same old story, oft repeated.

The dweller in the city and town, commonly regarded as the consumer, eyes the farmer, who is usually thought of as the producer, with feelings of suspicion and distrust, and being in no position to draw correct conclusions, either envies him his lucrative pastime, or condemns him as a profiteer. To quite a large extent the farmers of our country may justly shoulder the blame for a portion of this lack of appreciation of the true status of agriculture as an occupation. Perhaps someone harvests an exceptionally large crop of potatoes, yielding at the rate of 300 or 400 bushels per acre (possibly not over an acre or two yielding at that rate, however). Or, some noted breeder has a cow whose calf brings $25,000 and the cow herself gives 30,000 pounds of milk in a year. Or a specialist in the fruit belt has an apple tree that bore 60 bushels of apples in a given season, with apples selling at "three for a quarter on a limited train," and another has cabbage that yielded 20 or 25 tons per acre, with cabbage retailing at 5 cents or better per pound.

Very naturally the story of that record not only gets into the agricultural papers, but, worse than that, into the daily papers quite often, and without further explanation Mr. Consumer of course immediately draws an incorrect conclusion that this is the way potatoes, cows, apples and cabbage yield for the poor, down-trodden farmer, and he at once casts about for other fields wherein to sow his seeds of sympathy.

The average yields of these and other commodities never, or rarely, find their way into these same columns, because they are so common. In fact, they are published only in census reports, which, of course, no one ever reads, while the utter failures which we sometimes have in spite of the best methods owing to weather conditions such as summer drouths, early frosts, etc., over which we have no control, are hushed up and spoken of only in whispers, if at all. Consequently is it any wonder that there is an ever-widening chasm of misunderstanding between these two classes, the consumer and the producer?

In this same article on "Educating the City Man," the question of how can this gulf be bridged is put before us. Surely here is a field for thought. For a great many years our government, both state and federal, has very wisely done all in its power to assist and educate the producer to the end that he grow larger and better crops of potatoes, better cows of greater production, choicer fruit more intelligently packed, and hardier cabbage of the right size and type, and vast sums have been expended to accomplish this purpose. Only recently has much else been attempted. The marketing end is now receiving some attention; it needs more.

But there is one more field which is deserving of the thought and skill of our best minds; the education of the consumer along the lines of what it costs to produce food. How can this be accomplished? Surely a big job for both our government and a national farm organization—the national Federation of Farm Bureaus, for instance. Our most able speakers might attempt to tell the dweller of the flat, and others, the story of farm life, its failures as well as its successes.

Our most brilliant writers might contribute to the press, or edit bulletins and books. But the farmer would have empty seats before him, and the latter could never produce a "best seller." The public's appetite has developed along other lines; they devour far more eagerly murder trials, divorce cases, political wrangles and thrillers by land, sea and air, while such subjects as agriculture, horticulture and animal husbandry get not even a passing attention.

How then can we reach them? At a safe estimate 95 per cent of the consuming class are more or less regular patrons of the most popular resort of hour—the "movie." Why not use a portion of the appropriations for agricultural research, experimentation and extension in securing films from real life, from real farms, with real farmers doing real things? Show the process of producing food, the years required to produce a barrel of apples, from the nursery tree on, including the planting, cultivation, pruning, spraying, thinning, picking, packing and marketing. Show the time and skill required to breed, grow and develop a productive, profitable dairy cow, the labor and waiting to grow a bushel of wheat, the pains taken to prepare both the soil and seed, and then treat, plant, cultivate, spray and harvest a crop of potatoes, and then occasionally to fail in spite of all, from causes over which we have no control.

If some of these scenes from practical farm life could be placed on the movie screen, between the acts, the public would become interested, and before they knew it instructed in spite of themselves. The trouble is that the rural scenes of the past, as thrown upon the screen, up to date, have represented one of two extremes—either the millionaire city dweller whose farm is his diversion or toy, not his home; or the "hayseed" type which has nearly passed into oblivion. With his high leather boots in which his sockless feet and trouser legs are both thrust, a broad-brimmed straw hat from which a long lock of unkempt hair is protruding, and with suspenders in evidence, he uses the vernacular of the past as he swaps yarns around the stove in the general store and post-office of the small village.

The real representative farmer of the day, an alert, progressive, fairly well-educated man, is a minus quantity on the movie screen, and in pictures of rural life in our current magazines and cartoons. The call is loud for a better realization, a closer understanding, of what it means to supply our markets with a variety of good food in the raw state, at a price that covers cost of production, plus a reasonable profit.

Helen Harball.

The Lady of Cedar View.

WE FEEL sure that our women readers would like to become better acquainted with The Lady of Cedar View, who has promised to write for Western Farm Life occasionally. Eastern magazines have been getting the benefit of her sound views on agricultural topics, but being a resident of Colorado and a ranch woman, she has decided to let us choose from her manuscripts such as will prove helpful and interesting to the people of these western states. Therefore we asked her to send us a picture and some personal details, and here they are, given in her own words:

For two years I have been writing for an eastern farm paper, and have had so much real enjoyment out of it that I want to know my own people, the people of Colorado and nearby states. Is this not a good way to become acquainted?

Eleven years ago, my father, mother, two brothers and I arrived in this part of the Arkansas valley. Having come from Tennessee, these vast western plains looked very bare to us. However, we liked the great expanse of pure air and the bright, warm sunshine. My father being a health seeker, the dry air was just what he needed, so we settled down on a 160-acre farm.

During this time I have seen our little town grow into a prosperous city; I have seen the dairy business start and grow into a great industry; I have seen the vast expanse of plain lands taken up by homeseekers; I have seen men start with a few purebred Hereford cattle, who through a few years of patient waiting, now have hundreds of them.

Now, I know the good uses of the plain lands and have learned to love them. In fact, I have taken up a 640-acre government claim and expect to move on it in March. Having a little start in cattle, I expect to have a real ranch some day. The name of my claim is "Cedar View Ranch."—Helen Harball.

Starting Spring Operations on the Dry Land Farm

TIMELY HINTS FROM PARSONS THAT WILL ALSO HELP IRRIGATOR.

E. R. PARSONS.

AS SOON as the frost is out of the ground plowing begins and will continue for several months if conditions are right; but if no moisture falls, and a spring drouth is not uncommon, many of the farmers stop their work. It is too dry to plow! The trouble is they allowed the moisture to get away from them. The frost leaves the ground full of cracks, and the evaporaton of moisture through these is very rapid. The correct idea is to conserve this moisture in the top foot so as to be able to plow right along; but the farmer will often say "I haven't time to disk at this season, I want to tear up all the ground as quickly as I can and get the crops in."

The man who says this misses the main point. As soon as the top two inches are thawed out the disk can be started, and sometimes the whole farm worked over before the ground is thawed out sufficiently for plowing. Once the land containing an average amount of winter precipitation is thoroughly mulched there is no hurry about the plowing; the moisture will stay in for months.

Fall plowing needs working over again in the spring for some crops more than others.

Spring grain does well on fall plowed land; nothing much is needed but disking or harrowing and planting.

With late crops it is different. Corn and potatoes especially, need a deep mellow worked up seed-bed, and if during the winter and early spring the ground has become at all packed, it should be plowed again but not necessarily as deep as the first plowing. If, however, the land for corn has been plowed deeply in the fall sufficient friability may be obtained by seeding with a lister across the plowing. Another way not quite so good as regards soil culture, but better for moisture conservation in a windy country, is to list in the fall, and then cut out the middles by seeding with the lister in the spring.

The earliest plowing in the spring is always the best, because there is more moisture in the ground which makes it work better, and the weather is cool and less of it is lost. To save moisture and to obtain the best tilth, the most important factor is to follow the plow with the harrow. Then working with a single team, the horses should be changed to the harrow every few hours in hot weather, and all the land plowed in the morning should be harrowed before noon, and all that plowed in the afternoon harrowed before night. When the farmer relies on spring plowing for such crops as corn, milo, Sudan grass, etc., it will be found that the earlier the work is done the better the crop will be. March plowing will make more corn than April plowing and much more than May plowing. The deeper the plowing the more time must be allowed for it to settle or pack. Land plowed in March may be ten inches deep, but when plowed for immediate planting eight inches will do as well as ten or twelve. The best results are obtained from spring plowing by doing it deep and early, and harrowing and disking once in a while until planting time in May or June.

The same may be said of summer fallow for winter wheat. In an extensive series of experiments conducted for a number of years in the dry farming country it was found that the early plowing gave a yield of about five bushels per acre over and above that of the June plowing. They are now trying out the idea of plowing as deeply as possible as soon as the crop is harvested, for planting the August or September of the following year. Some have done this and obtained extra fine yields; but whether this will hold in all seasons can only be proved by a series of properly conducted experiments.

Small grain will grow in land that is too solid and packed to raise corn and sorghum The writer knew a man who plowed only once in three years for his oats. He raised them every year for his horses, but compared to those grown on deep fall plowed land, all he had was half crops.

Planting small grain on spring plowing is not recommended, for in dry years it always fails to mature a fair crop. Late plowing in June is apt to be dry and over aerated, and it is almost impossible to pack it so that it will raise much of a crop the same season. It will make a fairly good seedbed for winter wheat or rye, but not so good as the earlier plowing.

Barley a Drouth Resister.

For spring planting barley is highly recommended both for hay and grain. The dry farmers of California raise more barley than anything else. It is the standard crop and when the season is too dry for grain, it is cut and baled for hay, fetching around $20 a ton. For drouth resistance barley heads all the small grain crops. The hard Russian wheats come next and oats last.

In raising spring grain on the dry farm it has always been a much debated question as to the time to plant. Some plant in March, some as late as May. In New Mexico and the other southern dry farming states, where the summer rains are depended upon to make the crops, late planting is the rule; but there is a belt north from central Colorado and adjacent to the mountains where the spring rains and soft snows are usually plentiful and

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Some Suggestions for Next Fall's County Fairs

LESSONS FROM MISTAKES OF LAST YEAR SHOULD BE HEEDED NOW.

E. J. MAYNARD.

Grand Champion Percheron Stallion Owned by Durango Horse Breeders Association.

In the accompanying article Mr. Maynard of the Animal Husbandry Department at Fort Collins makes some timely suggestions that need attention from the various purebred breeders' associations of Colorado and neighboring states. All that he says regarding the poor facilities provided by some of the county fair associations is true. Representatives of Western Farm Life visited many of the county fairs last fall and in only a few cases did they find conditions for exhibiting livestock what they should have been. We realize that the fairs are just making a start in handling purebred stock and that lack of funds has been the principal reason for poor showing facilities. However, that excuse should not be allowed to stand in the way next fall, because the farmers are realizing the benefits that come from a well conducted county or community exhibition. If the breeders' associations will insist on better facilities they can obtain them from the fair associations, but they should not wait until midsummer before taking action. Right now is the time to get busy. Read Mr. Maynard's suggestions and then act on them.—Editor.

THE real backbone of the County Fair is going to be its display of purebred livestock." This statement held added significance last fall at Colorado's county fairs, where registered individuals and herds were brought together in larger numbers than ever before. In some cases, because of their numbers, these animals had to be penned up in yards with no shelter from the sun, or housed in dark sheds and barns, the remnants of the heyday of fast horses.

In the face of all adverse conditions, however, the purebred livestock attracted larger crowds than ever before, and admiration was plainly shown for the skillful work which had been done in fitting it for show. The wonderful individuality of the animals time and again called forth applause even from those who were quite unfamiliar with type and conformation requirements.

The possibilities lying in the proper display of these purebred animals, many of them worthy of being exhibited at the large shows, appealed to the farmer and fair board alike this year as never before, and in a number of cases plans are already on foot to build modern stock barns and pavilions for the show stock next fall. Without a doubt, now is the time to make arrangements for definite action on these necessary buildings, for they will be an asset to the breeder and county fair board alike.

With a little forethought now on the part of the fair associations the showing of this livestock and the placing of ribbons can be made one of the most interesting, as well as educational and useful features of the next county fair. At the same time, by furthering this end of the game which has an economic significance to every breeder in the country, the fair association will materially strengthen its own organization.

First—A show ring or pavilion should be constructed in which to exhibit the classes to proper advantage. The ground should be perfectly level in order to help demonstrate the real conformation of the animal. This arena is becoming an absolute necessity at the county fair owing to the "tight" classes which are being met with more and more. It is almost impossible to properly place two animals of nearly equal merit when one is standing with three feet in a gutter and the other is nervously dodging motor vehicles whizzing by.

There should be bleachers or seats arranged around this arena to accommodate the crowd, which now trips over tent ropes, gets between the judge and the animals in the ring, and otherwise demonstrates its intense interest in the operations.

Picture in your mind a class of aged Hereford bulls, individuality, life and vigor manifest in their every movement, perfectly fitted for show, spotlessly clean, each hair "curled" or "waved" into place. Now picture these bulls being shown by competent herdsmen who are striving in every way to bring out their excellent points by properly placing them on a level arena of close clipped turf. Imagine, if you can, the interested spectators seated in tiers conveniently placed on all sides and the judge lining up the animals, examining each point of conformation to select the most perfect type. Nowhere else can such a significant lesson in up-to-date animal breeding be taught, and with such a setting the judge is spurred to his best efforts in putting the lesson across.

There was not a feature at the county fairs this year, poor as housing conditions were, which attracted a more earnest or interested group of men. The fair association should not fail to see the possibilities lying in a good pavilion of this sort.

Second—The classification of stock should be patterned more closely after

Herbert F. (Boss) Means of Saguache, Colorado, and One of His String of Winners.

that used at the large shows. In fact, it should be the same. The county fair is, first of all, educational and its object should be to familiarize its breeders with the customs and ruling of the big shows. In this way they are being prepared along all lines leading to the successful exhibiting of animals in close competition. Although the proper classification may seem difficult at first, a thorough knowledge of it is absolutely necessary to every breeder. "Best stallion" means nothing today, as far as advertising value is concerned, and classes including all "Best Calves Under One Year" are mighty hard to judge, and do not mean anything when they are placed. The Animal Husbandry Department of the State Agricultural College will furnish upon application a correct classification for livestock, and the county fair associations should avail themselves of this data.

It was the writer's privilege to judge livestock this year at several of the fairs in the state, and the class of stock was excellent and the enthusiasm shown by the breeders was fine. They were keen, live, in the game and coming strong, and there is every indication that the work of the livestock judge will become more difficult each year. It is partly with this fact in mind that the above suggestions are made.

Eldredge Philosophizes on Scrub Dairy Cattle

LESSONS LEARNED FROM HIS EARLY EXPERIENCES WITH A HERD.

BEN R. ELDREDGE, Dairy Field Agent U. S. D. A. for Utah.

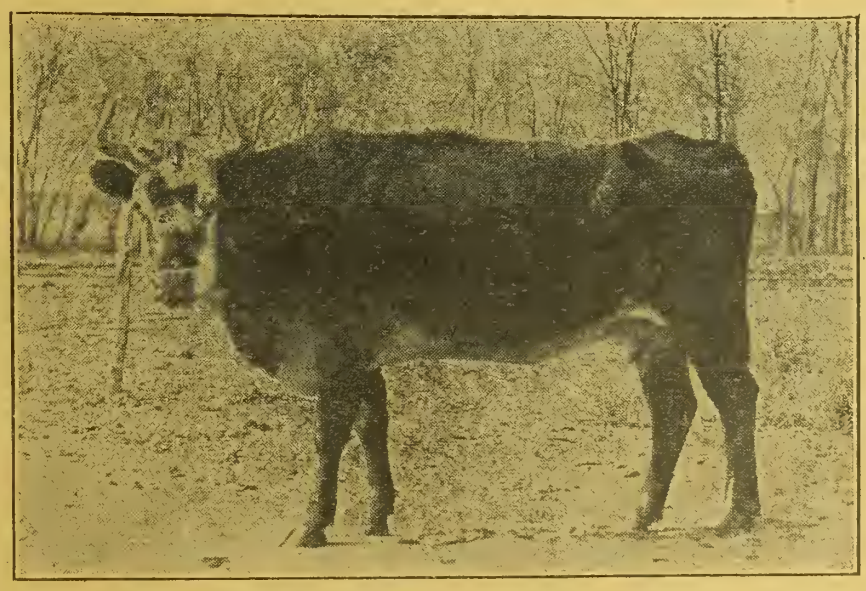
I one time, was head of a dairy.—Don't get that mixed up here. I don't want the impression to get out that I was head of the herd—and, with the assistance of my wife and two boys, milked about sixty cows. That is, we milked them as much as they would let us, which, as I now remember it wasn't very much. Yet, some were kinder than others, and let us milk them quite a good deal. There was old Dinah, who let my wife milk her to quite an extent, about 11,000 pounds per annum; then there was Maggie, who was kind and liberal, and Becky, who had a generous heart in her, with a good udder and good teats on the outside. Then there was old Centerville that I bought in Davis county. The only time she was kind was when I went to feed her; then I could get right up to her easy and anyone would think she was a nice, kind cow, but at milking time she was a "scrub," for she was just about worthless nine months in the year, which is a big majority of the time.

Beauty was a good-looking scrub. She was really the finest looking cow in the herd in many ways. I was fooled on her for a long time. She was such a good looker I thought she just naturally had to be a good dairy cow. During four years she hung around an average of 5,500 pounds of milk, testing 3.6 per cent butterfat. Only once she got over 6,000 pounds per annum, which, after my experience had ripened a little, became our "dead line" (6,000 pounds of milk per annum, testing 4 per cent butterfat or that equivalent I found necessary to make me safe in all items of expense in keeping a cow). Beauty was well named, she was good to look at. But that beautiful udder was fleshy and very easily inflamed. She had a beautiful skin, but as I have since learned beauty is only skin deep.

She was poorly bred, though from purebred sire and highgrade dam. Her sire was an intensely beef-bred Shorthorn. Her dam a highgrade Holstein. The dominating traits of each parent conflicted in the daughter, a failure resulted, and as a dairy cow Beauty was a scrub. To the ordinary observer she looked to be a 12,000 pound milch cow, with good feeding and careful attention during the four years she proved equal to less than half that. She was a scrub. The scales and Babcock test judged and condemned her.

Then there was Tiny. I bought her of a man who recommended her highly as the biggest little cow he had ever seen. Tiny was small, but she looked young and I thought would grow, but when an old-timer who came around occasionally, looked at her teeth and pronounced her eleven years old, I gave up and took a lesson in dentition. She was a scrub but it really was not her fault, for I later learned she had been stunted in calfhood and starved until she was six years old. I did not know it so well then, but I have learned since that good breeding and good intentions in a cow will very seldom survive six years of starvation, and result in an animal very far from scrubdom (that word is not in the dictionary, but it ought to be).

Queen was a purebred scrub. She was what men call "bred in the purple," but there was a cog missed somewhere in her machinery and she never produced enough to justify retaining her in the herd. She was a good looker when dry, and that was most of the time, and when she was fresh she was so near dry that the line between fresh and dry was all mussed up—like the proposed line of a new railroad on a newspaper map. Queen was poorly sexed, a low producer and an inferior breeder, a real purebred scrub.



THIS IS WHAT ELDREDGE MEANS BY SCRUB.

Goatie, a Foundling who Adorns a Dairy Herd in Adams County, Colo. She Never Gives Milk. What Little She Has During Her Feeble Lactation Periods Has to be Taken from Her. Her Sire Was a Grade Hereford; Her Dam a Prairie Mongrel.

Well, another cow we had was Minne. She was a scrub from pure meanness. I raised her and as a young thing she was timid, but a calf showing many good points and some promise. Her mother, however, was just barely outside of scrubdom. Well, when Minnie was approaching a year old she was sent to a ranch for keeping until she was a little over two years old. She was "broke" at the ranch and came to the farm a confirmed kicker and notional milker. The trouble was she had a flighty disposition, inherited from her mother, which had been aggravated at the ranch by a scrub Collie dog, whose greatest accomplishment was nipping at the heel of every animal he passed on all occasions. The man who owned and tolerated that dog did the milking, and "broke" the heifer, which permanently fixed her as a scrub. In her case she inherited a tendency, the scrub dog and his owner developed the tendency and fixed the character that determined on which side of the line she would be found. She became a mean scrub, but largely through association. A year or two of careful handling might have made of her a fairly useful cow, but she was not worth that cost.

Now, there are scrub cows that are just naturally scrubs, bred that way, built that way, fed that way, owned that way, and the greatest scrub on earth is the human scrub that develops and perpetuates scrubism in every living thing he controls or dominates.

Plant Diseases Take Large Toll in Colorado

CROP LOSS AMOUNTS TO MILLIONS OF DOLLARS ANNUALLY.

J. G. LEACH, Plant Pathologist

IN THE Plant Disease Bulletin issued by the United States Department of Agriculture the following estimates of crop losses due to plant diseases are given for Colorado:

Wheat	1,225,000 bu.
Barley	84,000 bu.
Oats	739,000 bu.
Corn	329,000 bu.
Potatoes	1,643,000 bu.
Beans	94,000 bu.
Sugar beets	271,115 tons

These figures are no doubt surprising to many of us, but the sad fact remains and the losses are increasing every year.

Twenty-five or thirty years ago western farmers were troubled very little with plant diseases. This was because the west was a new country and only a few diseases had been brought in and these had not had time to gain a good foothold. Most of the serious plant diseases of this country were brought over from Europe and they have followed closely on the heels of man as he migrated westward. In 1898 in the Eleventh Annual Report of the Colorado Agricultural Experiment Station, Crandall states that "Colorado orchards have in past years been free from fungus diseases, but the diseases which have given the eastern growers trouble are gradually coming in." A good many diseases have made their appearance in Colorado since this was written. The dreaded apple scab which is so destructive in the east was found in Colorado for the first time two years ago. It has not yet proved serious, but as it becomes better established it can be expected to cause greater loss. Every fruit grower should be on the lookout for this disease.

Potatoes were grown for some time in Colorado before Fusarium Blight made its appearance. Within the past few years this disease has seriously crippled the potato industry in some sections of the state.

The success of peach growing in western Colorado is due largely to the absence of brown rot, the most destructive of peach diseases. It has been recently reported by the Bureau of Markets that a number of cars of peaches shipped from Colorado and inspected at Cincinnati showed the presence of brown rot. The accuracy of this report is not known, but a thorough survey of the peach growing section is going to be made next year to determine definitely whether or not the disease has gotten into the state. If it is found that it has, immediate measures to prevent its spread must be taken.

It is well to keep on the watch for any disease that might appear on your farm or orchard. The immediate suppression of a disease before it becomes established may mean the saving of thousands of dollars to an entire community. If you see any disease that you do not recognize or know how to control you should send specimens to your College of Agriculture for identification and directions for control.

Few people realize the extent of the loss caused by plant disease. The casual observer is often unaware of the presence of disease in his field, and when the crop is harvested he is at a loss to know just what was the cause of the low yield. Poor yields are many times blamed on some unavoidable weather conditions, when in reality they are due to the ravages of plant diseases.

What Causes Plant Diseases?

Every plant disease has a cause. Most plant diseases are caused by very small microscopic plants which live upon and draw all their food from the larger crop plants. These small microscopic plants live on the larger crop plants, just as the crop plants live on the soil in which we plant them. They live on the larger crop plants and draw food from them just as the common mistletoe lives on and draws its food from the tree on which it lives. A plant living upon another in this manner is known as a parasite. There are thousands of these parasites which live on our crop plants, sapping their vitality and greatly reducing the yield. Most of these parasites are so small that one of them alone cannot be seen without the aid of the microscope. But when they grow on a plant they reproduce so rapidly that great spots and splotches are formed that are easily recognized.

These parasites which cause plant diseases belong to two groups, the bacteria and the fungi. Bacteria are sometimes spoken of as germs or microbes. They are, however, very small plants, extremely simple in form and structure. They are indeed the smallest plants known, ranging in size from one fifty-thousandth to one ten-thousandth of an inch in diameter. They are usually oblong or rod shaped. Some forms of bacteria are able to swim about in water and it is these that cause some of the worst plant diseases.

Bacteria enter the plant through breathing pores or through bruises and injuries. After getting into the plant they live on the substance of the plant, either killing it or sapping its vitality. Fire blight of pears, stem blight of alfalfa, wilt of squashes and melons, black rot of cabbage and crown gall of fruit trees, are caused by such bacteria.

Fungi are somewhat larger than the bacteria and are made up of a fine branched thread-like body called a mycelium. The common bread mold is a fungus much like those that cause plant disease. The thread-like mycelium grows into the roots, stems and leaves of plants and brings about a diseased condition. Fungi reproduce by means of little round bodies called spores, which look very much like the seed of wheat or corn, except that they are very, very much smaller. These spores or "seed" of the fungus are produced in great numbers and are blown about by wind and rain to healthy plants where they sprout and grow into the plant, causing it to become diseased. The smut balls often seen on corn are made up of millions of small black fungous spores.

How to Control Plant Diseases.

There are four general methods of plant disease control: (1) the exclusion of a disease from a given area; (2) the eradication or destruction of a disease producing organism in a given area; (3) the protection of plants against disease producing organisms, and (4) the use of disease-resistant plants.

Many of the most injurious plant diseases occur only in restricted areas. Some of the most destructive diseases have not yet invaded the west. Every effort should be made to keep these diseases out of the west. Diseases may be brought into new localities by planting diseased seed or seed that carry the disease on their surface. The planting of seed of unknown origin should be avoided. Any seed that is likely to carry spores of disease producing organisms should be disinfected before planting.

Eradication measures are most applicable when exclusion measures have failed and new disease has been discovered before becoming widespread. If brown rot peaches should be discovered on the Western Slope before it becomes widely scattered the concerted efforts of the peach growers could very probably stamp it out. For this reason a close watch should be kept for this or any other new disease. Specimens of all suspicious cases should be sent to the College of Agriculture for identification.

The eradication of the common barberry which spreads the black stem rust of wheat is an example of eradication on a large scale, by the federal government. The success of this campaign depends upon the co-operation of every individual.

The old adage that "an ounce of prevention is worth a pound of cure" is extremely applicable to plant diseases. Plants that have once become affected with a disease can seldom be cured by treatment, as is the case with man and animals. Plants must be protected from infection by disease-producing organisms. The common means of protecting plants from the attacks of parasites are as follows:

1. Good cultural practices.
2. Crop sanitation.
3. Crop rotation.
4. Seed selection and seed treatment.
5. Spraying.

There are a large number of plant parasites which can attack plants only when they are in a weak condition. Since proper cultural methods tend to produce healthy vigorous plants, this alone is in some cases adequate protection.

Rotation an Effective Remedy.

Crop sanitation consists of removing or destroying diseased plants, or plant parts which are very common means for the spread of a disease.

Many disease producing organisms live from year to year in the soil, but only become sufficiently plentiful to injure the crop when the plant is grown for several years in succession on the same soil. If a system of crop rotation is adopted in which the susceptible crop is grown on the same soil not oftener than once in three or four years, the organism will die out, or at least will not develop in sufficient quantities to cause serious injury. Crop rotation involves almost no expense other than a little forethought and planning. The returns in disease-free crops pay for the trouble many times over, not to speak of the added gain in soil fertility.

Selection of clean seed and seed disinfection not only prevents the introduction of diseases to new localities, but it also acts as a protection to the resulting crop. The spores of many parasitic fungi are carried over on the seed and infect the young plant when it begins to grow. Disinfection with certain solutions of proper strength will kill the fungous spores without injuring the seed and the plants produced from such seed are usually free from disease. This is the best method for controlling the grain smuts and certain potato diseases.

There are other diseases, however, that grow into the seed and live over the winter inside of the seed. Ordinary seed treatment is not effective in such cases. For these diseases therefore the selection of disease free seed is the best mthod of control. Seed should be selected in the field from disease free plants because diseased seed cannot always be detected after harvest.

Objects of Spraying.

Spraying is one of the most common methods of plant disease control. Spraying is expensive and is profitable only when the disease is very prevalent or is liable to become prevalent. The object of spraying is to keep the surface of the plant covered with a substance that will kill any spores that fall upon it and at the same time will not injure the plant. The spray must be applied before the spores appear, for if the spore once gains entrance to the plant, spraying is useless. Sprays should be applied before rains rather than afterward, because the spores require water for germination and it is at this time that protection is needed.

The efficacy of spraying depends largely upon proper preparation and application of the spray. A spray improperly prepared may not only fail to protect the plant, but it may also seriously injure the fruit or foliage. The greatest care should be taken in following directions for mixing and applying both sprays and seed treatment solutions.

The use of disease-resistant crops is yet in the experimental stage. The production of disease-resistant varieties of crops is work that must be done by the experiment stations. In some of the eastern states where this line of work has received financial encouragement some notable results have been obtained. Wilt resistant varieties of flax, cabbage, cotton, cowpea, watermelon and tomato have been produced and seed of these varieties have been grown and distributed to the farmer by the experiment stations. In time the importance of this work will be recognized in other states and men will be put to work to produce disease-resistant crops suitable to the needs of the particular locality. If western farmers will give a little time and thought to the question of plant disease control much loss can be prevented and many of the discouraging leaks in crop production can be stopped.

Strawberries in the West.

Strawberries must have an ample supply of moisture not only during the season of growing fruit, but also throughout the growing season. For this reason irrigation is necessary to make the crop reasonably sure in most sections of the western United States. Cultural methods for growing strawberries in this section are described in Farmers' Bulletin 1027, just published by the United States Department of Agriculture.

As strawberries have a shallow root system, the surface soil must be kept moist and irrigation must be more frequent than for many plants whose roots penetrate the soil deeply. The number of irrigations, however, will depend largely on the character and frequency of the tillage used in conserving moisture and on the type and condition of the soil. If the furrows are thoroughly cultivated as soon as the moisture conditions permit after each irrigation, the number of applications of water can be materially reduced, as compared with the number required when cultivation is neglected. In the lighter soils, during the bearing season, the fields may be irrigated as often as every four to six days, and in heavy soils every week or two. During the months when the plants are not fruiting only enough water to keep them in a thrifty growing condition is necessary.

During the picking period, the usual practice is to irrigate immediately after each picking. Where there is danger that the water in the furrows may not be absorbed before the following picking, the field may be covered by two applications, alternate furrows being irrigated in turn.

In some localities alkaline salts are brought to the surface in such quantities as a result of irrigation that the strawberry plants are injured and even killed. Usually the first indication of alkali injury is yellowing of the leaves in the lower spots in the field. In selecting a site for a strawberry field, places where the soils are known to contain alkali should be avoided.

Other limiting factors in growing strawberries in some localities in the west are nematodes, parasites also known as eelworms and gallworms. Their effect, which is usually manifest first on the roots, is commonly called root knot, because of the knotlike enlargements they produce. Nematodes occur widely in soils where the winter climate is so mild that the ground rarely freezes more than a few inches deep, or does not freeze at all. Strawberries should not be planted in soil known to be infested with nematodes, and plants should not be used which have been grown in infested areas.

In most western localities the season of planting depends upon the period of greatest rainfall, although it is not necessary to rely so largely on rainfall where irrigation is used. In most parts of California late fall and early winter are preferred, for if the plants are set in November or December and make a good growth during the winter, considerable fruit may be harvested the following summer. In western Oregon and Washington and in other northern parts of the irrigated regions, early spring planting is preferred by most growers, for the cold is likely to injure autumn-set plants which are not fully established.

Preparation of land for planting strawberries should be complete and thorough. Failure in this respect before setting the plants is likely to prove costly. If the soil does not have abundant humus, it should be supplied before planting, either by making heavy applications of manure, or by growing and turning under one or more green-manure crops preferably a legume. If nematodes are present in the soil they may be starved out by growing some of the crops which are immune to them, such as corn, sorghum, winter oats, rye, millet, velvet beans, peanuts, and certain varieties of cowpeas, of which the Iron and Brabham are perhaps the best known.

Both the hill and the spaced matted-row systems are used extensively in irrigated regions. Where the soil is heavy and rather impervious to water, narrow beds must be made and the hill system should be adopted. In cases where the soil is penetrated readily to some distance by irrigation water, the beds may be wider and the matted-row system may be used.

Directions for planting, care after planting, harvesting, and shipping, varieties and uses of strawberries, are contained in the bulletin, copies of which may be secured free, so long as the supply lasts, on application to the United States Department of Agriculture, Washington, D. C.

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EVOLUTION OF SWEET CLOVER IN WYOMING.

WALTER C. HAWES.

AMONG the progressive farmers of the Wheatland colony, sweet clover has come to be recognized as their best soil builder, one of the best of pasturages, and under favorable conditions a veritable bonanza as a seed crop. To claim the further virtue that all these advantages may be secured with less work and expense than are required by any other crop may lay me open to the charge of extravagance in praise, but any amount of backing for that statement can be secured among the Wheatland farmers.

To arrive at such general esteem from a position of notoriety as a public nuisance is a very respectable advance to accomplish within the space of ten years. No longer than ten years ago a hanging bee was proposed when a young man in a nearby community proposed to distribute the plant in order to make profitable bee-keeping possible. And now those same people are willing to pay 24 cents per pound for the seed. The credit for such a complete reversal of public sentiment is mainly due to the initiative of two men, Andrew Knapper and Arthur Johnson, known locally by the firm name of Knapper & Johnson.

While other farmers were "viewing with alarm" the rapid encroachment of sweet clover along the irrigation ditches and on all arable lands where constant cultivaton did not keep it in check, these men conceived the idea of harvesting the crop on their own places and on neighboring vacant lands, to ship to the southern markets, where the plant was in demand as a soil renovator for the wornout cotton lands. They had the field to themselves, their neighbors being perfectly willing to let them come on their farms and harvest it for the sake of getting it out of the way. The project was a success the first year, and next year Messrs. Knapper & Johnson widened the scope of their operations. The next step was to systematically sow the plant in their own fields.

It was not till the summer of 1915 that the sweet clover idea secured a general hold on the community. Then it became known that there had been a failure in the eastern seed growing districts, and that 30 cents per pound was being offered for the seed on the market. The "weed" idea died hard, but a number were at last convinced and rushed their binders out on the vacant grounds. One farmer alone is reputed to have made $5,000 in the course of a few weeks' work. A telegraph operator who came out from the east to spend his vacation camping in the district caught the fever and mowed a patch with a scythe. He then beat it with an improvised flail, realizing better than $250 in seed. While the price has never been as high since, this one year sufficed to establish the reputation of the crop.

Other Uses Explored.

The value of the seed being recognized, it was natural to explore the other possible uses of the crop. In the days when the "weed" conception of the crop was still a fixture in the minds of the farmers, they had known that a growth of sweet clover for several seasons improved the land in texture, and added both nitrogen and humus. Messrs. Knapper & Johnson developed the idea of a two-year rotation, a field being planted to sweet clover with a small grain nurse crop the first year, and the seed crop being taken off the second year. The field would then be replanted and the process renewed. It was found that this rotation increased grain yields as much as ten bushels per acre where consistently followed. On a number of the best farms in the colony this is the main cropping system.

The next step in the exploration of sweet clover values was in the direction of its use for pasturage. Among the pioneers along this line were W. W. Wolfe and W. V. Wolfe, who operated the Wolfe Bros. farm. These men began a two-year rotation, sowing the sweet clover with a small grain nurse crop the first year, and pasturing it down with sheep the second year. In this system the presence of the "golden hoof" added to the increase in fertility. The rotation was alternated on different parts of the farm to provide sweet clover pasturage every year. The Wolfe boys found that on favorable seasons their pastures would stand as many as ten head of ewes with their lambs to the acre, provided that the sweet clover was allowed to get a fair start.

At first some difficulty was experienced in learning the proper management of sheep on this pasture. A lane led from the grove of fine shade trees surrounding the improvements on the Wolfe Bros.' farm to the sheep pasture. One hot summer afternoon the sheep started for the shade at about 4 o'clock. Before they had gone far an uneasiness became manifest, and the flock broke into a run. Then a sheep dropped here and there, until by the time they had reached the barn eleven sheep were strewn along the lane. Through that disastrous experience the Wolfe boys learned that the danger of bloat was obviated if the sheep were kept constantly on the pasture in the heat of the day. Any motion for a distance towards shade or water at that time was found provocative of bloat. Aside from a few such initial experiences the practice was found very profitable.

For Seed, and Pasture.

A still later development was a combination of the seed and pasturage ideas. It was found that sheep could be run on sweet clover until the first of August, after which a seed crop would develop—providing that the field had not been over-pastured. If the main stalks become too coarse for the sheep, they will browse on the lower leaves allowing the top to shoot up and blossom unmolested. Where they have nipped the center stalk, small shoots will run out and develop before frost.

As an instance, on the farm of J. A. W. Hudson an average of nine sheep to the acre were pastured on twenty-nine acres of sweet clover until the first week of last August. They were then marketed, and the clover allowed to grow unmolested until a date early in September, when it was cut for seed. When it was threshed a return of $63 to the acre was realized from the twenty-four acres which had gone to seed. The five acres next to the gate had been eaten to the ground. On the farm of T. B. Hawes a hundred ewes and their lambs were pastured on twelve acres of sweet clover for six weeks, after which they were withdrawn and a very fair crop of seed realized.

The best success with the crop is experienced in that part of the colony lands that is underlaid with sheet water at the depth of a few feet. Here the plant grows luxuriantly, seeding itself year after year, even where it has been cut for seed, and encroaching successfully on prairie sod. On forty acres of such land on the farm of W. L. Ayers an average of over 600 pounds of seed to the acre was secured during the past summer, realizing its owner $152 per acre over threshing expenses, or better than $6,000. Practically the only labor expended on this forty acres was that involved in harvesting and threshing.

While threshing operations were not completed for this season when this was written, the yields of last year may be taken as an indication of the value of the crop from a seed standpoint alone. During the summer of 1918 one per cent of the sweet clover seed marketed in the United States was produced on the Wheatland colony lands. The aggregate was 140,0000 pounds, or approximately four carloads.

The seed crop is one of several returns from sweet clover. In addition to the values already enumerated, it represents a considerable asset to the growing bee industry. Knapper & Johnson have accumulated a large apiary in connection with their seed production, and find that the two enterprises can be associated most profitably. According to their experience, an acre of sweet clover is sufficient pasturage for one colony of bees. During the summers of 1917 and 1918 their bees averaged 140 pounds of honey per colony. At the prevailing prices this item alone represents an income of over $30 per acre. When this is added to the several other profits incidental to sweet clover production, it can be readily understood why the Wheatland colony is one section of Wyoming that has not as yet found it necessary to promote an oil boom.

Scores the Appraiser.

To the Editor:

In your issue of January 15, "E. M." of Colorado asks about a loan on a quarter section worth about $4,000. Your answer to him conveys the impression that he could expect a loan of $1,500, provided it was appraised at $4,000.

I presume the quarter in question is an average eastern Colorado quarter with fair improvements; if so, I can tell you that he can get about $800 on it if the same appraiser covers his territory as did mine.

Land here sells for $20 to 40 an acre, but according to the aforesaid appraiser, those prices are all speculative and all eastern Colorado is liable to another "back to your wife's folks" movement, and is therefore worth about as much as it was prior to a famous landing on the Island of San Salvador in 1492. If the applicant for a loan is at all gullible he will, after the departure of the appraiser, irrigate his place with tears of joy at having received a loan at all! As to why the loans are so reduced, the excuses given would place the appraiser in a place to recommend him for a lifetime position as writer of excuses for the American Hookey Players' association, and in the event of his acceptance, I have no doubt but that education of the American youth would be superseded by pastimes more enjoyable.

The applicant may consult the local board and be advised about as you advised this questioner, but after the appraiser's advice to watch him closely, the local appraisers will have to be as immune to wind as a prairie dog hole if they don't think that the terribly heavy (?) loan is in immediate danger of bankrupting their local association and sending them all to the poorhouse! There is a movement on foot in the states further east to raise the limit from ten to twenty-five thousand. Let us tell them in no uncertain terms that we would like first to be able to get one thousand.—Oakley G. Pierce, Briggsdale, Colo.

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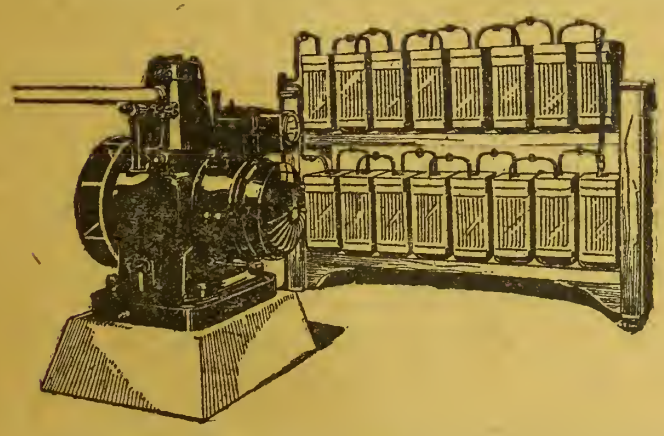

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Witch's Island

BY W-T-NICHOLS

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The Previous Chapters.

Lounging in a cafe in a drowsy West Indian town a health seeking tourist finds himself protected from the wrath of a drunken sailor by an adventurer in white duck who calls the tourist by name: "I might as well be honest with you. The cards couldnt have fallen more to my liking. For I wanted a chance to talk with you—Scott!

"That's my name, but you have the advantage of me." This from Robert Harden Scott, the tourist. Explanations, comparison of notes and the two are soon on a footing of mutual confidence, the adventurer proving to be Grayson, a forgotten college mate, who has knocked about the world in search of excitement and who has before him the prospect of the greatest adventure of his life—if his new-found friend Scott will advance the capital needed for an expedition of exploration to the wreck of the Zenobia, and will agree to accompany him, to share in the search for a mysterious cargo.

The Zenobia, Grayson explains, was a three-masted yacht; a big boat, close to four hundred tons, seaworthy, owned by a man named Perham, who made long cruises in her, practically lived aboard, solitary chap, not given to taking company along. A year ago he was up the Mediterranean; called at Egyptian ports. Then he returned to American waters showing up at Havana; then sailed supposedly for New York, but never got there. Wrecked? Yes, the Zenobia was wrecked, but in waters where no northbound boat ought to be. There Grayson, taking passage in a little schooner whose skipper was his friend, found the wreck, two dead men aboard and another dying from a broken head.

Little beyond details concerning ownership of the Zenobia was learned from the dying man, who soon shuffled off, but Grayson and the skipper made a partial exploration and found—Egyptian mummies in the hold! The skipper could not hold his crew of superstitious negroes after the discovery of the mysterious cargo and Grayson was obliged to return to civilization, to look for a partner. His fortunate meeting with Scott solved the problem. They journey to Witch's Island and begin exploration of the wreck and then things happen.

The first happening was the appearance of Edith Perham, daughter of the mysterious chap who had been owner of the Zenobia. There was a dispute for possession of the wreck, and a compromise, the young woman and her faithful bodyguard, Hoban, working aft while Scott and his crew continued exploration of the forward deck. Then another complication—a piratical gang of halfbreeds attempt to drive the searchers off the wreck, but are repelled after an ugly fight.

CHAPTER XII.

Voices of the Night.

But Miss Perham, as the event proved, had not decided to ignore us completely. When we landed, a good two hours after she had left the wreck, she was awaiting us, openly, undisguisedly. Hoban as usual was at hand, his expression as wooden as ever and his spine as stiff.

Grayson doffed his cap. I pulled off mine. The girl formally acknowledged the salutes.

"I wish," she said, "to make use of your diving apparatus. I desire it immediately. I will pay you fairly for its use."

Certainly she had a knack of putting things directly. In contrast Grayson's reply was embarrassed, hesitating.

"I'm sorry—I regret that—it—it is fully employed now, you know."

"I am in haste."

"And so are we," he told her. "We are liable to be interrupted—what you saw today should give you an idea of the un-wisdom of wasting time."

Deliberately, I fancy, she chose to misinterpret his objection. "I shall not haggle. You may set your own price—within reason, of course."

"It is not a question of price."

"You are to understand, sir," she said, "that I in no wise recede from my position that you are trespassers, without right on my yacht. On the other hand, finding you here and being unable to drive you off, I am constrained to deal with you to the extent I have suggested. I will hire your apparatus; I will make certain investigations; I will then return your appliances, paying the rental we may agree upon. As to further proceedings, I bind myself in no respect."

"Miss Perham," said Grayson very gravely, "I must deny your request. We have undertaken a definite search, we can not interrupt it even to oblige you."

He spoke with finality, and she recognized it. Without another word she turned away, Hoban falling into step behind her.

Grayson shrugged his shoulders, I nodded. The case of Miss Perham, unquestionably was beyond either of us.

That night we talked it over, talked it out, in fact. So far as she was concerned, we were doing all we could do—and that was nothing. Grayson summarized our situation.

"She'll think us brutes as well as thieves, but that can't be helped. That gang we drove off today may come back, reinforced. Or, if it isn't that one, it'll be another. There's no longer doubt that Hoban made too much talk. I'll warrant you, the word's passed among the islands half way to Trinidad that something's doing here. So there's nothing for us but hustle, and trust to fate to make our haul before the main flight of buzzards swoops down upon us—makes a haul and a get-away."

"And carry her with us by force of arms?" I inquired. "We can't leave her to their tender mercies, can we?"

"No!" he said, sharply. "But don't ask what we'll have to do or just how we'll have to do it. One bridge, Scott, at a time!"

That was all I could extract from him, and it was not very much, as you will note.

The problem got upon my nerves, and robbed me of sleep long after Grayson had turned in. Even when I had fallen into an uneasy doze it returned to plague me with a dream in which flying machines played a part, and a pack of winged wreckers pursued a hazardous retreat from Witchs Island. And from this dream I woke with a start, to find myself sitting up in the bunk, staring wildly at the rectangle of lighter shadow which indicated the open door of the hut. It was an unbroken shadow now, but I could have sworn that a moment before a figure had stood there, pecring into the hut.

For a little I strained eyes and ears without avail. Nothing flitted across the opening; there was no sound except Grayson's steady breathing and the lap-lap-lap of the ripples on the beach. But as my brain cleared of the fog of the dream, the conviction grew that something more substantial than a fantasy of the night had roused me.

I got upon my feet, and moved cautionsly to the door; and standing there, heard a sound, not loud but peculiarly penetrating—a crack, as dry wood parting under a foot. A moment later I caught it again, fainter than before, but giving better hint of the direction from which it came—not quite in line with Miss Perhams tents, but roughly in the same quarter.

Reasonably or unreasonably, I jumped to a conclusion; ten to one, it would be Hoban prowling about. Why he should choose such an hour I did not pause to inquire, though I might well have recalled that full opportunity by daylight had been his. I knew that he secured water from the little stream; still he might not have followed its course to the basin and our hut. And, if he were abroad at midnight, it behooved his neighbors to learn what they might of his intentions.

Pulling on my shoes and slipping a pistol into a pocket, I stole out of the hut and along the path to the beach. It was not so dark in the open, beyond the trees, although the sky was overcast and only a straggling star showed here and there, and I could make out the ghostly white of the tents against the inky background of foliage. With all caution I approached them, timing my steps to the rhythmic fall of the little waves on the sand, and drawing near without detection. Also I was drawing near to a discovery. Another sound there was, as regular as the beat of the miniature surf, though not as melodious, an unmistkable sound—a heavy snore.

I pulled up, bewildered. Beyond peradventure, Hoban was sleeping the sleep of the weary in the shelter tent set before the larger tent of Miss Perham.

A mad notion seized me, but I shook it off. The girl herself playing the spy? No; that wouldn't be her way. I set my wits to seeking a likelier theory.

Jose or the skipper? They came next to mind, but why should either go to the trouble of skulking through the wood by night or peering into a hut they were at perfect liberty to examine by day?

I lay claim to no more courage than the next man, and admit a well-defined liking for avoiding hard knocks. Moreover, I have no fancy for goblins or visions beyond understanding, but at that moment my overpowering desire was to solve the uncanny mystery. So clutching my pistol I stole by the tents, and hugging the cover of the forest began to make my way along the beach.

As has been said, the island was not large, and even in the darkness its circuit could be made with ease, provided one kept to the open beside the sea. For some distance, then, I proceeded without trouble, going slowly, halting often to peer about and listen intently, and getting no return for the pains I was taking. Indeed, it was not until the round had been half completed that aught occurred to suggest that mine was not a fool's chase on the trail of a spook.

I heard something—not the sharp crack of dry wood, but the soft brushing of twigs against a moving body, not far away. And then came another sound, more distant but to be recognized as a human voice. The words were unintelligible, the language a matter of guesswork, for the voice was not raised but, rather, was carefully curbed to a short-range hail. That I heard it at all was to be explained only by the atmospheric conditions. It was what is sometimes called a hollow night, very still, with hardly any breeze stirring; such a night as sometimes precedes a heavy rain in more temperate regions.

Crouching low, I listened for a response to the call. It came quickly—a whistle—and again there was the swish of branches hardly a score of paces distant. A man stepped out of the cover. Dark as the night was, he showed like a blot on the sand. In vague fashion I could even make out that he seemed to peering to right and left, before he turned from me and walked briskly along the beach.

Hugging the edge of the cover, I crept after him, with no clear plan of action, but of a mind to learn what there might be to learn of these nocturnal visitors and their mission. In this fashion I had advanced perhaps fifty yards, when, of a sudden, there was a gleam of light, visible for but an instant—a dazzling ray such as is projected by a bullseye. It swept seaward and then went out, but for a fraction of a second it had rested upon a boat drawn up on the sand.

There had been a signal given, and the reply was swift. Another light gleamed briefly far out on the black water. The man I had followed spoke, and there was a gruff murmur of a response from a second fellow who had joined him. There was crunching of sand under the boats bottom as the two began to shove her down the slope of the beach.

At that I sprang to my feet, and sang out, "Halt! It was a foolhardy performance, possibly, but not without excuse, all things considered. "Halt!" I repeated. "Halt, or I'll fire."

The men obeyed the command in one respect but not in another; that is, they ceased the attempt to launch the boat, but moved toward me.

"As you are!" I ordered. "Don't come closer. Who are you, and what are you doing here?"

They pulled up, but neither made answer.

"Account for yourselves!" said I, sharply.

"And who might you be?" one of them demanded.

"It's not my turn to explain," said I.

"You're taking a high hand, friend," he told me. "Oh, yes, an amazing high hand!"

"That's as may be," said I. "Whoever I am, I'm on this island by day as well as by night, openly and not secretly."

Apparently he saw no need of further caution, for he raised his voice loudly enough: "Friend, it may well occur to you that if we came secretly, we might desire to go in the same manner. Suppose you bout face and double quick to the rear—and the quicker, the better!

"I might," said I, "if I hadn't the drop on you."

He laughed, jeeringly. "The drop! You've had, more like, a drop too much, or you'd see that high as you're playing your hand, you're out-held."

"That remains to be proved."

"Well, proof's easy, if you insist upon it."

(Turn to Page 24.)

The Human Side of Service

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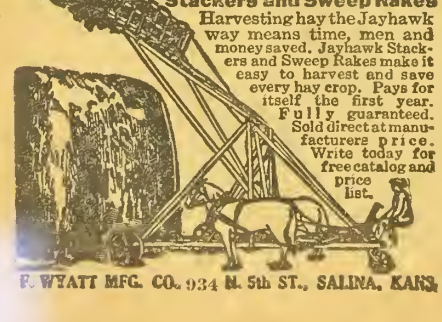

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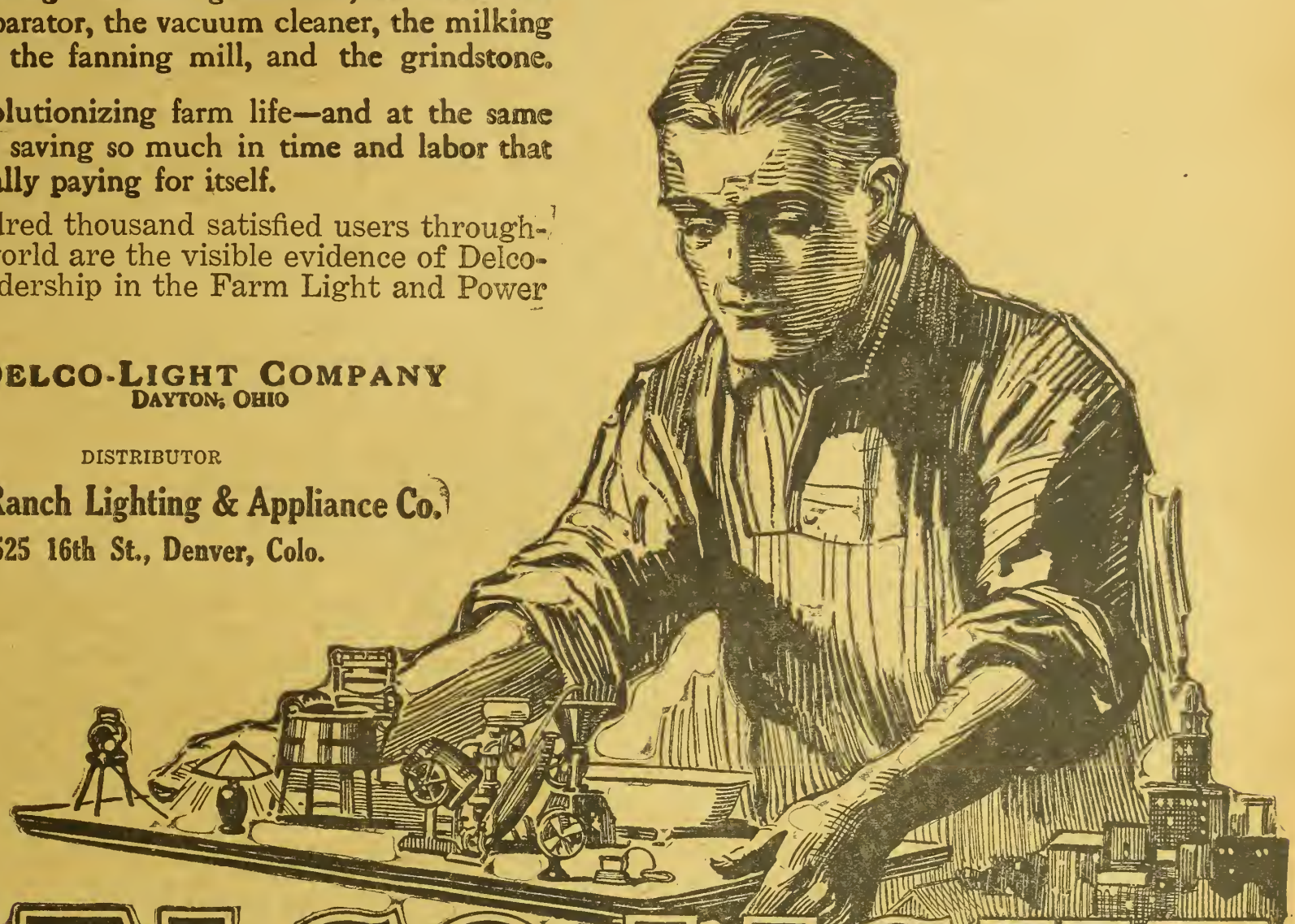

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Let Grazing Fees Alone.

Stockmen are making a vigorous protest against the proposal of the committee on agriculture in the national House of Representatives to raise the grazing fees on the national forests approximately 300 per cent. They have a right to protest, not only on account of the increased cost of production involved, but because of the inconsistent action of one branch of the federal government engaging in an effort to reduce living costs while another branch is endeavoring to lay additional charges on producer and consumer. Then there is a third count against the congressional committee responsible for this ill advised plan, and that is, the service which the stockmen are getting is not worth a cent more than they are paying for it now.

It will be recalled that the stock raisers received assurances from the Department of Agriculture, after a conference with the then secretary, Mr. Houston, at the Cheyenne convention in 1917, that no further increases would be made for five years and that permittees under the five-year contract would be able to figure on fees then in effect, plus an increase of 25 per cent. This agreement with the federal government has been in effect little more than two years, and now the stock raiser is faced with the proposition of an increase to bring grazing fees on a par with charges made for private pastures, on the alleged ground that the government is losing money at present rates.

For the information of the committee on agriculture, let it be said that if the forest administration will let grazing supervision stand by itself and not seek to saddle it with a portion of the losses due to timber cutting and other features of forest administration, which are not of direct benefit to the livestock industry, the showing will be a different one.

There are enough discouraging features now to harass the stock raiser who has a right to look for aid from the government instead of hindrance. There is no complaint against a legitimate charge for service rendered in administration of the forest pastures, which are public property, but the very strongest reasons for fighting tooth and nail any effort to make a three or four months permit for grass pay the cost of an all year round general administration of the forests. Regulated grazing has been beneficial to the stock industry, but whenever government bureaus develop an inclination to render administration oppressive for the sake of a good financial showing, it is time to call a halt.

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The Farmer and Strikes.

Agriculture has spoken in no uncertain terms regarding the assumed right of labor to tie up the transportation facilities of the nation by strikes. Not one, but several of the great organizations, joined in a statement recently given out at Washington, setting forth the sentiment of the farmers on the question of general strikes. The National Grange, the American Federation of Farm Bureaus, the Association of State Farmers' Union Presidents, and the Cotton States Board, signed the statement, a part of which follows:

"Those who believe that labor has an inherent right to organize a strike, believe that such organizations have a right to starve the people of the cities to death, on the one hand, and to destroy the property of the farmers on the other.

"No such right has ever existed and no such right exists now. It is economically unsound and the American people can and will work out some other method for the settlement of such controversy.

"No set of men has ever had the moral or legal right to destroy property or cause suffering by conspiring together, and the welfare of the people must ever remain superior to that of any class or group of people.

"What would be the verdict of the people if the farmers of the United States should suddenly decide to go on a strike and refuse to supply the wants and needs of those who are not in a position to produce food and clothing for themselves? They would be condemned from one end of the country to the other, and the fact would be pointed out that they, as the owners and tillers of the land, had no right, either moral or legal, to bring about such a calamity.

"If the farmers who own and occupy the land, have no such moral or legal right, then why should it be conceded by anyone that those who handle the farmers' products have a right to block the transportation or industrial facilites of the country and thus jeopardize the food and clothing supply of the nation? If the farmers have no such rights, those who handle their products have no such rights."

✦ ✦ ✦

What the Farmer Asks.

From a statement by Mr. E. T. Meredith, the newly appointed Secretary of Agriculture:

The farmers of America are willing to assume their part of the responsibilities as American citizens in meeting any problem threatening the welfare and stability of our country, but this high cost of living problem is a mutual one, and they ask that it be approached by all the people as a common problem. They ask that those engaged in distribution eliminate the lost motion and not put so great a burden upon production as there is upon it today. In other words, they ask that there be an adequate number of producers of wealth, and this includes property and food of all kinds, and only such number of distributors as is necessary to perform the services required. They ask that the banks, railroads, wholesale houses, retail establishments, factories, all of which are vitally necessary to the farmer and recognized by him as such, be speeded up along with him, that the work now done by three men may be done, if possible, by two, and the burden of transportation and distribution be thereby lightened. If the factory executive will speed up his plant that there may be two days' labor in the supplies, machinery, or what not, that the farmer buys, rather than three days' labor, the article will cost the farmer that much less, his profits be increased, and his production stimulated, more men stay on the farm, more men go to the farm.

Business men must look to the operation of their establishments, no matter in what line they may be engaged, and see that no useless employe is retained to add to the cost of distributing what the farmer now produces. Useless employes must be released from nonproductive work that they may go into productive work and add to the sum total that may be distributed among all.

Let us enjoy in America as highly developed a system of distribution, and in this I include all the professions, doctors, lawyers, teachers, as well as retailers, transportation, etc., as we now have, but let us cut out the useless member, the surplus one here and there, and give him an opportunity to become a producer upon the farm, or in the factory. Let us have six-tenths of our people in production, and four-tenths in distribution, that there may be six-tenths of what a man can produce each day for each of us, rather than have four-tenths in production and six-tenths in distribution, which gives us only four-tenths of what a man can produce each day for each of us. To do this conditions in production must be attractive, farming must be remunerative and offer to a young man who engages in it an opportunity equal to that offered him should he go into a bank, railroad, wholesale or retail establishment.

The farmer asks that the laborers in the mines, the factory, and the mills, who are also real producers along with the farmers, make an effort comparable to his to see there is just as little labor expense as possible in each article turned out by their hands, thereby helping the farmers of America, who in turn will help the laborer. This is not inconsistent with the views and desires of the loyal, intelligent laboring men, who recognize the mutual advantage to all in an honest day's work for an honest day's pay. Given this, and the manufacturers, jobbers, and retailers taking a reasonable profit and recognizing the harm that must ultimately come from profiteering upon the farmer, the question of the high cost of living will largely solve itself to the permanent good of all concerned.

On the other hand, if the whole country, all business and all labor, does not recognize this as a common problem, and do those things which give the farmer a fair compensation for his efforts, do those things which make farming remunerative, pleasant, and as attractive as other lines of endeavor, the conditions will not improve. On the contrary, more and more will the young men leave the farms, more and more will the older men become discouraged, and less and less will there be of farm produce to divide among the whole people for their sustenance, and higher and higher will go the price of that which is produced.

✦ ✦ ✦

Growth of Oregon College.

Among the western colleges to make a very creditable growth in the past ten-year period is the Oregon Agricultural College at Corvallis, Oregon. According to a recent statistical report received this school has an enrollment of students outnumbering the combined enrollment of all of the other colleges in Oregon.

In the school year 1909-10 the enrollment was 1,065, and for the school year of 1919-20 the number has increased to 2,919. These figures do not include the summer and short course students.

Oregon is to be congratulated on the excellent work of this school and its results in promoting the agricultural industry of the state.—H. A. L.

What the Farm Bureau Is.

Some farmers, especially some Farmers' Union men, do not seem to me to quite understand the purpose and significance of the Farm Bureau movement. Those who hold an extreme view along this line seem to think that the attitude of the whole Farm Bureau movement toward existing farm organizations is one of hostility and that the Farm Bureaus as such are seeking to destroy such organizations by "boring" from within. No impression, however, could be more unfortunate; for nothing could be farther from the thought and purpose of the farmers in the Farm Bureau. The Farm Bureau, on the contrary, is characterized by sincere friendliness towards all existing farm organizations, and by a desire, through intelligent co-operation, to make the influence of all farmers, as farmers, more pronounced and effective along industrial and economic lines. There is no farm organization today that can speak for all the farmers. This farm organization and that farm organization can speak, each for its own members, but none of them for the farmers as a whole. The Farm Bureau, county, state, national, is, however, an organization through which all the farmers of the country can, simply because they are farmers, working cooperatively as farmers for the common good, make their voice heard on economic questions where it will do the most good and make their influence decisively felt in the development of agriculture along scientific lines.

Farm Bureaus, on the other hand, may make mistakes. That is to be expected; for the Farm Bureau is a democracy. It is, however, inherent in democracy to make mistakes; but it is the glory of democracy to profit by them. Some farm bureaus may attempt too much. That, however, is a mistake that time and experience will correct. Some farm bureaus may seize upon, and emphasize, only that which is transient, ignoring in their shortsightedness, that which is permanent. Such bureaus will, in the long run, find it difficult to maintain their identity. The Farm Bureau will come to its own only when the farmers of the country realize that the Farm Bureau is the organization which they, the farmers, can use to do, not small and insignificant, but big and vital, things.—Alfred M. Wilson, Clifton, Colo.

The Branding Iron

To an unbiased observer, it would certainly seem that the "friends" of the horse are more concerned with their pocketbooks than with the horse's welfare in attempting to have him retained for the heavy drudgery on the farm and on city streets. Surely civilization has advanced far enough in the United States so that we can eliminate the barbarous custom of raising dumb animals for a life of drudgery and suffering, especially when the same work can be done so much more economically and satisfactorily with mechanical power. The very fact that there have been organizations such as the Anti-Cruelty Society and the Society for Prevention of Cruelty to Animals is simple evidence that the life of the horse in the past has not been all that could be desired from a humanitarian standpoint.—Tractor Farming.

It is refreshing to have the sympathy of such an "unbiased observer" as Tractor Farming, but don't let your tears get away with you Brother I. H. C. Get busy and organize a society for the Prevention of Cruelty to Tractors. We've seen them more shamefully abused than the horse ever was.

* * *

And now the Southern Wholesale Grocers Association has organized a Bureau of Research. The packers have one of those things. They give out "scientific facts" for free publication. They used to call them press bureaus, and in the old days newspaper men were in charge. With the new title have come professors in charge who give out the results of "research" work in scientific terms. The world do move!

* * *

Our good friend, R. W. Clark, whose travel letters are liked by our readers, bemoans the fact that nothing is being done to improve the human race from the standpoint of heredity. The trouble is that we humans consider ourselves supreme and above any agency that would seek to correct our defects. In order to improve any line by the process of heredity something better is necessary as a starter. Where would we get it, on Mars?

* * *

Branding Iron takes this means of acknowledging receipt of communications detailing the attitude of the following named parties toward the farmer: Gen. L. Wood, Gen. Pershing, Col. W. J. Bryan, First Lieutenant McAdoo and Privates Lowden, Taft, Champ Clark, Palmer, Johnson, H. Hoover, Borah, et al. On behalf of the farmer we wish to say that we are glad that they all feel so kindly disposed toward the man behind the plow. The farmer never had so many friends as now—unless it was during the previous presidential campaign.

* * *

A recent newspaper article assures us that the bacillus botulinas was "discovered" in a ham in 1899. Not so; he was only named by some scientific feller. We used to run across him in some of our mother's canned goods long before '99, only we didn't have a high sounding name for him then.

* * *

Old Nebuchadnezzar they tell
Ate grass like a dumb animell;
When he struck a thistle
It made the king whistle,
But he beat out the H. C. of L.
—Houston Chronicle.

"mar. 20"

If the label on your magazine reads "mar. 20" your subscription expires this month. You, no doubt, intend to renew. By doing so at once you not only extend us a big favor, but will make sure that you will not miss a single issue of Western Farm Life.

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WESTERN FARM LIFE,
Denver, Colo.

Comment by Farmer Putnam

OUR MISSOURI FRIEND SHEDS LIGHT ON THE HISTORY OF DUAL PURPOSE CATTLE.

MAYBE you don't think I got a jolt from the editor the other day, after he seen that last article of mine. He was sore clear through but all he could do was to holler. You know I got a contrack with Western Farm Life that sez nobody is to change my articles and I kin write what I've got a mind to, and nobody has got any say so about it. That's what makes the editor sore; he cain't edit my letters. I reckon if they'd let him do it you-all would find some queer things on this here page! The last article was about Isaiah Holdemback and his thirst, and that's what made the editor sore. When I come in from the ranch with some provisions fur the office gals he sez: "Putnam, I wonder if you wouldn't be a little more careful what you write about. You ought to use better judgment then to pick on a old skate like Holdemback and call him your friend and then write all about his boozin' characteristicks. Why, people git the idee from readin' your article that we're all boozers and they naturally think you are. I reckon you would be, too, if you could still git it without goin' to jail."

"What's the matter," I sez, "does it make you sore to think about the old days?"

"Never mind gittin funny; I'm not sore, but I hate to see you waste so much space on a foolish topic. Why don't you write about something useful? We've got a big article this time about a Kansas professor that sez they ain't no sich animal as a Milkin' Shorthorn; cain't you give us something along that line from your experience?"

Well, to square myself with the editor I decided to take duel purpose cattle fur my topic this time, because I reckon I do know something about 'em, because we used to have Shorthorns on the farm in Missouri and I know they kin give milk as well as beef. We didn't pretend they was Milkin' Shorthorns; we just used 'em to make meat with, but we allus tried to git cows with good udders, so's they could nurse their calves and keep 'em growin'. That's the hull secret of the beef business—keep 'em growin'. A caff cain't grow without milk; it's like a human baby; you got to give it some of them new fangled vitamines (whatever them is) that comes only in milk.

It's wonderful how the world is progressin'. Now when I was a young feller we never heard of vitamines in milk. We drunk it because it made us fat and that's why we give it to young cow critters. Now some professor has discovered that milk has got something in it to make us grow and he calls it, or them, vitamines. The next thing will be a factory fur producing cultures of vitamines which kin be put in skim milk to bring it back, or in oleo to make it as good as butter.

It's just like them bacterious they puts in the soil to make alfalfa grow. Fust you got to have alfalfa to give us the bugs, then they takes the bugs offen the roots and put 'em back in the ground to make it produce alfalfa! You cain't see the bugs; you take the feller's word fur it that you're buyin' something alive and wigglin' and you stick it in the ground. It's a wonderful world, full of human and other bugs, too numerous to count.

Now speakin' of them duel purpose cattle, I ain't no professor or I would tell you-all something about heredity and environment, which is two words that breeders likes to use in talkin' about their cattle. Now let's furgit them two words and git right down to brass tacks. What is a cow fur anyhow? She was made to raise her young. What is the young raised with, beef or milk? Why milk, of course. Cows is vegetarians. Now what kind of a cow did the Creator put in the Garden of Eden fur the use of Mr. and Mrs. Adam and sons Cain, Able, etc.? Not one to be killed off fur beef, but one that could give milk fur raisin' its own young and the young Adamses. What did they do with the bull calves, fur which they didn't have no market? Why they used 'em to make burnt sacrifices.

I don't know but what that was the way people got to eatin' meat. One day one of them Adams kids was sacrificin, a caff and it happened to be a nice fat one, so when the aromy of roast meat begin to ascend it made his mouth water, he bein' a healthy, rustlin' young feller, used to outdoor life, and hungry as a bear half the time. So, his paw not lookin', he took his stone knife and lopped off a bit of juicy roast from the hind leg of the caff that was layin' on the altar, and bit into it. Gee it tasted good! So he told his little brother about it and, of course, the little feller had to tell his paw.

The old man was human, so he pretended to be upset by what the kids had done, but when they wasn't lookin' he tried a piece hisself. Well, that evenin' when they all got home, Adam sez: "Eve, what do you reckon I caught them young rapscallions of yours a-doin' today?"

"Don't call them mine, Adam, you're just as much to blame fur 'em bein' here as I am. If they've been up to any devilment I reckon they come by it honest. What they been a-doin'?"

Well, Adam told her all about it and, undoin' a pocket handkerchief made of a grape leaf, he unrolled a piece of roast and asked her to take a taste of it. She flew into a tantrum, of course, and sez:

"Now Adam, throw that out! You know you hain't got no business tamperin' with the sacrifice, let alone eatin' of it. You're a settin' your sons a nice example you are!"

"Don't talk to me about example," sez Adam, "who was it bit the apple that the snake was passin' around?"

With that she busted out cryin' and went off to bed, sayin': "Won't you ever git over mentionin' that old subject, you hard hearted wretch!"

Well, anyhow, the upshot was that by and by Eve took a bite just to satisfy her curiosity and later on it become a regular thing to have meat on the table along with the vegetables and milk. That's about the way it might a-happened and what I'm drivin at is that them old timers didn't know much about breed improvement, but they had to take critters as they was made by nature, and fur cows that was duel purpose, and not beef type or dairy type.

Them special types didn't come in till about the last two hundred years. Fur several thousand years before that cows just developed the way nature intended, rearin' their young without nurse cows or special prepared feeds, and man took what milk they could spare and used the surplus animals fur the table, or fur beasts of burden. I reckon it was the big ox that fust give man the idee of producin' a lot of beef offen a critter to sell, and it was some good cow sucklin' twin calves that give him the idee to develop the dairy type. The type that we has allus had from the time of the creation is the true duel purpose, so we ain't a tryin' to do nuthin' new today when we want to git both beef and milk offen the same critter. Anyhow that's the way I look at it, professors or no professors.

Man has got two big faults, one is he don't look fur enough ahead and the other, he don't look back fur enough. This here world is so full of experience, if we only know how to dig it out, we have many things made clear to us. We try to improve on nature and git just so fur and no further. So it is with them special breeds of cattle—beef stuff kin git just about so beefy and milk stuff about so milky and then they'll go back ag'in toward nature. I believe in improvin' on nature where we kin and goin' as fur as we kin go, but the feller that tries to tell me it's impossible to git a duel purpose cow ain't readin' his history right, because duel purpose is nature's purpose, and she fixes the type without much help from man.

Them breeders has done a good work in producin' extreme beef type, or extreme dairy type, but they hain't done nuthin but assist nature. What would be hard and worth braggin' about would be a duel purpose beef and pork critter, or a poultry-mutton cross, or a oleo-butter cow. We're just beginnin' to make progress, so we don't need to think all the knowledge that ever was is tied up in our present generation. Bigger things is comin' fur the human family.

Thoar Jefferson Putnam.

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Notice to Ex-Service Men.

A recent decison made by the treasury department provides:

If a man has been discharged from active service and his war time insurance has lapsed, been canceled, or reduced, he may reinstate all or any part before July 1, 1920, without medical examination, providing he is in as good health as at time of discharge, or date insurance lapsed, whichever is the later date.

If reinstatement is desired, application, together with at least two months premiums for the amount to be reinstated, should be submitted to Insurance Division, Bureau of War Risk Insurance, Washington, D. C.

Reinstatement blanks and information may be procured from nearest Home Service Chapter, American Red Cross, and any American Legion Post.

The University of Idaho extension division has employed a farmers' efficiency expert, Clifford C. Taylor, of the bureau of farm. management of Washington, D. C. He will begin work in Idaho within a few weeks and will assist farmers in their accounting and in preparing income tax returns, will make studies of costs of production and will demonstrate the best known methods of farm management. He will work through the county farm bureaus, as do other extension specialists.

Through the work done in standardizing seeds, the Fremont county, Idaho, farm bureau has five carloads of Marquis wheat which will be certified, three carloads of Defiance and some Early Baart.

Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Inquirers Must Sign Names.

We are in receipt of an unsigned inquiry from an Idaho subscriber asking a question concerning the support of a child and alimony. The question is not clear and therefore no answer can be made. Again we wish to call attention to the rule that all inquiries be signed with name and address of the inquirer, so that same may be answered by letter. The material for this page is prepared long in advance of publication and those who expect to receive answers only through the magazine are inconvenienced by delay if they do not sign full name and address. Names are not used in the magazine, but we must insist on every subscriber who takes advantage of this service signing his name and giving address as an evidence of good faith.—Editor.

Needs Good Hog Pasture.

Will alfalfa meal take the place of pasture for hogs until Sudan grass, or cane would be big enough? Could alfalfa meal be fed in swill without any loss? Would it be alright for brood sows, or would bran and corn chop be better? I am going to keep a couple of milk cows and will turn part of the skim milk over to the pigs.—G. W. S., Pueblo county.

You are lacking a good succulent feed for the hogs during the summer. It is true that Sudan grass, milo and cane will do you some good as a hog pasture but it does not supply the wants as some other crops would. If you have not already done so, would suggest that you try sweet clover. This takes the place of alfalfa very well. A succulent feed of the right kind will save a great deal of grain for you. The alfalfa meal soaked will be good. If it is cheaper than bran it should be used. It would be wise for you to feed a little corn with it. I know some farmers who have maintained sows on alfalfa meal alone. A better balance is possible with a little corn. The thing for you to work toward is a crop of the same nature as alfalfa and in this connection you should try Spanish peanuts. They will stand the dry land conditions, especially if your soil is of a sandy nature. They can be pastured and afford an excellent feed for hogs in the fall. The sweet clover would be another crop worth trying. You could get the peanut seed from the Barteldes Seed company of Denver. Under any condition a legume will furnish you the best pasture for hogs. None of the dry feeds even when soaked will give you the results that you could expect from a plant with its natural juice. For that reason it would be wise to try several crops such as those mentioned. Fall sown rye would be a help for early spring pasture. Rye is fair as a pasture while it is young and tender. It would be necessary to feed some grain with rye pasture.—H. A. L.

Leave the Land Rough.

Should land plowed in the fall be harrowed right away or left rough all winter? This land is a heavy soil rather sticky when plowed. It is dry land and the moisture should be conserved as much as possible.—D. W. A., Las Animas county, Colo.

The land should be left rough, as it will catch and hold the moisture during the winter in that shape much better than if harrowed down fine. Also the harrowing leaves it open to damage by winds in case of an open winter.

Bean Vines for Cows.

Is there any truth in the saying that feeding milk cows on bean pods will dry them up? I have several cows with young calves and I do not wish to feed them any bean vines if it will injure them in any way.—D. W. A., Las Animas county, Colo.

I know of no reason why you should not feed been pods to milk cows. Care should be given in feeding them. It would, of course, be advisable to combine it with other feeds that are of a more succulent nature. It should not be fed alone. If it is fed intelligently it should not cause the cow to go dry.—H. A. L.

Age to Breed Ewes.

I have a small bunch of late ewe lambs; would like to know if it would be feasible to breed them this spring for fall lambs. In fact I would like to know at what age a sheep will breed; also if I could raise two crops of lambs each year by feeding heavily?—R. H. B., Montezuma county, Colo.

Ewe lambs are usually bred to lamb at two years of age. However, it often happens that they drop lambs at an earlier age, but it results in stunted ewe. Never breed before the ewe is 16 to 19 months old. It is not practical to attempt two lamb crops in a year, as the gestation period is 145 days and the lamb should not be weaned under four months of age. They have been known to breed as early as seven months of age, but this is not advisable.—H. A. L.

Vetch Good Hog Pasture.

Will hogs graze on winter vetch? Is Sudan considered a good hog pasture equal to rape?—R. H. B., Montezuma county, Colo.

Hogs will graze on winter vetch. It would not be advisable to pasture it too heavily if you plan on harvesting a crop from it later on. Sudan grass answers very well as a pasture for hogs but will not be so valuable as rape.—H. A. L.

Relative Feed Values.

Please advise me as to the relative value of Sudan grass, cane and German millet, as feed for cattle and horses.—G. W. D., Logan county, Colo.

It is a little difficult to get at the relative food value of these plants. So far as the analyses goes millet is the highest in protein. The comparative digestible nutrients for the three are as follows: Sudan grass 48.5 lbs. to the hundred; cane, 58.5 lbs. to the hundred; millet, 58.3 lbs. to the hundred. The feeding of millet to horses must be done carefully. If too much is given it brings on sickness. The other grasses would be better for horses. The question of the palatability of these various feeds should be the deciding factor. It has been my experience that Sudan grass and cane are more palatable than the millet.—H. A. L.

Property to the Wife.

What share of a man's property can he will to his wife in trustfor her use during life, she to have the use of it? There are four grown up boys not needing help.—J. B., Washington county, Colo.

A man must leave not less than one-half of his property in fee to his wife. And a life estate in the whole is not equal to the fee on the half. A man need not leave anything to his children. The wife may consent to getting less than one-half the estate, but she cannot give that consent during the lifetime of her husband, but must give it after the death of her husband in the probate court.—Hamlet J. Barry, 724 Equitable Bldg., Denver.

Question of Land Lease.

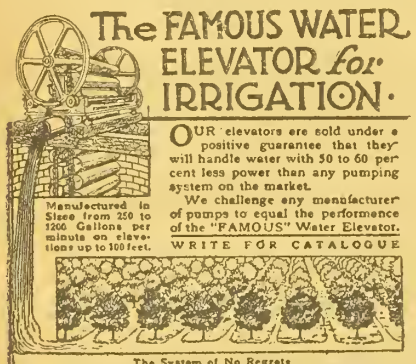
About two years ago I rented forty acres of sod to A, a minor, which he broke most of, but later A's brother, B, became dissatisfied with the trade and together they traded their part of the deal to C, another neighbor. Can A or B either collect for the plowing after I prove up my claim? Also C was to proceed with the farming, which he has failed to do. Is there any way in which I can use the law to prohibit him from using the pasture? This is a verbal contract, but I have witnesses. May my wife act as witness in this case? —R. G. C., Prowers county, Colo.

Unhappily I cannot gather from the statement the full facts regarding these matters. If A or B had a contract for the plowing one may collect for it. Your question is not clear about proving up. C cannot use the pasture unless he is entitled to it. Your wife may be witness to any transaction she knows about. I regret I have to answer in this fashion. If you care to submit a fuller statement from which I can gather more of the facts, I shall be glad to try again.—Hamlet J. Barry, 724 Equitable Bldg., Denver.

Government Reserves Minerals.

Does a homesteader who has filed on a 320-acre tract and later applies to have it classified as grazing land so he can file an addition, forfeit his mineral and oil rights on his original 320 as well as on his additional?—H. J. J., Montana.

One every claim made under the 640-acre grazing act, the government reserves the mineral right. That means, if your 320 is reclassified as grazing land you forfeit your mineral rights on same.



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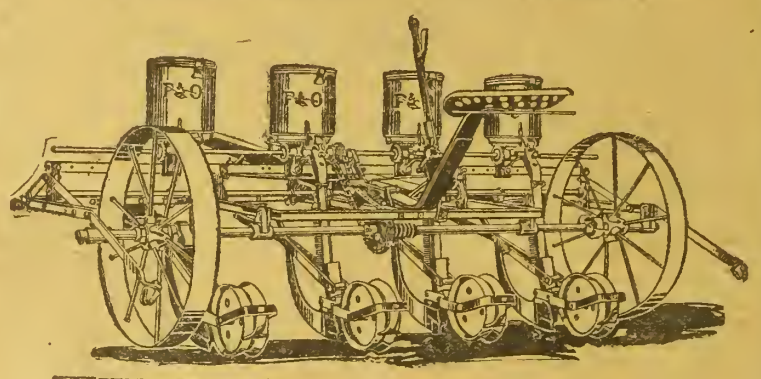
Four Rows of Beets—or Three Rows of Beans



THE P&O Beet Seeder will plant four rows of beets, from 16 to 24 inches apart, or in rows that alternate 16 and 24 inches. The removal of one hopper and a change in plates will convert it into a three-row Bean Drill, planting from 24 to 36 inches apart.

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Grinding Feed for Cows.

Answers to W. L. B., Yuma county:

1. There is no biggest breed of draft horses: The Percherons, Belgians and Shires all aim to produce heavy drafters of the same weight and height.

2. Buckwheat and velvet beans are not comparable in relation to their nutritive content. We will, however, give you the velvet beans as fresh green roughage and buckwheat middlings. Buckwheat is not used as a roughage, consequently we find nothing in the tables giving the nutritive value of the plant in that shape.

3. Regarding advisability of grinding feeds for dairy cows Prof. Henry says on this point that the cow giving a large flow of milk is working hard, and any grain given her should be ground or crushed if it is not otherwise easy of mastication. Corn and oats should generally, and wheat, rye, barley, kafir and milo always, be ground or chopped for dairy cows. There is no advantage in grinding alfalfa hay; in fact most dairy men prefer to feed it as hay. Some are feeding it ground, but we see no benefit in this except that there is very little waste. The matter of economy, however, it seems to us, is offset there, in that there is naturally a great deal of dust when alfalfa hay is ground.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Probably Developing Heaves.

I have a 4-year-old mare that has developed a dry hollow cough in the last few months. It is more pronounced at night than in day time, but there is no discharge from nose or throat. The mare is in good condition otherwise and suffers no distress from the cough. She was bred in August, but I am not sure that she is in foal.—J. A. P., Wyoming.

The mare is probably developing that form of emphysemia of the lungs which is known as heaves. Feed plenty of grain and no bulky food. It will be better to feed a small quantity of clean upland, second bottom, or timothy hay. Under no circumstances feed roughage that is dusty or musty. A tablespoonful of Fowler's solution of arsenic mixed with the grain twice a day will be helpful.—G. H. G.

May Be Swine Plague.

I have two pigs four months old that seem to have a weakness of the hind legs, seeming to be partly paralyzed. They also seem to have difficulty in breathing. They stick their noses straight out and hump up their backs. Can you tell me what is wrong with them?—N. C., New Mexico.

Because of the brief description given I am unable to account for the condition of the pigs. The difficult breathing indicates disease of the lungs which might be pneumonia, or lung complications associated with hog cholera, swine plague, hemorrhagic septicemia, etc. Paralysis of the hind quarters, unassociated with other evidence of disease, is quite common among pigs, the cause of which is unknown. It may be a catarrhal condition of the respiratory tract due to bacteria or parasites. One thing is sure; it is liable to be infectious and you should take no chance of spreading the infection to other hogs.—G. H. G.

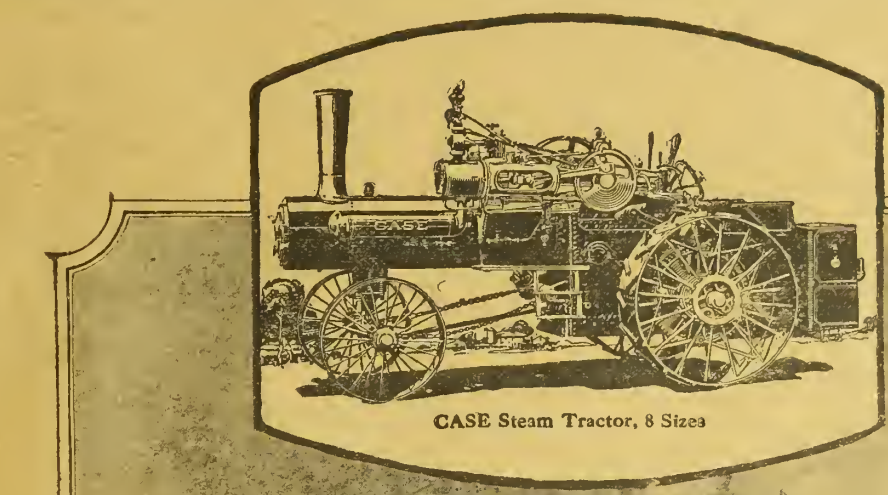
A Remedy for Scours.

Western Farm Life:

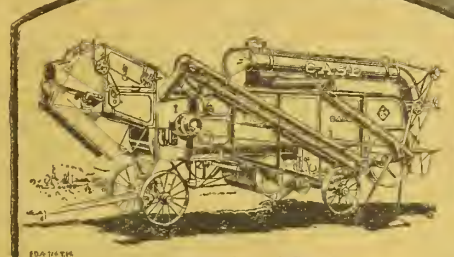
I have read so much and so often of a cure for scours in calves that I will send a treatment that was used by myself for years and never failed. Take enough powdered pepsin that will stay on the point of a pocket knife blade, in a little sweet milk, and give it to the animal, either calf or colt. I have seen calves that were so weak from scours that they were unable to get on their feet cured with one dose, and in ten years use know of only two cases where it required two doses. Our calves were allowed all the milk they wanted and we never kept them from the cows on account of their condition. —William Faas, Powell, Wyo.

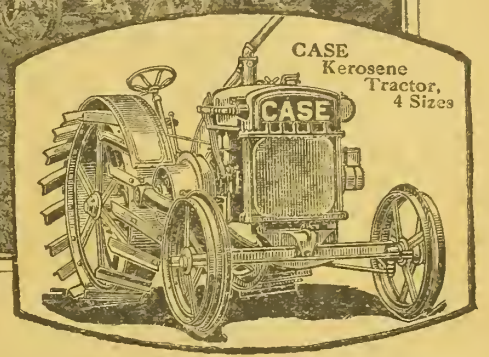
Object Lesson in TB. Control.

The District of Columbia is an excellent example showing that bovine tuberculosis is vulnerable to a definite campaign of eradication. The report of the Chief of the Bureau of Animal Industry, United States Department of Agriculture, gives the following striking percentages: In 1907 tuberculin testing in the District was undertaken and more than 18 per cent of the cattle were found to be tuberculous. Tests made in 1919 on all cattle in the Distrirct showed a percentage of only 0.63 of 1 per cent affected. This is lower than any previous year and the disposal of the last reactors makes the District practically a tuberculosis-free area.



CASE Steam Tractor, 8 Sizes


CASE Thresher, 6 Sizes



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Sweet Clover on Alkali Land.

E. B. HITCHCOCK.
Soil Specialist, University of Idaho.

First a little information on the feeding and fertilizing value of sweet clover. It seems to be the general idea that sweet clover is a weed which will ruin the farm, and that it is worthless as a pasture grass or a hay crop. Why condemn a crop which you have never tried out simply because your neighbor pronounces it worthless? It is true that sweet clover is in the experimental stage, but why not pay more attention to quotations given by men who have spent considerable time and money in experimenting with this crop? To have some idea of what is being done along this line, please note carefully the following:

William Kratz, Jr., of Monona county, Iowa, has had three years' experience in growing sweet clover and is thoroughly convinced that the crop is hard to beat. In the spring of 1917 he seeded sweet clover with oats. Both made a remarkable growth. Oats yielded 80 bushels per acre. The sweet clover furnished pasture for three head of live stock per acre. The field was fall plowed and planted to corn in the spring of 1918. Another strip adjoining this field cropped and fertilized in the same way with the exception of the sweet clover field was fall plowed and planted at the same time. Both fields were cultivated in the same way. The sweet clover field produced 68½ bushels per acre, while the other field produced 38 bushels per acre.

"I planted 140 acres of white sweet clover in the spring of 1918 and it received only one inch of rain during the entire spring and summer. However, I got about about two months' pasture during October and November and from the first of January, 1919, I had from 1,000 to 1,500 head of ewes on the clover until the 20th of March. I might state further that the clover is planted on lands that are extremely hard and void of humus, but still makes a vigorous growth without the aid of irrigation water. In short, I would say that it is by far the best soil restorer and forage plant that I have seen in this valley.—A. H. Culver, Willows, Calif.

"Last year I sowed 70 acres of sweet clover. The soil in this field was very badly alkalied with white and black alkali. It was a sorry looking field and almost discouraging to look upon with hopes of getting anything to grow upon it. However, we had a good supply of water and the seed began to grow rapidly. The irrigation caused the ground to run together and pack, where the water stood upon the land, and where it subbed, the alkali came together in heaps of salt, so that it could be scooped up with the hands. In spite of this we have this year a splendid stand of sweet clover and will, I believe, thresh enough seed to pay for the land."—Langley Brookes, Nyssa, Ore.

Many such reports could be given of the value of sweet clover, but this will give you the reason for some statements that may be made in this article.

Sweet clover will grow on soils which contain sufficient alkali salts to prevent other crop growth. This statement is backed up by experiments carried out by the California agricultural experiment station, the Utah agricultural experiment station, the Oregon agricultural station, and the Wyoming agricultural experiment station.

It is a common practice in Utah to grow sweet clover on alkalied land several years before attempting to grow any other crop. Several questions arise from this fact. Such questions as, why will the sweet clover grow where other crops refuse to grow? Will the sweet clover take out all of the alkali salts? When it is turned under what does it add to the soil?

It is an unknown fact why sweet clover will grow in the presence of alkali salts, but through careful experiments it has been found that sweet clover, outside of sugar beets, is the most alkali resistant crop grown. Undoubtedly the plant absorbs a certain amount of the alkali salts in solution, but the most important feature of the clover in relieving the soil of the salts is performed by the extensive root system, which opens up the sub-soil, giving better drainage and aeration. In this way the alkali salts are drained out through the lower layers. The holes made by the roots are left partly filled with a fibrous substance which permits rapid drainage. The fact that sweet clover does bring about good drainage is very well illustrated in the spring, for a field growing this crop is in condition to plow much earlier than the adjoining fields not growing clover.

After the clover has been used as a pasture or cut for hay for a period of two years, it is well to turn the last crop of the second year under as a green manure crop. This furnishes a large amount of organic matter to the soil, which is quite necessary for a soil that has lain in a dead state for sometime. The sweet clover plants decay very quickly, which is a very important factor from the standpoint of the following crops.

The white sweet clover gives much better results than the yellow sweet clover. Great care should be taken in buying seed to get scarified seed, otherwise the unscarified seed may lie in the ground many months before it will germinate, owing to the thickness of the seed coat.

The best results seem to be gotten by early spring seeding, although the clover can be planted in the fall, if planted early. Ten to twelve pounds of seed per acre gives very good results where there is plenty of moisture. If unhulled or unscarified seed is used, it should be planted at the rate of 15 to 20 pounds to the acre.

After seeding, the harrow or cultipacker should be used to bring about a mulch on the surface. In addition to this it is well to apply a light application of straw or barnyard manure, which contains considerable straw. Through this method the seed germinates and the plant gets well under way before the salts are again brought to the surface by evaporation. Many complain that it is impossible to get a stand of sweet clover. In a large per cent of cases, this is due, first, to failing to provide for a means of preventing rapid evaporation, and, second, to the using of unhulled or unscarified seed, which means, many times, that the seed lies in the ground and rots before germination takes place, owing to the thickness of its coat.

Kernel Smut in Sorghums.

All sorghums except milo and feterita are susceptible to kernel smut. The dipping method is the treatment most commonly used. In order to carry out this treatment, barrels, tanks or vats of any kind and of convenient size may be used.

The solution recommended is made by mixing full strength formaldehyde and water in the ratio of one pint of the former to each 30 gallons of the latter. The seed to be treated may be placed in gunny sacks, or dumped directly into the solution in the container. If sacks are used, care should be taken to fill the sacks about one-half full. This is necessary in order to allow for the swelling of the seed.

The sacks and their contents should be dipped into the solution, and moved up and down three or four times in order thoroughly to wet the seed. The grain should remain in this solution for one hour. It should then be removed, drained and spread out to dry, being raked about so that the seed will dry as rapidly as possible. The seed should not be allowed to freeze or sprout. It should not be stored unless it is thoroughly dry, otherwise it will become moldy. It is best to avoid unnecessary delay in planting the seed.

The formaldehyde treatment will not materially injure the vitality of good seed if the treatment is carefully conducted according to directions. Seed which is poor in germination, or which is cracked or otherwise mechanically injured, is liable to be injured in the treatment, therefore a germination test should be made after the seed is treated.—L. E. Melchers, Kansas State Agricultural College.

Colorado Shorthorns at Wichita.

The Maxwell-Miller Cattle Company of Steamboat Springs, Colo., was prominent in the winnings at the Wichita, Kan., Livestock Show in the following named classes:

Aged Bulls—2nd on Princely Stamp.

Senior Bull Calves—3rd on Maxmill Pride.

Junior bull calves—3rd on Maxmill Perfect.

Aged cows—1st on Sultan Graceful.

Two-year-old—2nd on O. J.'s White Gloster.

Senior yearling heifer—3rd on Flora Anoka.

Junior yearling heifer—1st on Clear Springs Mina; 3rd, on Primrose Pride.

Junior heifer calves—1st on Maxmill Myrtle; senior herd, 2nd.

1st on junior herd and produce of dam.

Enclosed find money order for 50 cents to pay for one year's subscription to WesternFarm Life. I sure do enjoy reading it very much and find many, many useful items.—Mrs. Albert Pearson, Evergreen, Colo.

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Firestone

Combatting Weed Pests.

W. W. ROBBINS.

Where there are extensive areas very heavily infested with perennial weeds, such as poverty weed or wild morning glory, it may be necessary to practice bare fallow for a season or even for two seasons. In the dry land sections bare fallowing for a season can be profitably followed, not only to eradicate weeds, but to conserve moisture. On more expensive, irrigated land, however, the farmer is justified in using this method of weed control only when the infestation is severe. As a rule, a cultivated crop, well tended, will be sufficient.

Millet, Sudan grass, alfalfa, rape, rye and sorghum, sown thickly are excellent smothering crops. They prevent the growth of weeds by completely occupying the ground space. The infested area is worked thoroughly early

Cleaning Seed with the Fanning Mill, Run by Electricity.

in the season, then planted thickly to millet, or Sudan grass, or sorghums. As soon as the crop is removed, the ground is disked and thickly planted immediately to rape or rye. The rape or rye is plowed under the following spring, and followed with some cultivated crop, or fallowed.

Small patches of weeds are successfully smothered by covering with two to four feet of straw or manure, or with heavy tar paper. When tar paper is used, the strips should be lapped several inches, and the edges and seams weighted down with dirt. Of course, these methods can only be used practically where the area of infestation by a most noxious weed is small. Alfalfa is an excellent smothering crop. It not only grows thickly but the frequent cutting serves to keep down the top growth of weeds. Alfalfa is to be recommended in combatting such perennial weeds as bindweed and poverty weed. If followed by a cultivated crop the land is usually practically freed of weeds.

Weed seeds may be carried from one farm to another in the threshing machine. Care should be taken that the machine is thoroughly cleaned after a threshing.

A number of weeds have been effectively killed by chemicals. The results of experiments with various chemicals in many instances have been quite satisfactory, and in others of doubtful value. In the use of chemical sprays, the chemical used must destroy the weeds without injury to the crop.

Our common plants may be divided naturally into two groups. (a) Those with broad, netted-veined leaves, and two seed-leaves, such as most weeds except the grasses, and (b) those with narrower parallel-veined leaves and with but one seed leaf, such as the cereals and other grasses. It has been shown by experiment that almost all crops and weeds of the broad-leaved class are killed by chemical sprays, while narrow-leaved forms are not affected. This means that chemical sprays cannot be used to kill weeds in beet, pea, clover or alfalfa fields, but may be used in grain fields, or in grass land or lawns. But it furthermore means that our grass weeds cannot be eradicated by chemicals. Such weeds as mustards, dandelion, carrot, marsh elder, ragweed, as well as almost all broad-leaved weeds may be killed by chemicals. Various chemicals have been used as sprays: common salt, blue vitriol, iron sulphate or copperas, sodium arsenate, calcium chloride, kerosene, carbolic acid and sulphuric acid.

From all experiments conducted, it appears that for most purposes, iron sulphate is the cheapest and most effective herbicide that has been found. Moreover, it is less dangerous than some other chemicals to handle, and is not poisonous to stock. One hundred pounds of iron sulphate will make sufficient solution to spray one acre. Use 100 pounds of sulphate in 52 gallons of water. The solution is applied with a spraying machine which produces a fine mist. Hand sprayers are of use on lawns in the eradication of dandelions, and in spraying weeds in small patches. There are a number of types of traction sprayers for farm use. The force pump is run by traction. A long rod or "boom" is attached to the rear of the sprayer with nozzles at intervals of 8 to 12 inches.

Iron sulphate has been used with the greatest commercial success in killing wild mustard in small grain. The spray is applied while the weeds are still young. The spray should never be used before a rain, or when dew is on. Select a bright, warm day.

The application of iron sulphate spray to fields of grain to eradicate wild mustard is advisable only where the weed is very thick. The spray will not, of course, kill the mustard seeds in the ground. Consequently, the spray will have to be used several years in succession to be effective. The same result may be secured by cultivation, in which the seeds are turned to the surface. There they sprout and are killed by later cultivation, which in turn brings other seeds to the surface, the seedlings of which are destroyed by cultivation.

The use of chemicals for killing perennial weeds is not recommended. In order to kill the rootstocks of perennials, the spray would have to be applied frequently throughout one or two seasons. The amount of chemical necessary to kill the plants would injure the land to such a degree that crops could not be grown for several years. Perennial weeds can be eradicated at less expense by clean cultivation, or by crop rotation.

Clean cultivation is the common practice in orchards. In certain sections of the state, especially the Grand Valley, this is inadvisable however, for under such a system niter may accumulate in the soil to such an extent as to kill the trees; in fact, clean culture presents the best conditions for the niter-forming organisms. Weeds in such cases are less injurious by far than even a small amount of niter. Dr. E. P. Sandsten (Reclaiming Niter Soil in the Grand Valley, Colo. Agr. Bulletin 235, p. 197), has shown that, in the Grand Valley at least, the use of cover crops in the orchards should be more extensively practiced, if for no other reason than to prevent the accumulation of niter. They also act as a smother crop for weeds, and thus serve a double purpose. Clean culture alternated with cover crops, furnishes a system which keeps the soil in excellent physical and chemical condition and prevents the growth of weeds. Hogs with noses unrung, are often turned into orchards for the purpose of destroying weeds and are useful in rooting out the underground stems of such plants as wild morning glory. It is well to plow the orchard several times a season to make rooting easier for the animals and also to upturn the underground parts of the plant.

Old stands of alfalfa are likely to become thin in places and thus give weeds a chance to get started. As a rule old stands of this character have outlived their period of profitable production and should be plowed up. It is usually not worth while to attempt rejuvenation of an old, very weedy alfalfa stand. On dry land, alfalfa for forage is best planted in rows 3 to 3½ feet apart. Of course, when planted in this manner, cultivation will be needed to keep down weeds.

The frequent clipping of alfalfa serves to check weed growth. However, it is not safe to clip alfalfa too often and too close to the ground and thus

(Turn to Page 23.)

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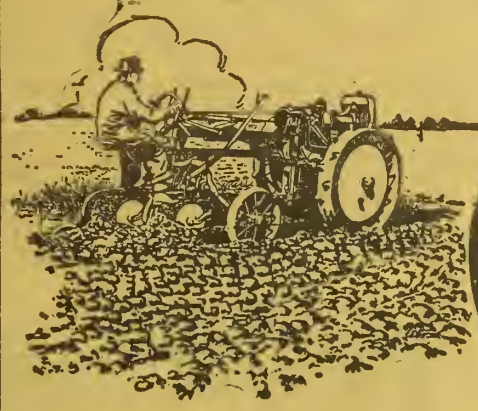

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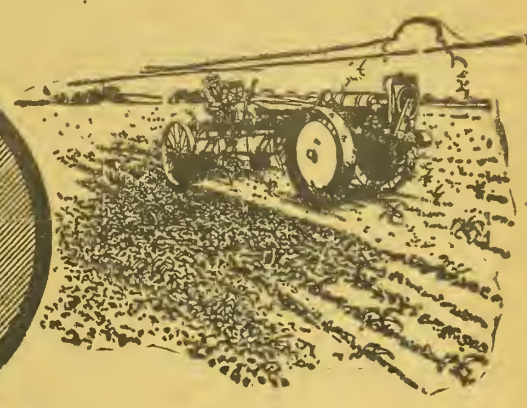

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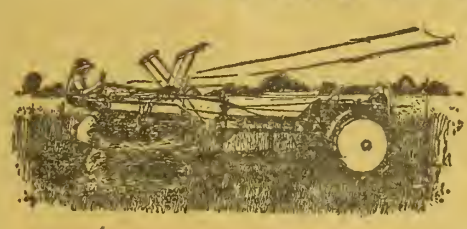

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All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, WESTERN FARM LIFE, Denver, Colorado.

St. Paul Holstein Sale.

You Holstein breeders, no doubt, have been reading of the plans that are being made by the Minnesota Holstein Breeders' Association who are to act as host to the members of the National Association at their meeting June 1 to 5. From all that we can learn this is to be the greatest gathering of Holstein men ever assembled. Special trains are being planned to carry the breeders from several of the states. There is a great deal of interest being shown from coast to coast. June 1 and 2 will be taken up with the annual meeting of the National Association. The 3rd, 4th and 5th will be devoted to the grandest Holstein-Friesian sale ever staged, when 250 of America's best will be offered. The big idea of this event is that it is a national sale held under the auspices of the Minnesota association. The plans have been carefully worked out and each state has been given a certain quota of animals to consign. These consignments are being handled by the state associations. The best animals to be obtained are selected by the various associations with a great deal of care. It is planned that each state's consignment will be the best that is available.

Colorado's quota is 10 head. The Colorado breeders were a little slow in grasping the importance of filling this quota as regards future sales. Several of the breeders, however, after considerable effort, found men who were willing to let their best go, if they could pass the requirements. The selections are to be passed upon by Prof. Geo. E. Morton of the Colorado Agricultural College. The requirement for the sale is that each animal be of good conformation with plenty of size and a satisfactory record of production and healthy. This is an opportunity for each of the states to show what they are breeding. Colorado Holsteins should be well represented and from all accounts they will be.

A Holstein barbecue is a feature of the St. Paul meeting. The animals to be used for this are true black and whites which will, no doubt, demonstrate to the satisfaction of all that Holstein meat is good enough for any table.

This is an opportunity for the Holstein breeders that they should all take advantage of. It will be beyond all question, the largest gathering of Holstein men ever brought together. It will mean several big things to every state association. It will show what each state is doing in developing the breed. It will demonstrate the value of careful attention to details in the management of state sales. Aside from this it will bring the various states together and establish that pride within every state association that is so essential to success. Every Holstein breeder should plan to be in St. Paul from June 1 to 5, and get the vision of big things in breed development.—H. A. L.

Dairy and Hog Statistics.

The 1920 report of the tax commission has some very interesting things that bring out the important counties of Colorado, in the production of hogs and dairy cattle. Naturally with the advantages to be had from the combination of the dairy and hog business, one would expect them to follow hand in hand. The report does not bear this out. It is found that with few exceptions either of these industries is independent of he other so far as numbers of animals are concerned.

Weld county leads in numbers of both dairy cattle and hogs, having 13,007 of the former and 17,612 of the latter. El Paso county is second in number of dairy cattle, having 6,836 head. Yuma county follows Weld in number of hogs, having 12,150. Elbert county is third in number of dairy cattle, with 6,649 head, and Adams county is third in number of hogs, with 10,458. Kit Carson and Larimer counties are next in number of dairy cattle, having a little less than 6,000 in each case. Logan county has 9,248 hogs, and Morgan county has 7,424.—H. A. L.

Give the Cows Warm Water.

Every hundred pounds of milk contains eighty-seven pounds of water. The cow requires in addition, large quantities of water for carrying on her body functions. This water cannot be of any use to the cow until it is warmed. If it is swallowed ice cold it must be warmed inside the body. This gives the body a severe chill and requires a great deal of energy from the food to return it to the proper temperature. What are the results? First, the cow does not drink as much as she should and the milk production is limited. Second, a part of the food which should go to make milk is used to warm the cold water taken into the body and to overcome the decided chill imparted to the body. There are other more economical ways of warming water than by the use of expensive grain.

A group of cows drinking from an icy stream is a common winter sight in many parts of this country. In many cases these cows are driven half a mile or more for this privilege. In many cases the cows refuse, under such conditions, to drink as much as they should and are driven back to the barn to wait until the following day when they will be offered the same thing over again. A cow cannot be a heavy producer of milk under these circumstances.

The best place to water dairy cows in cold weather is in the barn. When running water is available this can be accomplished by installing individual drinking fountains or by watering them in a gutter-like manger. In this case the water will not need to be warmed as the water in pipes is not too cold. Individual cups have another advantage by allowing the cows to take small quantities at frequent intervals.

On many farms these conveniences are impossible. In such cases it is always possible to use a tank heater. There are several different kinds of tank heaters on the market which may be purchased at a moderate price. Most of them are satisfactory.—W. W. Swett, University of Missouri.

Weld County Breeders Dine.

The banquet of the Weld County Breeders' Association was held in the High School Auditorium at Greeley, February 5. The meeting was well attended and all enjoyed the spread prepared by the girls of the Home Economics department under the direction of Miss Turner. C. W. Henry acted as toastmaster. Prof. W. S. Hargrove of the State Teachers' College, and J. C. Muerman of the same school were called upon for talks. In addition to these speakers a number of other local men were called upon, including Mr. Harvey E. Witwer, Mark Bliss, manager of the Greeley Livestock Shippers' Association, H. D. Parker, and others. The business of the association was then taken up and disposed of. The association is well under way for progressive work and the interest is keen in matters that need their attention. The principal work before the association is the compiling of a breeders' directory, fostering boys' and girls' beef clubs in Weld county and the holding of a sale for the members. Prof. F. A. Ogle of the High School Agricultural department and Mason E. Knapp, county agriculturist, are assisting the breeders in their program of work.—H. A. L.

Shorthorn-Hereford Sale.

The second annual sale of Hereford and Shorthorn cattle will be held in Denver at the Stock Yards Stadium, April 7, 8 and 9. The first day will be given over to the Western Hereford Breeders' association, under whose auspices an exceptional offering will be made. This organization has demonstrated what they can do in conducting sales and the Hereford fancier will have an opportunity to get the best that is to be had.

The second day W. D. Warnock & Sons of Loveland, and Allen & Jay of Boulder will sell jointly some 60 head of breeding Shorthorns. Every one will remember the sale of Warnock & Sons held in 1918. Their offering averaged in the neighborhood of $1,200.

On the last day of the sale the Shorthorn Breeders' Association will offer a consignment from the members of that association. This association always selects carefully for their consignment sale which assures the buyer of getting something that is worth while.

All told some 200 head of breeding bulls and cows will be offered, representing both of the breeds. Coming at the time it does the interest should be keen in the offerings made.—H. A. L.

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Ozark Peggy Mercedes, a 20 Pound 2-Year-Old Winner of Economy Test in Milk and Butter Competition at National Western, 1920. Owned by Ben F. Simpson; Walter F. Ormsby, Herdsman.

Milking Contest at Stock Show.

The milking contest conducted at the National Western Stock Show was a practical one for a short period test, and some very interesting comparisons were brought out. The milk produced and the butterfat content was credited against a charge for feed and the economy of production thereby obtained. The price for skim milk was figured at 75 cents per hundred, and butterfat at 60 cents per pound. Feeds were figured at actual cost. In milk production the standing of the cows was as follows:

First—Ozark Peggy Mercedes, Holstein, owned by B. F Simpson, Denver, 295.1 pounds.

Second—Ismay Belle de Kol, Holstein, owned by B. F. Simpson, 294.5 pounds.

Third—Queen Hengerveld Korndyke, Holstein, M. E. Penrose, Denver, 281.8 pounds.

Fourth—South Anandaga Favorite, Holstein, Lohry & Wailes, Johnstown, 208.8 lbs.

Fifth—Jolly Oxford Buttercup, Jersey, A M. McClenehan, Greeley, 174.6 pounds.

Sixth—Kaleto's Idyl, Jersey, owned by R. C. Robertson, Trinidad, 121.3 pounds.

Butterfat.

First—Ozark Peggy Mercedes, B. F. Simpson, 10.040 pounds.

Second—Ismay Belle de Kol, B. F. Simpson, 9.524 pounds.

Third—Jolly Oxford Buttermilk, A. M. McClenehan, 9.202 pounds.

Fourth—South Onandago Favorite, Lohry & Wailes, 7.988 pounds.

Fifth—Queen Hengerveld Korndyke, M. E. Penrose, 7.324 pounds.

Sixth—Kaleta's Idyl, R. C. Robertson, 5.087 pounds.

In economy of production Ozark Peggy Mercedes was first, with a profit of $5.1323 over the cost of feed. Jolly Oxford Buttermilk was second, with a profit of $4.1848 over cost of feed. Ismay Belle de Kol was third, with a profit of $3.9418.

Ismay Belle de Kol won fame in Holstein circles when she took third rank in the seven-day butterfat test for cows not less than 8 months after freshening. In that test her record was 495.1 pounds of milk and 20.509 pounds fat. The two ahead of her by a very close fraction were the noted Du Pont cow, Emeretta Korndyke de Kol with 20.777 pounds, and Lady Mutual Friend, a Hargrove & Arnold cow with 20.669 pounds of butterfat. Mr. Simpson is justly proud of the showing made by his two splendid producers.

Barrow Shows Needed.

The Western Poland China Breeders' Association and the Colorado Duroc-Jersey breeders are encouraging the holding of barrow shows at the State fair and the next National Western. This is a move that should bring out some very valuable points to the various breeds. This feature is really one of the most important in connection with hog raising. It will bring out the practical phase of the industry. What the public is interested in knowing is what the various types of hogs will do in developing the meat producing animal. It will prove one of the most interesting and instructive features of the classification. All breeders of hogs should get behind the associations in assisting to make this a part of the show proper.—H. A. L.

Here's a Painter's Trick.

Many farmers do a good deal of their own painting, interior and exterior. An amateur painter cannot avoid getting some paint on the hardware, such as locks, hinges, handles, pulls, etc. This gives the finished job a blotched appearance and partly spoils the effect of the new coat of paint. Here is a little trick of the painter's trade that will serve the amateur painter well. Before beginning to paint the woodwork apply a coating of vaseline to the hardware; let the paint dry thoroughly; then wipe the vaseline off the metal parts and the paint will come off with it. This insures a neat, clean job of which the painter may be proud.

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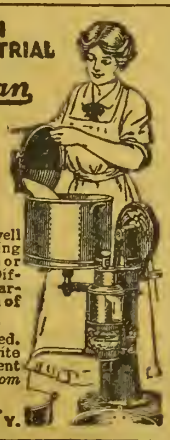

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Bowl a *sanitary marvel* easily cleaned. Whether dairy is large or small write for free catalog and monthly payment plan. *Western orders filled from western points.*
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Last FOREVER
Cheap to Install. Free from Trouble.
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$25.00 Sweep Feed Grinder | $31.00 Galvanized Steel Wind Mill.

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Two Essentials to Profitable Dairying

Good cows and a good milker—needless to say an Empire.

If you haven't investigated the Empire you know nothing about the profit possibilities of milking machines. Empires are in use in practically every important dairy section of the country. If you will write us we will send you the name and address of someone near you where you can go and see it work and talk to the man using it.

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The Empire milks them all—hard milkers, easy milkers, nervous cows and the stolid ones. Empire Teat Cups fit all the teats, slip on easily and stay put.

Our catalog 4-M tells you all about the Empire Milking Machine.

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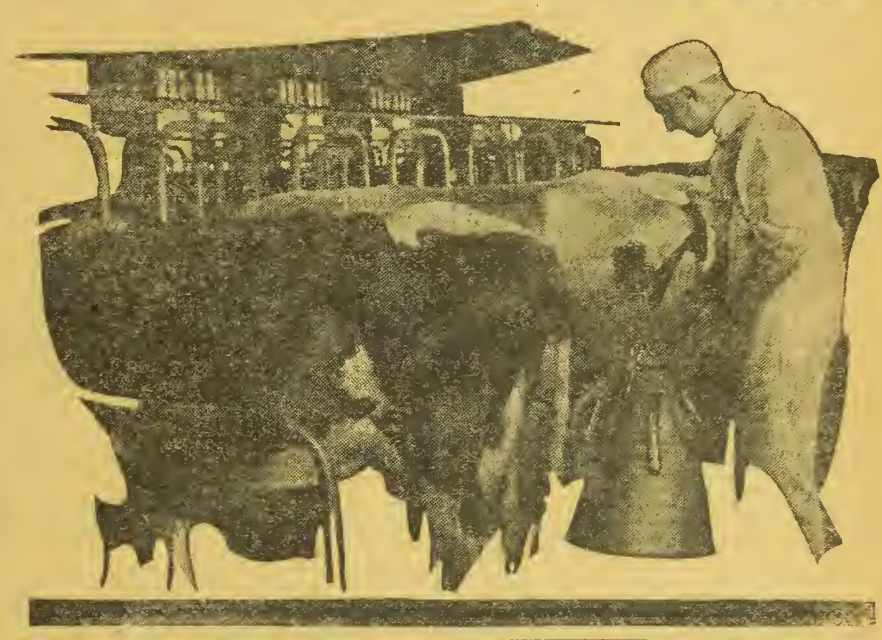

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"The Best Hog and Poultry Feed on Earth."

Just creamery buttermilk with the water removed and nothing added. The same as home churned. Contains high percentage of protein and natural lactic acid. Contains no sulphuric acid or other injurious preservatives. Natural lactic acid keeps it fresh indefinitely. Semi-Solid Buttermilk is pure enough to drink or use in batter cakes. Don't use a substitute or so-called modified buttermilk. Get the Genuine Semi-Solid Buttermilk, absolutely pure and unadulterated, for quick results.

Better Than Grain Feeds. Order a barrel of Semi-Solid Buttermilk (average weight 500 pounds). One barrel makes 1000 gallons of pure, rich, buttermilk feed. **Order today.**

CONSOLIDATED PRODUCTS COMPANY
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Have you had trouble or misunderstandings over the division of water for irrigation? Do you know if you are getting all the water to which you are entitled? The Burnham measuring device is the answer.

The R. Hardesty Mfg. Co.
1837 Market St. Denver, Colo.

We manufacture a complete line of Irrigation Supplies, such as Flumes, Pipe, Gates, and other accessories. Write for catalogues and information.

DO NOT FORGET TO ORDER THAT PLANO BINDER
While they last at $170
Small payment down, balance on delivery. All kinds of repairs carried.
DENVER IMPLEMENT CO., 1429 Wazee Street Denver, Colorado

Breeders' Consignment Sale.

The first general sale of purebred livestock under the auspices of the Larimer and Boulder County Registered Breeders Association was held at the Longmont fair grounds February 19.

The day was ideal, and the crowd was made up of about 350 farmers. The sale was managed by D. A. Jay of Boulder, who was assisted by County Agriculturists D. C. Bascom of Fort Collins and H. H. Simpson of Longmont. Mr. Jay and Prof. Geo. E. Morton were the pedigree men. These gentlemen understand pedigrees thoroughly and are to be commended on the excellent way in which they handled their work. It is certainly valuable to a purebred sale to have the pedigree clearly stated, as was the case at this sale.

Boulder county breeders have one of the best buildings in the state in which to hold a sale. The pavilion at the fair grounds affords a sale ring and accommodations for the sale stock that adds much to its success. The ground was covered with fresh clean shavings, making it warm and dry underfoot.

In this sale no time was lost in getting the stock to the ring. As soon as they were sold they were driven on through and their place immediately taken by the next arrival. This promptness adds a great deal toward efficiency in sale management. The animals sold were offered with a guarantee that they were breeders; a health certificate was furnished by the seller. The shipping of the animals was looked after by the management. Several different breeds of livestock were sold, domonstrating the combination sale idea very well. There is plenty of room for these sales among the Colorado breeders.

The prices received may not be considered high for the quality offered; however, the breeders have made friends that will stand them in good stead later on. The stock will be kept in Colorado and the greater part of it remains in the two counties.

H. E. Buchanan, Denver; Alpheus Bashor, Longmont; Joe Hayes, Loveland, and Col. Austin of Fort Collins were the auctioneers.

The average price on the various classes sold was as follows:

	No.	Average.
Jerseys sold	2	$102.50
Holsteins, cows	4	170.00
Holsteins, bulls	7	112.00
Percheron stallion	1	250.00
Suffolk stallion	1	255.00
Hereford bulls	2	112.50
Shorthorn bulls	5	158.00
Shorthorn cows	11	187.00
Duroc-Jersey sows	9	67.00
Duroc-Jersey boars	2	31.25
Poland-China sows	6	67.90
Poland-China boars	1	50.00

The detail record of the sale follows:

Jersey Bulls.

Collin's Vision 166614, consigned by C. J. Mather, Longmont, to Will Rothrock, Longmont, $100.

Holstein Bulls.

Sir Lagoda Georgie 290736, by H. R. Hankins, Berthoud, to Walter Bertle, Longmont, $60.

Friend Pontiac Albin 277950, by Marcus Harper, Boulder, to Lew Hertha, Berthoud, $150.

Graceson Canary Niwot 282030, by E. E. Johnson, Niwot, to Geo. Miller, Lafayette, $140.

Mechthilde Pontiac Artiis Lad 286989, by Lee Johnston, Longmont, to Walter Finch, Lyons, $130.

Winana Wayne Pontiac 286988, by Lee Johnston, to Fred Muhme, Longmont, $150.

Lucyra Johanna Fayne 276604, by Van Meter & Krebill, Loveland, to C. V. Parker, Wellington, $100.

Bull, by E. E. Johnson, Niwot, to O. Titman, $50.

Jersey Cows.

Mountain Mary 455039, by Geo. E. Morton & Sons to J. D. Pancake, Loveland, $105.

Holstein Cows.

Grace Fayne Canary 229379, by E. E. Johnson, Niwot, to O. Titman, Fort Colline, $150.

Aagie Howe Niwot 525190, by E. E. Johnson to Walter Finch, Lyons, $120.

Princess Winana Pontiac 322394, by Lee Johnston to S. B. Buster, Hygiene, $310.

Baby Segis de Kol Valley Hengerveld, by Lee Johnston to G. W. Abbott, Platteville, $100.

Hereford Bulls.

Curly 843974, by C. C. Stobbe, Fort Collins, to Geo. I. Miller, Lafayette, $125.

Chief 843973, by C. C. Stobbe, Fort Collins, to C. B. Harmon, Longmont, $100.

Shorthorn Bulls.

Highland Admiral, by H. F. Harmon, Boulder, to Jas. Forsythe, Longmont, $105.

Sultans Pride 786797, by Glen Martin, Boulder, to Geo. Lohr, Longmont, $155.

Royal Sailor, by David Warnock & Sons, Loveland, to Garfield Anderson, Longmont, $210.

Poudre King, by I. M. Watts, Timnath, to C. B. Harmon, Longmont, $125.

Bull by Louis Plinsk, Longmont, to William Eaddy, Platteville, $195.

Shorthorn Cows.

Lavender Gem 592143, by W. A. Dickens, Longmont, to J. M. C. Jones, Longmont, $175.

Scottish Orange 840494, by W. A. Dickens to Jay & Allan, Boulder, $250.

Cow with heifer calf.

Lady 168496, by H. F. Harmon, Boulder, to E. H. Allen, Boulder, $200.

Snow Flake 763019, by Glenn Martin, Boulder, to Bonvue Farms, Denver, $265.

White Beauty 763020, by Glenn Martin, to Frnk Pugh, Longmont, $110.

Royal Princess, by David Warnock & Sons, to Geo. E. Morton & Son, $155.

Princess Victoria 2d, by David Warnock & Sons, to Oscar Moseburg, Longmont, $135.

Royal Fashion, by David Warnock & Sons, to Wm. Dickens, $130.

Victors Rose, by I. M. Watts, Timnath, to W. A. Dickens, $190.

Gold Beauty 791864, by I. M. Watts, to Johnson Bros., Erie, $250.

Cow with bull calf.

Mary 8th 118275, by W. A. Dickens, to Frank Pugh, $200.

Percheron Stallion.

Vanguard 11th 107394, by David Eisele, Longmont, to E. Hutchinson, Longmont, $250.

Suffolk Stallion.

Elmlawn's Romeo 1037, by A. B. Hamilton, Loveland, to David Warnock, Loveland, $255.

Poland-China Boars.

Columbia Lad 106995, by J. A. Davidson, Longmont, to Bert Godhew, Louisville, $37.50.

Ben Hur 102778, by A. D. McGillvray, Boulder, to C. J. Mathes, Longmont, $50.

Poland-China Sows.

Lilly May 254576, by J. A. Davidson, to Mrs. J. R. Rigdon, Fort Collins, $50.

Bonnie Wonder 254575, by J. A. Davidson, to W. R. Brown, Longmont, $60.

Baldwin's Pride 200153, by J. A. Davidson, to W. R. Brown, $82.50.

Bessie Orphan 3rd 241633, by A. D. McGillvray, to B. D. Johnson, Niwot, $87.50.

Lot 51½, by A. D. McGillvray, to Dile Brockter, Yuma, $70.

Columbine Giantess 870158, by W. R. Reynolds, Longmont, to Ralph Cruse, Hale, $67.50.

Prince Lady 2d 875890, by W. R. Reynolds, to C. Joe Mathes, Longmont, $67.50.

Joes Quality Girl 875880, by W. R. Reynolds, to Newt Lewis, Longmont, $57.50.

Pearl's Lady 875888, by W. R. Reynolds, Longmont, to Walter Burtle, Longmont, $57.50.

Boar, by W. R. Reynolds, to Newt Lewis, Longmont, $52.50.

Duroc-Jersey Boars.

Boar, by Annie Liddle, Wellington, to M. P. Swanson, Berthoud, $40.

Duroc-Jersey Sows.

Grand Valley Girl 562616, by Godfrey Bros., Fort Collins, to D. A. Ward, Longmont, $125.

Rainbow Lady, by Godfrey Bros., to T. W. Stohr, Longmont, $37.50.

Miss Orion Defender, by Burt Hart, Longmont, to W. F. Lady, Parker, $32.50.

Miss Illustrator King 1st, by Burt Hart, to W. F. Lady, $55.

Miss Illustrator King 2d, by Burt Hart, to M. P. Swanson, $37.50.

Miss Illustrator Gano 743898, by Burt Hart to Col. Buchanan (for boy in country), $75.

Crimson Pet 807766, by Burt Hart to Lee Johnson, Niwot, $70.

Mabel's King 793342, by Burt Hart to W. F. Lady, $50.

Orions Willetta 590074, by Geo. E. Morton & Sons, to W. F. Lady, $20.

Ways of Ensiling Corn.

I am expecting to dig a pit silo and would like to know whether it is a gain or loss to put the corn in with the stover. The fermentation works a complete change and looks to a fellow up a tree like it would injure the food value of the grain, but without the grain would it improve the stover? What are the facts?—E. W. W., Mesa county, Colo.

The usual way is to cut up the entire plant, stalk and grain, as that makes a much better quality of silage than if the stalks alone are put up. It was the practice years ago to use only the stalks and leaves, the ears being removed before ensiling. This grain-free silage was then fed along with more or less of the grain separately saved. Tests by several of the experiment stations, however, showed that this was not a profitable nor economical way of using the corn plant. The Vermont experiment station found that one acre of green corn fodder, including the ears, reduced to silage was equal in feeding value to one and one-fourth acres of the silage from stalks which had been stripped of their ears and fed with the meal made by grinding the dry corn which was produced with the crop.

In the last few years a good many farmers in the cornbelt have followed the practice of making silage from dry corn stover that is left in the field until there is an empty silo to fill and the dry fodder is then brought in and put through the cutter and well moistened. It will undergo fermentation similar to that which occurs when the corn fodder is put in green. It is, of course, much more palatable and more readily consumed by stock than is the dry fodder or stover. In this way farmers can fill their silos two or three times a season, if they grow a sufficient acreage of corn. However, as before stated, the only real good quality silage comes from using the entire corn plant and harvesting this when the kernels have hardened and reached the glazed stage. Fermentation does not injure the food value of the grain in any way.

New Book On Hog Raising.

"Success With Hogs" is the title of a new book coming to us, written by Charles Dawson. This will be of interest and value to the hog breeder. The author has prepared a very practical book covering breeds of hogs, types, feeding, breeding, showing, housing and common hog ailments. It will be a valuable addition to the library of any farmer who raises hogs. It is brief but covers the subject completely. The price is $1.25 and it may be had from the Forbes and Company publishing house of Chicago.

Over 50 per cent of the lumber supply of the United States is located in the Pacific Northwest. Over half of this is Douglas fir.

How Many Miles From a Tire?

Do you know what mileage you get from a tire?

Do you know what mileage modern tires should give?

If not, get a Miller Tire. Watch the mileage. Compare it with the tires you use. It may change your whole idea on tires.

Twice Better

Miller experts, in the past few years, have almost doubled our tire mileage.

In our factory tests, which are extreme, we average 15,000 miles on Miller Cords, and 8,000 to 9,000 miles on Miller Fabric Tires.

Countless users, even on trucks, report 20,000 to 25,000 miles.

Many large users are making million-mile comparisons between all leading makes and Millers. And Miller Tires are winning.

Make One Test

A Miller Tire will show the maximum mileage under your conditions.

The mileage will depend on size, on load, on road and care. But you will learn what you should get on your car, and it may surprise you.

50% More Miles

Green & Swett Co. of Boston made hundreds of comparisons on big cars. They found that tire users, by adopting Millers, increased their tire mileage from 50% to 75%. And they eliminated blowouts.

You will find that the tread outlasts the tire.

You will find Miller Tires uniform. Every tire is signed by maker and inspector. Both are penalized if a tire falls down.

New-Day Tires

Millers are the new-day tires. We have spent ten years perfecting them.

In six years the demand has multiplied ten-fold. Last year alone it increased $11,000,000. Just because of the extra mileage Miller users get.

You should know these tires. They are saving millions of dollars to tire users. They are showing that defects can be avoided, and that tires can be dependable.

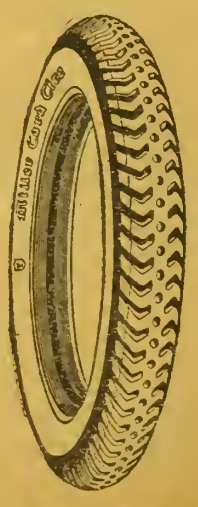
Test a Miller Tire.

If you buy a new car, insist on Miller Tires. Twenty makers now supply them without extra cost.

THE MILLER RUBBER CO.
Akron, Ohio

Tread Patented

Center tread smooth with suction cup, for firm hold on wet asphalt. *Geared-to-the-Road* side treads mesh like cogs in dirt.



Miller Tires

Now Everywhere Discussed

Geared-to-the-Road *Registered U. S. Patent Office* **Cords or Fabrics**

Clark's Travel Letter.

Pueblo, Colo., Feb. 25, 1920.

Dear Farmer Putnam:

I stopped off on my way to Rye, to see the livestock show and thought I would write you my impressions of it. It is simply immense, getting bigger and bigger all the time. The crowds were very large but they would have been larger if the Denver hotels had adopted better methods of doing business. The profiteer at home has so cowed the people that they sometimes will do without rather than run counter to him and that is why crowds were not in evidence at the Stock Show.

The exhibits were splendid and I was surely impressed with the livestock. That makes me think of our purebred sire crusade. Every farmer at the show who wanted a good sire could have got one and at very reasonable figures. I saw a top notch bull sell for $425. Why it was given away. Some of the Hereford bulls sold very high in the sale, but in the yards the prices were reasonable. The Hereford breeders have some wealthy people in their ranks and if they do pay each other a few thousand dollars for a sire, that does not mean that just as good sires cannot be had from other sources at reasonable prices. I overheard the remark that farmers cannot get good sires any more because prices are too high. I tell you Tom there is nothing in it. I saw a young yearling bull worth at least $1,000 sell for $300. The trouble is in not knowing a good bargain when it appears.

We are pushing a purebred sire crusade in the state and I hope that in a short time every grade and scrub sire will have been eliminated. Why think, the Colorado Horse Breeders' Association last week declared unanimously for only purebred sires on the farm. We must keep our heads at this time for in the heat of enthusiasm we may make a serious error—I mean, use purebred scrubs instead of grade scrubs. This would be a serious mistake and I notice that the breeders of inferior purebreds are taking advantage of this crusade and are beginning to move a lot of sires that should have been castrated long ago. There is more than one way to skin a cat, and you can't blame anyone for it either. If some fool offers me a good price for an inferior sire, I will sell it to him, notwithstanding that he intends to breed it to every purebred female on his farm. The solution of the problem is in education. When you see a man raising some line of purebred animals and raising scrubs in all other lines you can just bet your last dollar, that he does not know what purebred means.

Purity of breeding means superiority. A purebred steer should give the farmer better meat and more profit than a scrub. Purebred cows, horses, sheep, hogs and even poultry should be the most profitable. If they are not, then the purity of breeding idea should be abolished.

I have just finished reading a book on "Heredity and Environment," by a professor of Princeton University. He says, that domestic animals have been much improved during recent years through selection, but that there has been no improvement in human heredity since 300 years B. C. Too bad, Tom, but I think it is true. This writer says our apparently high civilization is due to improved environment and training and not to improved heredity. It is to be regretted that no thought should be given to improving human beings, the most important of all animals.

Later: I am at Rye holding an extension school and am learning what happened since I was last here. Paul Ray is still in the dairy business and has learned to appreciate silage more than ever. When his silage was all fed out his milk check from 13 cows decreased in two weeks $90 to $48.

The Rye creamery is a wonderful little plant. It opened in 1915 with an indebtedness of about $3,000. Since then it has added an ice machine and at the close of 1919 it was $5,000 to the good. It has always paid market price for butterfat and at the end of last year, out of its surplus, it paid the farmers an extra cent on each pound of fat delivered during the year. The creamery's success has been due to the good judgment and faithfulness of its buttermaker, Fred Swagart. Whenever a farmer's busines enterprise succeeds you will find good management the cause, and when a manager makes good he should be retained at any cost. Farmers as a class have a lot to learn in this respect. Sometimes I find little closed organizations of farmers who think they are a success by their profiteering on fellow farmers, but such organizations cannot be called a success. To be a success all farmers must be benefited and this can be accomplished only by real service and by continuous unselfish leadership.

The farmers at Rye have a bank now, are consolidating their schools and are in a good way to make their community one of the best in the state.

R. W. CLARK.

Boxed Apples or Bulk?

ALFRED M. WILSON.

Practical, far-seeing apple growers realize, I think, that the future of the apple industry, at least so far as the west is concerned, depends upon their apples being properly sized, properly graded, and properly packed. In no other way can a demand for their apples among responsible dealers be created and maintained. But at any rate in the Grand Valley of Colorado it is a condition, not a theory, that confronts us. Here in the Valley the growers are more and more selling their apples in bulk. It was different a few years ago; but at the present time the trend is all in the opposite direction.

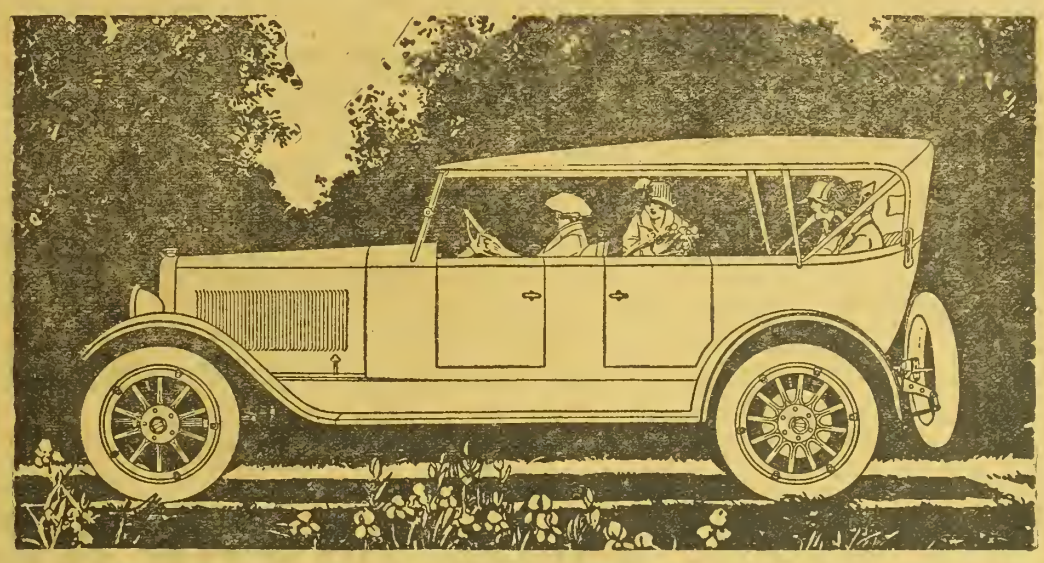
This trend may be traced to several causes: (1) the scarcity and high cost of labor in general; (2) the increasing difficulty of getting women to serve as packers; (3) the unwillingness of many growers to pay experienced women packers what their services are or should be worth; (4) the poor quality of the work of too many packers who are paid even more than their services are worth; (5) the fact that apples sold in bulk are as a rule sold for cash, while boxed apples are also as a rule consigned and are in consequence subject to delay and to the uncertainties of the market; and (6) an increasing lack of confidence in the whole policy of consigning fruit to any association or to any set of men.

Some growers are also, I am sorry to say, influenced by another consideration. Apples sold in bulk are either orchard run or the three grades only. Growers such as I have in mind, when for a certain price per hundred agree to deliver only the three grades, seem to think that they are privileged to put in as large a number as possible (that is, so they don't get caught), of apples below the C or third grade, and that by so doing they are merely getting one over the buyer. But what fools such growers are! The buyer is onto the trick and takes it into consideration when quoting a price to the grower. He offers less than he would have offered if he had been absolutely sure that the grower would deliver exactly what he had agreed to deliver. In other words such growers, in order to have the satisfaction of getting in a certain number of cider apples where they do not belong, depress the price of their extra fancy, fancy, and C-grade apples, thereby playing into the hands of the buyer, who, if the game is not too raw, will wink at it, knowing that even so he will come out way ahead.

But whatever the reason or reasons, the growers may have for selling their apples in bulk, apples so sold do not always go out of the valley in bulk. During the past season two commission houses doing business in the Grand Valley bought apples in bulk and then before shipping them out graded and packed them on their own platforms. One of these houses sent out fifty cars of apples so graded and packed. Apples that go out from Clifton, or Palisades, or Grand Junction, in bulk, do not always reach the ultimate consumer in bulk. Jonathan apples, for example, shipped in bulk to Denver, were there sorted and graded and packed before being turned over to the trade. These facts are, so it seems, if not decisive, at least significant in their bearing upon the question as to whether we should dispose of our apples boxed or in bulk.

CHANDLER SIX

Famous For Its Marvelous Motor



Chandler Leads Where Performance Counts

WHEREVER men ask much of their automobiles the Chandler dominates. In the mountain countries it performs as many cars with larger motors do not perform. Climbing steep grades with the sharpest turns on high, creeping up and up at six or seven miles an hour on high without a miss or a skip or a sign of effort, where others shift, the Chandler holds for its driver the thrill of really satisfactory motoring.

In country roads of mud or sand, and in the congested traffic of crowded city streets, this same power and this same flexibility show their qualities.

The Chandler leads the whole six-cylinder group so distinctly because it is such a *good* car and so fairly priced.

There's no better time than *now* to place your order.

If You Do Not Know Your Chandler Dealer
Write for Catalogue Now.

SIX SPLENDID BODY TYPES

Seven-Passenger Touring Car, $1895 *Four-Passenger Roadster, $1895*
Four-Passenger Dispatch Car, $1975
Seven-Passenger Sedan, $2895 *Four-Passenger Coupe, $2795* *Limousine, $3395*
(All prices f. o. b. Cleveland)

CHANDLER MOTOR CAR COMPANY
CLEVELAND, OHIO

Pruning Fruit Trees.

One of the main objects in pruning young trees is to assist in the development of a strong framework for the later support of fruiting wood and fruit. It is desirable that this framework be developed as quickly as is compatible with a proper maturing or ripening of the wood in the fall. The main scaffold limbs and their branches which go to form the framework of the tree are developed from shoots. That is, in the young apple tree the shoots of one season become the limbs of the next season. Consequently, any practice which promotes a strong, vigorous shoot growth in the young tree is a direct aid in building its framework. It is a well-established fact that comparatively heavy pruning is a great stimulant to shoot growth, a stimulant in the sense of causing larger and stronger, though fewer shoots. In other words, while heavy pruning does not cause the tree to produce more total shoot growth, it reduces the number of new shoots and those which do grow are correspondingly longer and stockier. In the very young trees we expect to retain only a few shoots, enough to form the main scaffold limbs and their branches, and we want these to be as strong and vigorous as possible. Hence, we desire only a few to form, perhaps twice as many as we wish to retain, thus giving us a choice in order to secure their best possible distribution from the viewpoint of training.

In the case of the tree a little older (three or four years) we expect to retain a larger number, and also a larger proportion of the shoots, because then we are developing the branches and sub-branches of the scaffold limbs; and we still want enough shoots produced so that some choice may be made between them. With these general considerations in view it becomes evident that the very young tree should be pruned severely, but as it becomes older and larger pruning decreases in severity. It is impracticable to attempt to reduce this general principle to a definite rule to be followed with all trees. Good judgment should be exercised in its interpretation. However, it may be a kind of a guide to some to state that the amount of pruning to be given after the first year's growth in the orchard should in average cases remove perhaps three-fourth of the shoot growth of the preceding year; the second pruning should remove perhaps two-thirds of the shoot growth of the second season; the third pruning should remove a half to two-thirds of the shoot growth of the third season; and a fourth pruning probably should remove something less than a half of the shoot growth of the fourth season. Pruning the fifth and sixth seasons should be somewhat less severe.

When it is suggested that the first pruning should remove approximately three-fourths of the shoot growth made by the tree during its first year in the orchard, this does not mean that three-fourths of all the shoots should be cut out of the tree. Probably a third to a half should be removed, and the remainder cut back to a half or a third, or in some cases a quarter, of their length. In other words, the pruning should consist partly in a thinning out and partly in a heading back. The same statements hold for the pruning of trees a little older, except that as the trees become older relatively more of the pruning should consist in thinning out and correspondingly less in heading back.—V. R. Gardner, Missouri College of Agriculture.

Starting Spring Operations on the Dry Land Farm.

(Continued from Page 4.)

more precipitation falls than in the summer months, and where this is the case it pays to plant early. Some day perhaps the weather bureau will be able to foretell the season and then we will know exactly what to do!

The best implement for planting small grain is the press drill; but care must be taken in planting alfalfa and the other small seeds not to use this implement in clay soil when the surface is wet, for if a crust forms, which often happens after a short dry spell, the seedlings may not be able to break through and the stand may be ruined.

The best depth to plant small grain in dry farm land is about three inches. The reason is that at this depth any shower which goes deep enough to sprout it will supply enough moisture to carry it until the roots get down to the damp soil below. If the seed is planted shallow in dry weather it is liable to sprout and dry out between rains. Winter wheat, when planted deep, does not freeze out so easily and can be thoroughly harrowed without danger of dragging out.

Harrowing Grain Crops.

Does spring harrowing help grain? It is easy to conduct a series of experiments some particular season and prove that it does. It is also easy to do the same thing some other year and prove that it doesn't. That is the way with many operations on the dry farm. The farmer must use his judgment. When grain has been pastured the cattle should be taken off when the thaw commences and, as soon as the soil is in condition, it should be thoroughly harrowed. When heavy rains have settled and compacted a field it should be loosened up again as the dry spell approaches. When there has been nothing but soft snows and light showers harrowing is not needed, for these have a mellowing effect on the top inch, and any cracks which have been started by one shower become filled up by the next. There are some soils which never need harrowing when in grain. They are light silt or sandy loams which possess the faculty of slaking or disintegrating after having run together from the effects of precipitation. Men farming these soils will probably tell us that grain never needs harrowing and as far as their local conditions are concerned they are right.

Of the crops planted in late spring and early summer corn seems to be still holding its own, and where it can be raised as easily as milo or Kafir, it is the best all around crop of the three. Minnesota 13 has made some fine records both for grain and ensilage. This is a splendid short season corn of the best type and well worth working on, and in a few years can be made a heavy yielder. While selecting the finest and best ears for seed it should be noted than inbreeding (allowing the plants from the same ear to inter-breed without ever introducing new blood), will eventually reduce the vigor and curtail the yield; it will commence to run out instead of improving. The proof of this is the well known fact that if two varieties of corn are crossed the yield will be greater than that of either of the parents.

The writer, who has raised corn for about forty years and is still raising it, tested this and found it correct, but he also discovered than when a cross is not desired almost the same results can be obtained when breeding true, by introducing fresh blood from another soil and locality. One way of doing this is to swap seed corn with some other farmer, half of yours for an equal amount of his, and mix and plant as usual; but the best way is to reserve the finest acre on the ranch for seed corn and then plant one row of his corn and one row of yours alternately, then detassel all of your rows. All the corn on them will then have been fertilized from the pollen on the corn plants newly introduced and the seed resulting from this blending of new blood will show more vigorous growth and larger ears, particularly if your stock is old and has been inbred for years. Inbreeding is just as bad in the vegetable kingdom as it is in the animal.

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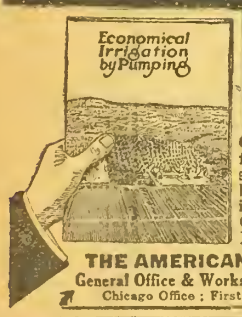

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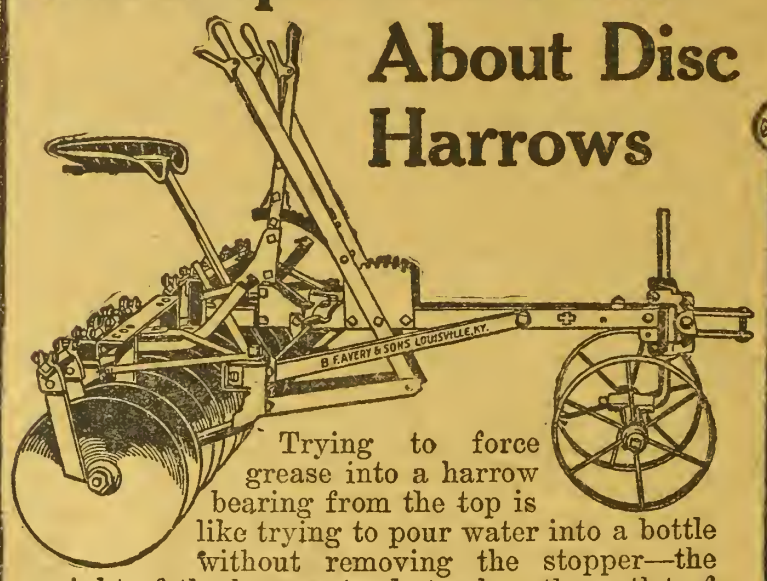

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Protein Feeds Defined.

E. J. MAYNARD.

So much has been written of late concerning the quality of protein in relation to the feeding of livestock that it appears necessary to simplify the explanation of these technical experiments in order that the feeder of today may benefit by the remarkable discoveries which have recently been made.

The idea here is first, to give a simple explanation of the facts concerning protein digestion and absorption and then with these facts in mind to show just how these same facts can be directly applied to the practical feeding operations being carried on today.

The protein contained in any feed is made up of very small particles which are called molecules. Each of these molecules in turn consists of a set of smaller particles called amino acids. If the protein is complete each of its molecules consists of a full set of amino acids or, to be specific, 18 in number. Many proteins, however, are incomplete, their molecules consisting of only 14 or even less of these amino acids. The protein in corn, for instance, is a good example. Its molecules are lacking in two of the amino acids, namely, tryptophan and lysin, and because these two are essential to produce proper growth in the animal body their absence makes this a poor quality of protein. This has been shown by feeding corn with no protein supplement. Although it contains 7.5 per cent of digestible protein, it has apparently no power to build muscle and bone, and animals remain small and become stunted, though fat, when fed on it alone. Take gluten meal, a by-product of the corn grain, this contains over 30 per cent of digestible protein; more, in fact, than is found in cottonseed cake, yet when fed alone to pigs they still remain stunted. This is without question due to the absence of the two amino acids mentioned above. In fact, none of the cereal grains contain efficient proteins. Complete proteins known at present are those found in milk, soybeans, cottonseed, peanuts, Brazil nuts, hempseed and tankage. The molecules of all other proteins in feeds are apparently lacking in one or another of these amino acids, and even in these complete proteins certain amino acids may exist only in very small amounts. However, different feeds, as a rule, lack different amino acids. When a feed is eaten the digestive juices act upon the protein molecules and break them down into amino acids. When these amino acids reach the small intestine they are taken in through the walls and are taken into the blood and here the amino acids are again built up into protein molecules and distributed where needed throughout the body to make muscle and flesh.

Now, if there are a good number of the 18 amino acids in the intestine, when they are taken up they are built into complete protein molecules and the body is benefited thereby, but if some of these amino acids are lacking only a limited number of these complete molecules can be built up and consequently the rest are lost.

Tankage consisting, as it does, of a former part of the animal body, contains these complete protein molecules and this is the reason for its great efficiency. The quality of its protein is of the best.

Linseed meal, being of vegetable origin, does not contain a full and perfectly balanced set of the amino acids in each molecule. Therefore, when pigs are fed corn and tankage they will always make greater gains and generally more efficient gains than when fed corn and linseed meal.

The idea is, first, that there are only a very few feeds where the protein molecules contain all the essential amino acids. At the same time, however, some feeds may contain a good quantity of some of these amino acids, while other feeds may "jibe" perfectly with them by containing a large amount of the amino acids that the first ones lack.

It is easy to see how the molecules, produced by a mixture of these protein feeds, would be far greater in number than where one of these feeds was allowed alone and this is the reason for the statement that "small amounts of a superior protein are often just as efficient for growth as larger amounts of a less adequate protein."

Now, the way in which to provide the nearest possible complete set of amino acids for the animal in order that it may build up complete protein molecules in the body is to feed a mixture of protein-containing feeds so that the amino acids lacking in one will be found among those contained in the molecules of the other and the maximum efficiency of all be produced. Hence, a ration consisting of alfalfa hay and corn silage, when fed to fattening steers can be made much more efficient by the addition of a small amount of cottonseed cake, for the simple reason that the protein, coming from two sources, will allow a better quality of protein molecules to be built up in the body for its use.

With these principles in mind, it can easily be seen that frequently the addition of a small amount of another protein feed, even though the cost may be high, will so increase the quality or efficiency of the protein supplied the animal that the results secured will much more than pay for its addition.

I consider Western Farm Life a valuable magazine for any one interested in the livestock game, and would not be without it. Wishing you continued success and prosperity in your new location, I am, yours truly.—G. M. Stewart, Castle Rock, Colo.

Combatting Weed Pests.

(Continued from Page 17.)

keep its leaf surface reduced to the point of injuring the roots. Young alfalfa is often benefited by cultivation chiefly through the removal of weeds.

It is possible to secure seed free from noxious weed seeds. Dirty seed can be made clean. Moreover, it is possible to do seed cleaning at home. A fanning mill properly operated will do the job. There should be a fanning mill on every farm. It is far easier to remove weed seeds from your crop seeds than it is to take the weeds from the fields. There are many kinds of efficient hand and small power mills suitable for home use. A fanning mill will pay for itself in increased profits in one or two years. Install a fanning mill as an indispensable part of your farm equipment. The chief dockage in Colorado grain is wild oats. This can be entirely removed by careful fanning, so that not a single weed seed is introduced in the soil at planting time.

Farm Letterheads.

"A neat, well-worded letter head is the first kind of advertising for the progressive farmer. The name of the farm is the big feature of the well-planned letter head, the product is second, and the farmer's name third in importance. A short, snappy, easily remembered slogan often adds to the force of this letter advertisement," says A. W. Hopkins of the Wisconsin College of Agriculture.

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Am sending one dollar for a renewal of my subscription to Western Farm Life for two years. I like the paper fine. It's a dandy. The only fault I see about it is it don't come often enough.—J. F. Irwin, Willard, Colo.

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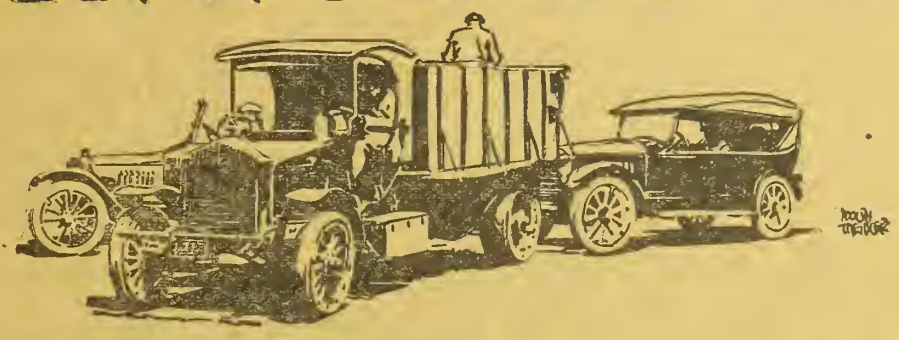

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Witch's Island.

(Continued from Page 10.)

"I do," I cried.

Then the second man spoke—to his companion, but I heard him. "She's signalling again. Stop this nonsense."

Involuntarily, I glanced seaward. As I did so, I caught a sound just behind me. I tried to turn in time to meet the new danger, but was too late.

Something struck the back of my head with stunning force. I pitched forward upon my knees, swayed uncertainly for a little, then crumpled up, face downward, on the sand.

CHAPTER XIII.

Storm Bound.

How long I lay unconscious I do not know; nor can I be sure how many hours wore away, when, having in some measure come to myself, I began to make slow and painful journey along the beach, so slow was it indeed, that day had broken when I crawled into sight of the tents, and I had not yet reached them when Grayson found me. With his help I was able to stagger to the hut, but other hours went by before he could glean from my broken and incoherent words the story of my adventure and disaster.

Meanwhile he had done what he could to relieve my suffering—and that was little enough, though through no fault of his. There was no wound to be dressed, since although there was a swelling on the back of my head, the skin was not broken.

"Sandbagged!" was his verdict, and, doubtless, it was correct. "The fellow who did it knew his business," he added, and again I could not question the truth of the statement. My head ached dully. There was a heavy weight upon my limbs, which seemed to increase until mercifully I fell into a coma-like sleep, from which I awoke to find him sitting by me, his brow furrowed and his gaze fixed upon my revolver, which he had found lying on the beach where I had been dropped. He had found, too, marks of the boat's keel on the sand and the footprints of the men who had launched her, after disposing of me. There had been three of them, evidently, but there our knowledge of the raiders ended.

Of their purpose he had gathered no clew. Of their identity he had no suggestion. The voices I had heard had been the voices of white men—Englishmen or Americans—but this merely barred the crew defeated in the skirmish on the wreck and did not greatly narrow the field of conjecture.

"The Zenobia figures in the affair in some way, that's a thousand-to-one probability," he declared. "But how does she figure? There's a riddle beyond my guessing."

I tried to nod agreement, at cost of a shooting pang instead of a dull ache. "There's—there's the girl," I suggested.

"Meaning that they're looking her up? Friends of hers, for example, who wish to be sure that she's come to no harm, but don't care to intrude upon her? Umph! Possible but doubtful."

"Any mystery—woman generally at bottom of it."

"Granted, as a general proposition. Somehow I think this is an exception."

I thought this over, in muddled fashion, for some time, then drifted off at a tangent.

"The wreck, Grayson? You've stopped work? No need of that, I'll do well enough here."

He smiled a bit grimly. "It's a day off. No; not because of you, altogether. Stress of weather. The Pera's gone.'

"Gone?" I repeated, aghast.

"It's fixing for a blow, and this is no landlocked port. The skipper was right. It behooved him to get outside where there's elbow room, anyway. Jose is with him."

"But——" I began.

"Don't worry about 'em. They'll ride out anything that'll come along at this season, and then it'll be merely a beat back, even if they're blown off."

"But, meanwhile——"

Again he stopped me. "Meanwhile, we'll patch you up, Scott. That's the first and most important job on hand."

I closed my eyes, to open them in a moment. "But the girl and Hoban? They'll commandeer our outfit."

"Not they! They're law-abiding folk, I'll have you to understand. Oh, being ruman. I'll own to suspicions that wronged 'em. I've kept more or less of an eye on their operations, and they've stayed aft on the wreck, though to tell you the truth, they'd be better off ashore with the sort of weather that's brewing."

As if to give emphasis to his observation, a puff of wind—a small squall—swept over the island. For a moment or two it blew hard, whipping boughs of the overhanging trees against the roof of the hut.

"There you have it, Scott; that's the overture," said Grayson. He moved to the door, hesitated, glanced at me with an odd look on his face, then strode down the path. Presently, he was back, but tarried only long enough to tell me that the others had taken warning and were coming ashore. Then he was gone again, and I was closing my eyes with a feeling of vast indifference to wind or weather or anything save the dull, steady beat of a hammer in my head.

There came another squall, longer and fiercer than the first, and with it rain, a tropical shower, bursting like a flood upon the island. Outside the door a gray curtain seemed to form. Through crevices in the roof, which I had mended with such care, little streams found a way and poured in slowly growing volume upon the floor. Outside was the shriek of the wind, rising shrill above the creaking of the trees bowed before the blast, and the lash of limbs against the hut.

Of all these things I was conscious, but by none of them was I greatly disturbed. The tumult without was no worse than the monotonous throbbing in my brain; the hut might tremble in the blast, but still it held; none of the rivulets from the roof chanced to be cascading upon me. It might blow, and be hanged to it; and the rain might fall like Niagara, for all I cared. And then, of a sudden, I was struggling to an elbow, and trying to rise, and sinking back again—staring in bewilderment at Grayson, who had staggered into the room, bearing in his arms no less precious a burden than Miss Edith Perham.

He bore her in his arms, I say; and, wrapped about her, as protection from the storm and, it may be, as an effective obstacle to efforts to escape, was a piece of canvas, very like part of one of the tents which had stood upon the beach. Once within the hut, he set her down, and courteously fell to removing the folds which had been about her, stepping back at last, when the task was done, and, as I fancied, avoiding her eye. Not that I blamed him, for it was a flashing eye and filled with wrath.

"Sir, you forget yourself! It was unpardonable rudeness, a brutal exhibition of superior strength!"

Had I been in his place, I should have quailed ignominiously before her glance and tone. As it was, there was defense as well as apology in his speech and bearing.

"I regret the necessity, but necessity there was. You would have been drenched in another moment. Your tents were ripped, there was no shelter for you short of this place."

"As if there were not worse things than a drenching—things I abhor a thousand times more!"

He flushed at the thrust. "I am sorry, then, that in haste, I made so poor a choice of evils for you."

"And I am sorry, too," she said. She might have gone on, I dare say, had there not been an interruption, furnished by the faithful Hoban, who came striding stiffly up the path and stepped into the hut. He was as wet as if he had been dipped in the sea. Water dripped from his hat brim, and ran in streams down his cheeks and chin; his clothing hugged his limbs like the bathing suit of a swimmer; pools formed about his feet, as he stood, a soaked suitcase in either hand, awaiting his mistress' orders.

"Hoban!" She spoke the name with a queer little gasp, with a hint of hysterical amusement.

"Yes, Miss Edith," he answered, in his husky, respectful voice.

"You see the state he is in," said Grayson, quietly. "As he is, so might you have been."

She stamped her foot. "As if I should have cared!"

"Nevertheless, I should," said Grayson.

At that she turned her shoulder to him, rather patently. "Hoban, you're a treasure to think of the cases! Put them where you please.

"Thank you, Miss Edith." He set one of his burdens in a corner of the hut, placed its mate beside it with mathematical exactness, stood at attention. "What next, if you please, Miss Edith? Shall I fetch the rest of the luggage?"

A moment she hung in the wind. It seemed cruelty to mankind to send a fellow being out into that ferocious downpour, but Hoban was so thoroughly soaked that another wetting could hardly matter.

"Begging your pardon, Miss Edith," he suggested, "there's a box or two that ought to be under cover as soon as may be."

Still she hesitated. Hoban began to wriggle, I saw his hand steal to a pocket, and reappear empty. Thereat he writhed and shook his head jerkily. A stream larger than common had picked a course down his nose, and was making him most uncomfortable. Manifestly, he had lost his hndkerchief, and was in dire straits to discover some method of combining relief with due regard for decorum. His plight, visible even to me, was not lost upon the girl.

"Thank you, Hoban," she said with decision, "it will be best to bring in the boxes. And as soon as you please, of course."

Two stiff strides carried him to the door, and another through it into the rain. Miss Perham turned to Grayson. The fires of wrath had faded, but the line of her mouth suggested resolution.

"You will forgive me for what I said. I spoke in haste, and without weighing your very practical kindness."

"I assure you I merely wished to render a practical service," he told her.

Her glance roamed the single room of the hut, and rested upon me, lying in the bunk against the wall. I suspect she had been unaware of my presence.

"Your—your friend is ill?" she asked Grayson.

"Disabled, I am sorry to say."

"By an accident?"

"By mishap."

To my surprise she crossed to me, and laid a hand lightly on my forehead.

"What are you doing for him?" she said, with a shade of accusation.

"Why, not much," Grayson confessed. "He's resting, and—and——"

"And I'm all right," I protested, feebly.

To protest and confession she gave equally little respect. She bent over one of the cases Hoban had set so squarely against the wall, opened it, and took out a leather-covered box.

"My medicine chest," she said, crisply.

"Are you a physician?" Grayson asked.

"No, but I took the advice of one and provided myself with simple remedies for ailments one must risk on such a venture as mine. And I have always been interested in nursing. At one time I expected to make it my occupation, although——"

She broke off abruptly, conscious, it may be, that she had been led into something verging upon personal confidences.

"I shall be very glad to have your opinion of Scott's case," Grayson assured her.

She bent over me, and I felt a clinical thermometer pressed gently between my lips. Then her hand again rested on my forehead. There was something magically soothing and comforting in the touch—something which seemed to still that infernal, insistent, persistent throbbing in my brain, even as it made me forget the beat of the driving sheets of rain and the howl of the gale through the trees.

"I—I'm all right now," said I, thickly but contentedly. "No, no! Don't take your hand away. It—it's so soft and cool, and delightful, it—it's curing me."

And then, to make sure that the treatment should not be cut short, I laid hold, though gently, upon her wrist. And thus Hoban found us, when again he entered the hut, his arms filled with packages and water streaming from him and his freight.

Dumbfounded he may have been by what met his eyes, but discipline rose superior to all disturbing emotion.

"Here are the boxes, Miss Edith," he reported. "And where, please, shall I put them? Beside the suitcases? Thank you, Miss Edith, thank you!"

CHAPTER XIV.

Of Debt and Debtors.

I was better in the morning, a deal better, thanks in part to a skull of substantial thickness but more to the assiduous, sympathetic, and untiring attentions of Miss Perham.

As physician and nurse combined, she took full charge of the patient, the hut being turned over to her for hospital uses, and Grayson and Hoban finding shelter in a near-by shack, hastily contrived by the former and erected by clever use of tree trunks and what canvas was left of the tents. The worst of the gale had blown itself out by mid-afternoon and the rain had ceased. Though there was a stiff breeze throughout the night, the pair fared not so badly in their improvised shelter. At least, so Grayson declared, when he paid me a morning visit. He looked me over

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pretty closely, and told Miss Perham she had wrought wonders.

"I don't think there's concussion," he explained. "Scott's eye seems to be clear enough. We ought to have him on his pins again in a day or two. Meanwhile, I'll fix a place for him out of doors—you'll be entitled to some undisturbed rest after a night on duty in the sick-bay."

She cried out in protest at this, but he was insistent.

"We'll turn this mansion over to you, of course. Nothing else to do, no other place for you to go. Your tents are the past tense, if you'll pardon a poor joke. We'll fix a lean-to for Hoban right by the door, if you wish, and Scott and I'll set up housekeeping somewhere in the neighborhood."

In the end he had his way, which was, as a matter of fact, the sensible way. A hammock was rigged for me among the trees, and when I was safely stowed in it, the hut was entirely at Miss Perham's disposal to make up the sleep she had lost in my behalf. I trust that she did so; I know when I next saw her it was noon, and she was quite her normal self—fresh, erect, unwearied, steady of eye and voice, self controlled and self-possessed — and altogether unchanged in her opinions of her rights and ours.

There was no complaint to make of her manner while she dealt with me as an invalid, taking my temperature, renewing bandages, measuring out a dose of the medicine yielded by her useful chest —all tasks performed with unfeigned solicitude—but when these things had been done, the situation altered, and not for the better. She was turning away, in fact, when I halted her.

"Don't go," said I. "Lets talk things over."

She paused, reluctantly. "Is it necessary—or advisable?"

"It is both," I told her. "I'm too grateful for what you've done for me not to wish a chance to reciprocate."

A fine furrow showed between her brows, but I hurried on. "I'll be on my feet again in a day or two. That's a fact, isn't it?"

"I believe it is. Certainly your temperature shows improvement. It was sub-normal yesterday—from the shock, of course.'

"Then," said I, "we'll be turning to as before, for I reckon our schooner will be back. And I can't help wondering if it is really inevitable for us to work at cross purposes."

Up went her firm, well-rounded chin. "Yes, unless you are ready to cease trespassing on my property."

"Why not waive that question?" I urged. "You're busy at one end of the wreck, and we're busy at the other."

"Mr. Scott," she said, deliberately, "you spoke just now of reciprocating favors. You are not in my debt. You have surrendered your cabin to me. In the circumstances I am forced to accept it and I have been very glad to seize an opportunity to be of some slight service to you as—as——"

"As a way of paying the rent?"

"Yes—to put it plainly."

"And, having paid, you don't care to recognize your landlords in the role of neighbors?"

"I insist upon my legal rights."

In this talk we had been eyeing each other unwaveringly, and I had heen fully aware of the changes in her expression. Now it seemed to me determined to the point of belligerency and coldly critical of my personal appearance.

"I guess I'm practically cured," said I. "Anyway, my pathological appeal has vanished—I can see that well enough. And I'm not exactly presentable, I know. I look like a tramp. You've never really been able to overcome your repugnance —I don't blame you, though. Also, you don't trust me, and here again I offer no criticism. I think you're wrong, but there's no evidence to prove your error."

She was still regarding me with no increased favor.

"You may draw such inferences as you please," she said, coldly.

"How about Grayson?" I put the query bluntly, gruffly, rudely, it may be.

"The same privilege is his."

"And much good will it do him, or me, or anybody else!" said I, grumpily. "It's all a tangle, and a needless tangle at that. We ought to be able to straighten it out, to come to some compromise, some agreement."

"Never!" she said, with spirit. "Never, unless first you quit the wreck."

I sank back in the hammock, not greatly surprised by her attitude, but none the less incapable of combating her stubbornness.

"Tell Grayson that," said I. "He'll be here in a moment, he's coming up the path now."

But she didn't wait for Grayson. She had vanished into the but before he joined me, and dropped to the ground beside the hammock.

My report of the conversation with the young woman he heard through to the end without interruption.

"Well, there's more or less to be said for her point of view," he remarked. "Gratitude never had much standing in court. And she prefers to pay bills and have 'em paid, rather than swap presents. I dare say it keeps the accounts straighter."

"Maybe," I agreed, then harked back to the old question: "What are you going to do about it?"

"I? Nothing."

"What can she do?"

He shrugged his shoulders. "The same."

"Then what happens?"

"Your imagination should be as good as mine."

"What has happened—this morning, I mean?"

"Hoban has been pottering about, drying their effects in the sun and cleaning up like a good housekeeper. I've been aboard the wreck, putting things to rights. Oh yes, there was a lot to do—odd chores mostly. There was a pretty lively sea running in the pond, you see, when the gale was at its height, and it broke over the hulk as it would over a reef. Deck's stripped barer than ever, but the diving outfit hasn't been damaged. Hurricane, was it? Oh no, not even the tail of one. Just a good full-sized gale. If it had been the other thing, you'd have seen some fancy work among the trees on the island. As for the hut—well, the walls might have stood, but there'd have been a wholesale roofing job for somebody.

"And the Pera?"

"She should be all right; the skipper knows her like a book. I'm counting on his coming back not much the worse for wear and tear, and then we'll all buckle to with a will and make up lost time. Be in shape to lend a hand, will you?"

"Ought to be; believe I'm discharged from hospital," said I, grimly, and put a leg over the side of the hammock, following it with its mate and getting upon my feet without difficulty. "Save for a little dizziness and a certain languor, I'm in shape for duty."

"Good!" he said. "Luck's been with you, Scott. That was a nasty crack you came by.'

"I'd give a heap for a chance to return it!"

'Doubtless. Can't help you there, though I share your longing."

"No new clew, then?"

"None at all. Beats the Dutch, the whole affair does; the landing by night, the prowling about, the assault when you held 'em up."

"As has been pointed out, there's the woman in the case," said I.

"There is!" he said shortly.

"On the common theory, she may have had something to do with it."

"She may," he said, thoughtfully. "She may, not of intention, you know, but still effectually. It's hard to regard Miss Edith Perham as backed by midnight assassins, but—but—well, I fancy, all in good faith she and her man Hoban may have done far too much talking."

CHAPTER XV.

The Toilers.

And now Fortune's wheel turned in our favor. Early the next morning the Pera hove in sight, little the worse for her bout with the storm, and by ten o'clock our reunited forces were at work on the wreck.

Grayson drove us, but drove himself most of all. He was gaining skill as a diver, and made so much better progress in his attack upon the barrier that by night we were encouraged by his report as well as by the size of the heap of debris we had hoisted through the hatch.

Miss Perham and Hoban had resumed operations earlier than we, but without much to show for their pains. In the afternoon they knocked off for a time, which was devoted to a consultation. The man appeared to he urging something, to which the girl at last gave reluctant consent. Then Hoban waded forward, stood at attention, and delivered his message.

"Miss Perham's compliments, sir, and would you be so good as to lend her an axe?"

"With pleasure,' said I, Grayson being below and the command devolving upon me.

"Thank you, sir, thank you!" said Hoban, and took the tool I pointed out to him. He waded aft, and fell to chopping the deck a little forward of the companion and to starboard. He had no great skill in the matter, but toiled zealously, the girl looking on and occasionally offering a suggestion. The pair was thus engaged, when Grayson climbed from the hold and was relieved of his diving suit.

For a little he watched Hoban. "They're taking a long way around—in respect to time," he told me. "The Zenobia's a heavy-built craft, for all she was a pleasure boat. They'll have their hands full in getting through that deck and making an opening of any size."

Apparently a similar thought was in the mind of Miss Perham, for she touched Hoban's shoulder, and he straightened his back very willingly. She spoke briefly, and again he came forward, bearing the axe.

"Miss Perham's compliments, and very greatly obliged," said he. He laid the axe precisely where he had found it, bowed, turned and marched stiffly back to his mistress.

Grayson's gaze followed him, and rested on the pair, while Hoban assisted the girl into the white boat and took his place at the oars.

"Knocked off for the day, eh?" said I.

"And so will we," my partner answered, but didn't speak again until the skipper had ferried us to the island.

I was starting up the beach, but Grayson caught my arm.

"Wait a minute, Scott. I've been turning this, that, and the other over in my mind, and it strikes me we should make a move."

"How? What sort of move?" I demanded.

He answered query with query. "What would happen, if we rcached the mummy cases to-morrow, found whatever was to be found, and were ready to clear out?"

"And leave that girl behind, leave her with only a serving man to guard her?"

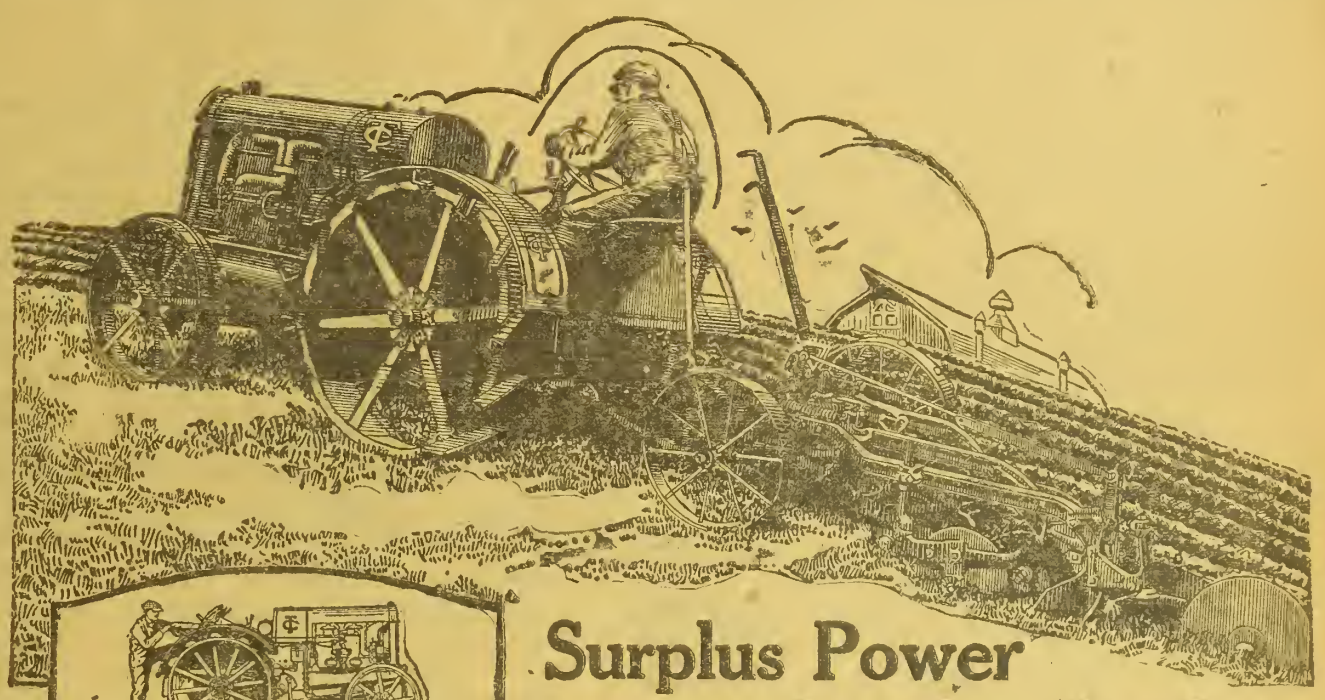
"We've settled that, haven't we? If we go, she'll have to go too."

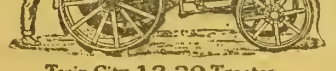
"The Pera's the only present link with the rest of the world. But what's your idea—a forcible, if merciful, abduction?" It might come to that. There ought to be a more decent and seemly method, though. I've an idea—if you've no objection——"

"Try any experiment you please!" I broke in. "I'll back you up in it."

"Come on, then," he said, and led the way to the hut.

Miss Perham saw us afar, but did not retreat into her fort. Entirely at ease





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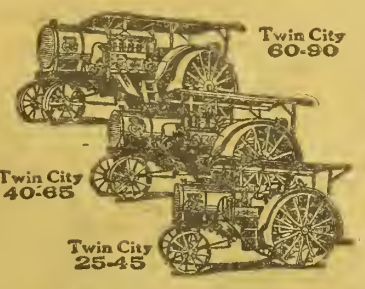

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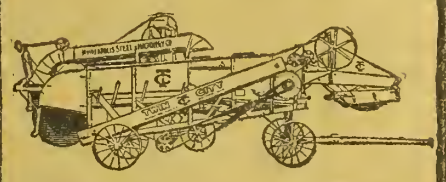

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she seemed to be, though feigning no pleasure in the arrival of her visitors.

Grayson halted at a respectful distance.

"Today," he said, bluntly, "you borrowed an axe from us. You found it useful?"

Up went her eyebrows at the abrupt address. "Certainly!" Hoban was strangely remiss if he failed to bear you my acknowledgment."

"Oh, Hoban did his duty. He's never remiss," quoth Grayson. "We'll declare him honorably exonerated of all blame. But the axe—our axe—was of use to you; that's the point I wish to make."

Her chin was firm enough, but there was uncertainty in her eyc. "I have told you that it was of use. I can also assure you that I was in no doubt of its ownership."

"Miss Perham," said Grayson, with a marked change in his tone, "I wish I could use that axe as a little text for a big and moving sermon. We were able to assist you in a trifle, I am wondering if we may not aid you in far more important matters."

She had recovered from her surprise and was ready with a thrust. "Indeed you can! I desire to rent or buy your diving apparatus."

"Unfortunately, we can't agree to that."

"Then why waste time in discussion?"

"Pardon me!" said Grayson, patiently. "Have you any especial interest in what may be in the forehold of the Zenobia?"

"Merely the interest of an owner," she said, with spirit.

"But you did not come here to search the forehold? If that part of the ship were swept away, would it make any real difference in your plans?"

For a moment she studied him intently, then said: "No; not the least."

"But if the stern, the part containing the saloon and staterooms had disappeared, the difference would be very great indeed?"

"Yes," she said, very curtly.

Grayson smiled in friendly fashion. "Won't it simplify our problem if I tell you we care little what may be aft, just as you care little what may be forward? You've taken possession of one end of the vessel and we hold the other. Why can't we co-operate rather than contend?"

"But it is my ship—all mine."

"We might set up a counter-title by priority of occupation of a wreck abandoned by its owners."

"I never abandoned it!" she cried, indignantly.

"No—o." Grayson was forced to admit. "Yet I fear your title suffered, nevertheless. For months the wreck has lain here, without officers or crew, without a soul aboard. But why cannot we drop rival claims, when in reality there need be no conflict between them?"

She shook her head. "To what purpose, sir?"

"With a highly practical purpose—mutual assistance. I told you the axe offered a text. We can help you, you and Hoban can help us. Let us suppose you wish to explore the staterooms; with our diver's outfit it can be done easily. On the other hand, we may need another able-bodied man—that's Hoban to a T. Come, Miss Perham, why can't we be allies?"

As they faced each other, they were a striking-looking pair, the man straight and sinewy, his dark, lean, clean-cut face lighting with a smile; the girl erect, graceful, admirably poised, her head held high, her steady gaze upon him. And he was meeting it openly and honestly, with frank good will and friendly purpose.

Impatience seized me. Why should she hesitate? How could she fail to perceive his friendliness and honesty? If she needed spur to action, I'd supply it.

"Hang, it, there's nothing else to do," I blurted out. "We're all in the same boat—or we will be, when it comes to getting away from this blessed island. Had you thought of that, Miss Perham? You arrived all right, but how are you going to depart? Where's the packet, unless it's the old Pera yonder? How'd you fancy being here alone with Hoban when another gang of cut-throats——"

Grayson's hand fell on my shoulder, and fell heavily. "In any event we shall offer Miss Perham and Hoban passage with us on the Pera," he declared. "Let her make her choice fairly, uninfluenced by fear lest we desert her."

"And let her use common sense," I growled under my breath, but she heard, and her cheek reddened. Truth to tell, I believe I had at last hit the mark. Reared as she had been in luxury and shielded from hard knocks the world has to give less-favored mortals, she had her share of the sense we call common because, I suppose, it ought to be in us all, even if it isn"t. Grayson, chivalrously intent upon carrying his point without appeal to her fcars, was for urging that she take time to consider fully before she gave an answer, but she cut him short.

"I accept the terms—for the present, at least," she said. "I will offer no further objection to your exploration of your part of the wreck., I shall be glad of your help with mine."

"And these questions of title——" I began.

"Can very well rest in abeyance." said Grayson, sharply.

Miss Perham bowed gravely. "Yes, we will waive them—temporarily, at any rate," she agreed.

"So be it!" I cried. "And, if you please, just what shall we do for you first?"

She turned to me and spoke with a business-like air, almost the air of employer to employed.

"First of all," she said, "I desire to reach a safe which I have reason to believe is still in my father's stateroom."

CHAPTER XVI.

The Owner's Strongbox.

In the morning the diver's outfit was moved aft, Grayson giving his reason for interrupting our own task in this wise:

"As we've contracted to help Miss Perham, we'll investigate and discover just how much of a job is involved in getting at the safe—always supposing that nobody has been before us. Then we'll figure out a method of procedure, with an idea of finishing up both undertakings at about the same time. Any objections?"

"None," said I. "That is, none big enough to warrant mutiny. And ladies first, you know! Rule of sea and land, eh? Go ahead!"

"It oughtn't to be difficult. Directions are precise."

"True! I reckon I could follow 'em, myself. Matter-of-fact young person, isn't she, when you come to get acquainted?"

He chose to make no answer, perhaps for the excellent reason that my observation had the virtue of accuracy. Miss Perham, as an ally, had spoken tersely and clearly.

The owner's room on the Zenobia was forward of the saloon and to starboard. It could be entered directly from the saloon or by way of a bathroom, which had doors opening into both apartments. The safe stood—or once had stood—against the forward wall.

Grayson wisely chose the more direct route. He descended the companion stairs and moved forward, reached the stateroom door without trouble, and found it closed but not locked. He opened it, and groped his way in. Light enough filtered through the bullseyes, of which there were two, to reveal objects dimly; he could make out a berth, a case of drawers, a wardrobe. A steamer trunk and a brace of chairs, representing the movable effects in this room, had slid into a corner, but there was no safe against the forward bulkhead. In fact, that side of the room appeared to be given over to drawers and a desk, built into the wall, and closing flush with it.

As has been said, there was little of luxury in the fittings of the yacht, and the owner's quarters made no exception to the rule. There were no pictures on the walls, no ornaments anywhere, unless a glazed calendar hanging above the desk might be so termed. Grayson slipped it from its hook, and brought it with him on his return to the deck, sole trophy of his search.

When we had his helmet off, he told his story with manifest reluctance. The girl's face blanched. To have come so far in vain. To have rirsked such dangers! I fancy that though she had been late in opening her eyes to them, she saw them now, all too vividly. Yet she kept her head.

"But the safe must be there! I've seen it a hundred times—firmly braced and bolted to the floor."

"Then it should be there now," said Grayson. "The saloon has been pretty well cleared out, but there's nothing to show looters reached the stateroom—no drawers left open, things tossed about, and so on. And there surely has been no chance for anybody to pry loose a safe made fast in that fashion."

The consternation had gone from her face, but another expression, less easy to read had taken its place. "I quite agree with you," said she, coldly.

Grayson winced. He had fathomed her meaning more cleverly than I. "Miss Perham, will you do me the honor to accept my word?" His voice was low and vibrant.

Their eyes met, as they had met before in contest of wills, and for the first time she seemed to be unequal to the encounter.

"I—I— Have I questioned it, Mr. Grayson?"

"I have told only the truth, so far as I know it."

"And I, too," she defended, "have told only what I know to have been true."

"When the Zenobia last sailed from New York, for instance?"

She turned to her follower. "Hoban!"

"Yes, Miss Edith."

"You were often on board. You remember my father's room, its arrangement?"

"Yes, Miss Edith."

"When he sailed the—the last time—" her voice lost a little of its steadiness. "When he sailed, the safe was there?"

"Yes, Miss Edith."

She raised her head, and now her glance did not quail before Grayson's.

"You see, Hoban's recollection and mine agree."

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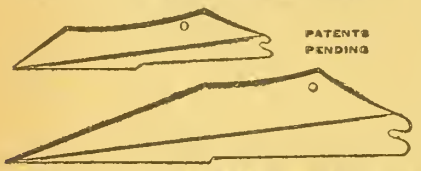

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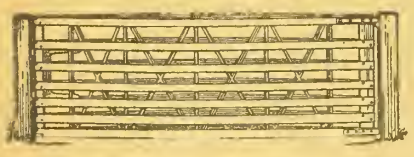

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It was, I submit, an awkward moment. What could be easier-than suspicion of bad faith, of a plan to rob her under the pretense of an alliance? Why, we had merely to declare the strongbox gone and return at our leisure to rob it of whatever treasures it held. Grayson's face was a study, but his wits were working fast.

"Jose!" he called, suddenly.

The Spaniard slouched forward, his expression as stolid as Hoban's own. He had been standing by the rail, out of earshot of our talk.

"You remember—the yacht at Havana?" Grayson spoke slowly, enunciating each word with careful precision.

"Si—yes; at Habana," Jose replied.

"You worked for Mr. Perham? You made great boxes, cases?"

"Ze packing case—many of heem."

"Anything else? Work about the cabin, for instance?"

"Ver' mooch."

"Did you see a safe, an iron box?"

Jose nodded. "I cover heem. Ze—ze wall, he call it—change—so!" He put out a hand and drew it toward him. "I make ze new wall."

Grayson already was reaching for his helmet. "Get me into this," he ordered. "And fetch an axe. Quick, lively there! We'll soon get at the bottom of this muddle."

In his haste he barely missed a tumble down the ladder, but his task was not to be performed swiftly. At last, however, he reappeared, and was relieved of his hulking head-piece. A glance at his face told the story—the safe was found!

He had had to chop away a good deal of woodwork Jose had put in, but had been rewarded by discovery of the strongbox just below the folding desk and concealed by panels, no doubt easily moved, if one had the secret. The safe, though, was still solidly held by its braces and bolts. To dislodge it and to raise it to the deck was likely to tax the united ingenuity of the party. Yet it is to be recorded that none of us was appalled at the prospect. To be rid of an ugly question of veracity was worth toil and trouble and calculation.

Miss Perham picked up the calendar Grayson had brought from the stateroom and examined it rather mechanically. It was glazed, as has been explained, and so well framed and backed that little water had seeped through, not enough, at any rate to render the figures illegible. Looking over her shoulder, I saw that the table covered two years.

"Wonder if we're beyond that?" said I, half idly.

She ran a finger to the top of the last column, and then ran it back.

"No, this is the present month," said she, perhaps no more deeply concerned than I had been.

"Well, then, what's the day of the week?" said I. "Bless me! but I've lost all track."

"It's the—the twenty-fifth of the month," said she, knitting her brows in calculation. "And the twenty-fifth falls on—on——"

"Yes?" I encouraged. "The twenty-fifth falls on—— Why! what's the matter?"

There was excuse for exclamation and question, for she had almost dropped the calendar, and her expression betokened surprise and chagrin.

Grayson, who had been getting out of his harness, interrupted our talk.

"If you're not insistent, Miss Perham, we'll let this matter of the safe rest for a time," he said.

"I very greatly prefer that you should," she said promptly. Then she glanced at me. "This is the twenty-fifth, and the twenty-fifth falls on Sunday. And I—I'd sunk to such a heathen state as to have forgotten."

"Well, so had we all!" said I, cheerily; then was smitten by belated understanding. "Oh, I see! I see! You'd rather not—that is, you don't believe in working Sunday?"

"No," she said, simply. "Do you?"

"I? Do I believe in it? Why—why—" I was floundering finely and getting deeper into the mire of uncertainty with every word. "Why I suppose—general proposition, you know—depends on circumstances, that is, as you might say—works of necessity—all that sort of thing, you understand."

She perceived my confusion, but there was no amusement in her eye. Instead, it was a very serious look she gave me, a look that told more eloquently than many words could have told the incongruity of her training and all her ideas and standards of life and action, with the conditions in which she now found herself. I don't admit that Grayson and I were worse than the next man she might have encountered on the wreck of the Zenobia, but I do confess that neither of us had remembered that one day might differ from another.

"I—I'm afraid we're pretty far from the church bells," I blundered on. "And if you think you've been a heathen, I don't know how you'll class the pair of us."

At that the blood came into her cheek. "Don't misunderstand me," she said quickly. "Im not trying to preach. I know that work sometimes must be done——"

"But we certainly can respect your preferences in regard to your own," Grayson put in. "There's plenty to do forward. Here, Jose," he raised his voice, "do you and the skipper get this outfit to the forehatch!"

The girl walked to the side, and Hoban followed her closely. She said something in a low tone, and he drew the white boat alongside.

"She's going ashore," said I.

"That's right, in view of her scruples," said Grayson. Then up went his voice again. "Lively there, Jose! We've a long road to travel yet."

But little more work was to be done that day, forward or aft, on the wreck. To be sure, Grayson for a space, stumped about, and rather hectored our hands, but suddenly he threw down the line at which he had been hauling and grinned, sheepishly.

"It's no use. I don't care how much there's to be done, I'm in no humor for it. Half the day's gone, anyway."

"And it does no harm to humor em sometimes," said I.

He ripped out a word by no means suited to the day.

"Oh, I just meant Jose and the skipper," I jeered.

"Well, I didn't, then!" said he, with the touch of grimness which crept into his speech at times.

We went ashore, presently, Grayson in a mood of absorbed meditation, from which he roused himself as the boat's bow touched the sand. Then he moved briskly, as if carrying out an arranged program.

He shaved himself with exceeding care.

He ransacked his scanty wardrobe for his cleanest and least tattered shirt.

He set his cap very straight on his head, threw back his shoulders, and marched up the path to the hut.

Ten minutes passed. Then I saw him escorting Miss Perham to the white boat. Mirabile dictu, Hoban was missing from the party.

Grayson took the oars and rowed slowly from the beach. Stretched at ease in the shade and smoking a comforting pipe, I watched the voyage through half closed eyelids, and with a sense of enjoyment of the peacefulness of the scene. The Pera lay quietly at anchor, the surface of the lagoon was tranquil as a lake. With the white boat gliding smoothly in the foreground, I might easily have imagined myself dozing away a summer afternoon by peaceful waters of New England. Not that I could quite forget the wreck, though. Reluctantly I turned to glance at the ugly black line of it, and then, turning away willingly enough, beheld something which made me open wide my eyes and sit up.

Grayson was rowing straight for the little island where the dead of the Zenobia were buried.

An hour passed before the boat returned. Grayson and the girl parted on the beach. She walked slowly and with bowed head up the path to the hut. He crossed straight to my lounging place under the trees, dropped beside me, and clasped his hands about his knees.

"Well?" said I, questioningly.

There was a long pause before he answered. "It was well, I think. It was her right to visit the grave, to know part, at least. I couldn't tell her the whole story. She didn't suspect I knew much of it—anything more, I mean, than might have been picked up by any beachcomber. She supposes her father was drowned. Of course—I didn't disabuse her of the idea. Better she should think it!"

"Vastly better!" I agreed.

"So I told her what I could," he went on, "and she, in turn, gave her story—with reservations, I suspect. There's some legal tangle—trouble in settlement of the estate—missing papers. That's as far as her confidences went. I tried not to be prying, but she dropped a word or two that make it reasonably certain she knows nothing of what's in the forehold."

"Glad to hear that," said I. "Then, as things are, there'll be nothing to interrupt our alliance, provided there's no interference from outside."

"Nothing now in sight," he said. "Nothing to come unless—Good Lord, Scott!" He sprang up, and stared at the passage through which a ragged jib had appeared a few days before. "Good Lord, Scott, look!"

I looked, with all my eyes, and saw a little vessel, schooner-rigged but with something plainly amiss with her canvas, lying to off the channel. Her flag hung well below the peak, and drooped languidly.

"What——?" I began.

Grayson's gaze was held upon the stranger, but he spoke over his shoulder, curtly, wrathfully, savagely. "Of all the cursed ill luck! A yacht blundering in here, at this time of all times! And a yacht that comes with an appeal for harbor; a yacht leaking a drop or two, with some of her pretty pinions damaged, and flying a signal of distress!"

(To be continued.)

Questions of Water Right.

1. Has a person a right to take out a water right in a small creek that runs through your place and turn the flow of the water in another creek and cut you off from water for stock or irrigation?

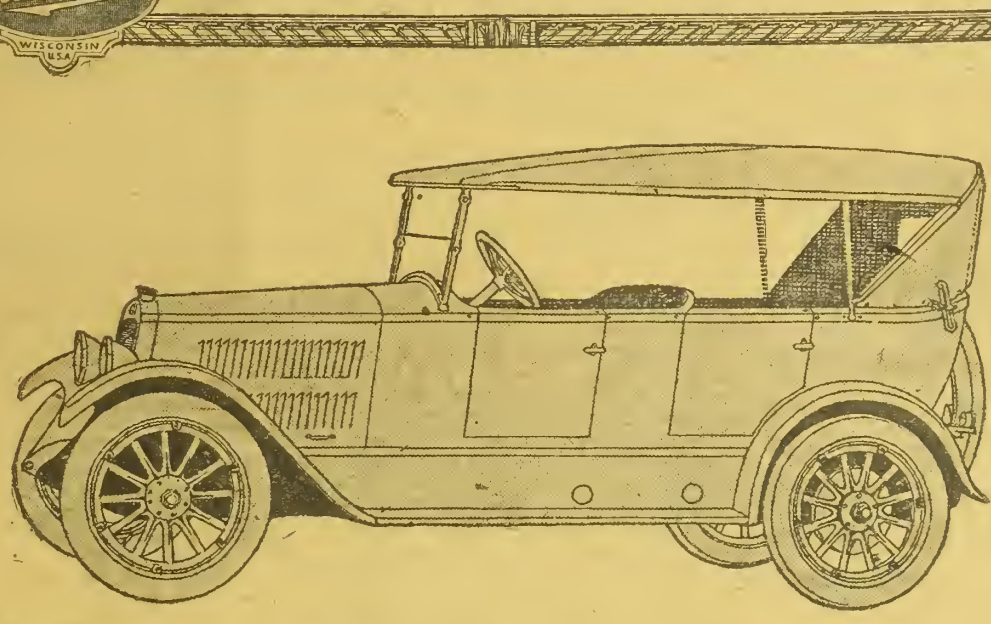
2. A has number 1 ditch. B has number 2 ditch. Can A run water in a reservoir when B wants the water to irrigate? —J. D. L., Huerfano county, Colo.

It would appear from this question that your rights cannot be interfered with. Sometimes, however, there are other questions involved and we would refer you to the water commissioner for your district. If you do not know who he is, you can find out at the county clerk's office in Walsenburg. The same suggestion applies to your second question, although if you have stated it correctly A cannot run water into a private resorvoir until B's wants are provided for.

Would Include 1919 Taxes.

If a man owning land sell it for $10 per acre net, can the party charge him for taxes a year ahead when the 1918 taxes are paid? The sale was made in December, 1919, they charged for 1920 taxes.—R. H. L., Kansas.

It is customary in the sale of land for the purchaser to pay taxes for the current year. That is, the taxes assessed during the current year and which are not due and payable, however, until the spring of the following year. A sale made in December, 1919, would naturally include the assessment of that year which is not payable until 1920.



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For the Mitchell organization, which during the past few years has brought out numberless mechanical betterments, has now staged a style sensation.

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You'll agree that it's a triumph in designing when you see this new Mitchell. You'll note the slanting radiator, at the same angle as the windshield, and you'll note how all the lines give a new speediness in appearance.

Then you'll examine the detail of finish and wonder how such values can be included at a medium price. As you ride in the new Mitchell, you'll marvel at the roominess, the comfort, the "costly-car" feeling. And before you know it, you'll covet a car like this, and find nothing else to equal it. That is the way it is affecting other people everywhere.

So it is wise to place your order early with the Mitchell dealer, so as to insure early delivery. Orders are pouring in for this new car. You'll want yours quickly, too.

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The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

The Curtains.

Myra Kelly once wrote a bit of doggerel that sometimes exactly expresses our feelings.

Oh give me new faces, new faces, new faces;
I have seen those about me a fortnight or more.
Some people grow tired of names or of places,
But faces to me are a much greater bore.

About now every housewife gets tired of the "faces" of her rooms. It's just the pre-symptoms of that terrible chaos, house cleaning. The curtains are the surest index to the "smilyness" or gloominess of a room, according to whether they are fresh or otherwise. We want to say a word about them here.

Lace curtains, or those of any washable cotton material, should be dipped up and down and squeezed out of a good warm suds, but never rubbed nor wrung out. All of us are not so fortunate as to possess drying frames for curtains, so we have to be very careful in their hanging. One good way is to hang net curtains loosely but well straightened out between two clothes lines. Swiss or more tightly woven curtains may just be hung in good straight lines over one wire.

Curtains, of course, should be starched, but in the case of lace or net curtains gum arabic gives a newer look and more lasting firmness than ordinary starch.

Dissolve the gum in warm water and then use one teaspoonful of the solution to every quart of rinsing water, or a quarter of a cup to every three gallons of water.

Some of the prettiest bedroom curtains seen lately were strictly home made and quickly and easily done. They were of a good grade of bleached muslin. The only decoration was at the hem and those were put in with a long darning stitch (the same one over which our blouses and hats have gone mad) of blue mercerized cotton. There were several rows of these stitchings, and occasionally they were broken by a "daisy" of the same color—the petals made of that "lazy daisy" stitch which is so very easy to do.

One flour sack with a straight band of some pretty washable color stitched at the top of the hem makes a very good "sash" curtain for a kitchen window. And an unusually pretty one, for you can't find a prettier color than the creamy tint of a good flour sack.

A straight ruffle at the top of the curtain or a ruffle and side drape of figured cretonne, crepe, or some of our cotton sport materials will make the face of a room so smiling that the family won't recognize it after you have finished fixing up the curtains.

Then here's to fresh curtains and new faces for more than a fortnight, even as Myra Kelly says.

A New Book on Canning.

A new book on a subject in which every housewife is interested has just recently come into our hands.

It is a little volume called "Every Step in Canning," by Grace Viall Gray, who wrote a number of articles on the subject for "Country Gentleman" last summer.

It really should be called "Every Step in Preservation," for not only does the author explain the whole process of canning in a very clear, concise and most interesting fashion, but similar clear directions are given for drying and brining vegetables, fruits, fish and meats. It looks as if every farm house could be the food factory and storehouse for every food need the year round if we only took the time.

But be that as it may, you can hardly go astray on the directions given and you will find the answer to very puzzling questions as to the why of certain spoilages when you thought you were being very careful. It is a book well worth its price, especially if you have any interest whatever in the subject.

The author says "Home Canning has come into its own because of the war, and it has come to stay because of its many merits."

The name of the book is "Every Step in Canning," its author, Grace Viall Gray; its publishers, Forbes and Company, Chicago, and its price $1.25.

INQUIRIES AND ANSWERS.

Cleaning Aluminum.

A question has come in as to how to clean tarnish and stains from aluminum. Vegetables darken aluminum, but acid fruits and tomatoes tend to remove the stains, owing to the chemical action of acids on aluminum.

To clean the inside of the dark stain, it is easiest to rub it with a cloth moistened with a dilute acid, such as lemon juice or weak vinegar. If the surface inside or outside is badly burned, it may be cleaned with whiting moistened with ammonia or alcohol. Steel wool is very good to use with any of these cleaning agents except just the acid, in place of a cloth. It can be purchased at any hardware store, and a little of it will remove many a stain without one's having to use all the skin on one's finger ends in the process.

There are several good commercial cleaners which are used with this steel wool and they seem to be very effective. But if only the dark stain is to be removed from the inside, an acid fruit or tomatoes cooked in the pan will leave it as bright as new. I does not injure the food. Never put aluminum to soak in soda water, as that tends to darken the metal.

To Remove Mildew.

An inquiry was made in a recent issue as to how mildew stains might be removed. This letter comes as an answer. We always like best to use ideas which have been tried and proven successful and so are very glad to print this letter.

Ogden, Utah.

To Home Department Page:

I have taken mildew out of a linen waist by wetting it and rubbing it thoroughly with laundry soap and hanging in the sun to dry. Two or three applications may be necessary.—Edith H. Tucker.

Fumigating Wool Mattress.

Mrs. I. W. McCleary of Palmer, Lake, Colo., wants to know if a wool mattress may be successfully fumigated at home and how to do it. We have not succeeded in finding good directions for this. Can any of the readers help us?

Candy for the Bachelor.

We have promised never to divulge the identity of this inquirer. But he does say that bachelors, perhaps confirmed ones, like to know how to make good things as well as their esteemed rivals—confirmed "single ladies." He insists they do need some help though and asks for recipes. Here are a few for candies and cookies. Perhaps someone else has some which will just fit the bill and will send them in.

TAFFIES.

2 cupfuls light brown sugar;
½ cupful of corn syrup;
1 teaspoonful of vanilla;
½ cupful of molasses;
¼ teaspoonful of cream of tartar.

Boil the ingredients until a teaspoonful of the syrup dropped in cold water will crack. Turn out onto greased platter or pans, and when cool enough pull until light colored. If you have not brown sugar use granulated, although the brown sugar gives a little better flavor.

VANILLA TAFFY.

2 cupfuls of granulated sugar;
½ cup of water;
¼ teaspoon of cream of tartar;
1 cupful white corn syrup;
1 teaspoonful of glycerine;
1 teaspoonful of vanilla.

Boil all the ingredients together, except the vanilla to nearly the crack stage. Pour onto a platter or into greased pans, when cool enough to handle, pull until waxy and white. Lay on paraffin paper and when cold break in pieces.

MARSHMALLOWS

Soften four level tablespoonfuls of granulated gelatin in eight tablespoonfuls of ice cold water. Heat two cupfuls of granulated sugar with one-half cupful of cold water until thoroughly dissolved, add the gelatin which has been softened in the water, and allow it to stand in a china bowl or crock until partially cool. Add a pinch of salt and a half teaspoonful of vanilla, and beat with an egg beater until stiff; then beat with a spoon until it will pile or stand upright. Thickly crust a deep square pan with a mixture of one part powdered sugar and one part of cornstarch. Spread the marshmallow thickly on this. When dry on the top cut into cubes and roll in a mixture of powdered sugar and cornstarch.

CREAM FUDGE.

2 cupfuls of sugar;
A pinch of salt;
1 tablespoonful of molasses in a cup and fill the cup with milk;
1 teaspoonful of butter;
½ teaspoonful of vanilla;
1 square of unsweetened chocolate or 3 level tablespoons of good cocoa.

Stir the above ingredients except the butter and vanilla until they are well mixed. Boil until a good soft ball will form when dropped into cold water. Keep at boiling point when this stage is once reached: do not allow it to simmer, but keep it boiling constantly. A hot fire will prevent coarse and grainy candy. Remove from the fire, add the butter and vanilla, beat until thick enough to spread and pour into a slightly buttered pan.

One tablespoonful of molasses will keep the fudge from becoming grainy and it cannot be detected.

OATMEAL COOKIES.

1¼ cupfuls sugar;
1 cupful shortening;
3 cupfuls rolled oats;
2 eggs;
½ cupful sour milk;
1 teaspoonful powdered cinnamon;
1 teaspoonful powdered ginger;
1 cupful stoned chopped dates or raisins;
1 teaspoonful baking soda;
2 cupfuls flour;
1 teaspoonful salt.

Cream shortening and sugar together thoroughly, add eggs well beaten, rolled oats, dates, salt, spices, soda dissolved in milk and flour. Mix and drop from spoon on greased baking tins; bake in moderate oven from ten to twelve minutes. Sufficient for 45 cookies.

SALT WATER TAFFY.

This is made the same as vanilla taffy except that a tablespoonful of butter is added and one teaspoonful of salt. This can be flavored and colored to suit the taste, and pulled like vanilla taffy. In making taffy, fold over the edges of the mass as it cools and keep folding up the batch until cool enough to pull.

Infant Care Bulletins.

Several inquiries have been sent in and answered concerning the infant care bulletins and also the baby shoe patterns. The child welfare bureau under the Department of Labor, Washington, D. C., furnishes these bulletins free of cost to anyone desiring them. You have only to write and make known your desires. The bulletins are certainly worth while.

How Do You Cook Pintos?

Western Farm Life:

To your bean farmers—I have been taking several farm papers and am sorry to say that I have never noticed but one article about cooking beans, that was by Farmer Putnam and he didn't say very much. I suggested to my wife that I would write to Western Farm Life and ask for the different ways to cook and serve beans and have it printed. There are thousands, yes millions, of people that do not know how to cook beans.

I have lived in this western country since 1881 and I don't know much about cooking, as this is not my line of business, but I will say a word here. While boiling pink or pinto beans don't add cold water to them. Don't salt or season at all until the beans are thoroughly cooked; the more you cook beans the better. In winter cook six or seven days' supply at one time. They make splendid pies, but as I am no pastry cook I will leave that to the ladies to tell. Beans are good served with butter, vinegar or sugar. I prefer having them with vinegar and a little sugar sprinkled over them.

I think by putting a printed card in each sack of beans telling how to cook and serve beans, it will increase the sale of them.—"Honest John," New Mexico.

Fur Sales Run $27,000,000.

When the hammer fell to mark the last day of the winter auction fur sales under the auspices of Funsten Brothers & Co. International Fur Exchange yesterday afternoon, more than $27,000,000 was found to have been realized in the greatest fur sale the world has ever known.

The sale marked a growth in the history of such sales in St. Louis that

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With Delineator	1	yr.,	2.50
With Modern Priscilla	1	yr.,	1.75
With Everybody's	1	yr.,	2.50
With Literary Digest	1	yr.,	4.90
With Etude, Music Magazine	1	yr.,	2.25
With Illustrated World	1	yr.,	2.30
With American Magazine	1	yr.,	2.55
With Hunter-Trader-Trapper	1	yr.,	2.00
With Woman's Home Companion	1	yr.,	2.55
With Little Folks	1	yr.,	1.90
With Illustrated Review	1	yr.,	1.25
With Youth's Companion	1	yr.,	3.05

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WESTERN FARM LIFE

Denver, Colorado.

was almost inconceivable to the buyers attending. The sales of the first day of the auction were $5,088,173, about equal in amount to the total for the entire fiscal year of 1916, ending in June of that year. The total of sales for the present fiscal year, ending at the same month, will approximate $65,000,000.

In this sale all furs native to America were included as well as other skins from all over the world. Alaska, Uruguay, Siberia, Macedonia, New Zealand, France, Canada, Germany, Russia, Persia, Tibet, China, Australia, Bolivia and Chile were some of the countries sending consignments here. It was estimated that more than one-half of the visible fur supply of the world was included in the auction.

Furs that marked the closing of the sale were those of the American raccoon—and the last lot brought $5 per pelt, a price which would have astonished the hardy frontiersmen of olden days who used to favor the fur of this animal for making ornamental caps and garments.

One singular fact was noticed at the sale. White ermine, long used as the emblem of royalty in Europe, has for centuries been regarded as the richest fur. The brown ermine, which is simply ermine in its summer coat, has been neglected to some extent, heretofore. But by reason of the favor given to summer neckpieces, brown ermine advanced 50 per cent in price, while white ermine dropped 20 per cent over former prices.

The chipmunk, a tiny animal with a beautifully striped coat, sold exceptionally well, and this is credited largely to the display of a handsome wrap made of such skins at the fashion display given at Hotel Jefferson last Monday.

Although prices may have seemed high in this sale, merchants from London and Paris said the prices were comparatively low, considering the fact that so much of the world's fur supply was located here. Even in America, with all the furs now here, there are not enough to supply American wearers. In the government reports it is shown this country imported over $71,000,000 in furs in the last year, in addition to the native product. Today America is the greatest producer of furs.—St. Louis Globe-Democrat.

New Fashion Service.

All Patterns Now 12 cents Each: Address WESTERN FARM LIFE, Pattern Department, 1518 Court Place, Denver, Colo.

Please note change in price, a reduction from 15 to 12 cents which becomes effective on patterns ordered from this and subsequent lists. We also wish to announce that we have been able to make arrangements for mailing patterns from Chicago, instead of from New York. This means a saving of several days' time in filling orders. Please be sure to specify size, and to give your complete postoffice address.

No. 9565. Ladies' Waist. Cut in sizes 36 to 42 inches bust measure. A roll collar of satin follows the semi-surplice closing and makes an attractive collar-line.

No. 9252. Ladies' Corset Cover. Cut in sizes 36 to 46 inches bust measure. Especially good for the stout figure is this style.

No. 9543. Ladies' Apron. Cut in sizes 36, 40 and 44 inches bust measure. The closing is at the side and the sleeves in either long or short length are set-in.

No. 9329. Misses' or Small Women's Dress. Cut in sizes 14 to 20 years. The new silhouette is emphasized in this youthful one-piece model.

No. 9379. Girls' Dress. Cut in sizes 4 to 14 years. The plaited skirt is joined to an underwaist of lining.

No. 9517. Girls' and Childs' Coat. Cut in sizes 1 to 14 years. The body and sleeves are in one, joined to a yoke in drop-shoulder effect.

No. 9523. Ladies' Circular Skirt. Cut in sizes 26 to 36 inches waist measure. The skirt can be made with two, three or four gores.

No. 9247. Ladies' and Misses' Skirt. Cut in sizes 16, 18 years and 26 to 36 inches waist measure. Vertical pockets and a deep cuff hem make this skirt attractive.

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The past few years have been full of perplexing and disappointing problems and conditions. No business organization can be any more perfect than the combined intelligence, sincerity and industry of its human management. A corporation is subject to all the trials and tribulations of the individual, but in an increasing ratio to its magnitude and responsibilities.

There is no avenue of human activity that has not been paved with sacrifice during the past four years; there isn't an individual who has not contributed in some way to the winning of the world's greatest war at discomfort to himself and by voluntary self-denial, and every business organization has contributed its tithe of service. Out of the chaos of the world a new day dawns pregnant with promise of a happier condition of affairs. As you look forward to a more prosperous, brighter era, the Telephone Company looks forward to increased efficiency, better service, and, above all, to pleased and satisfied patrons.

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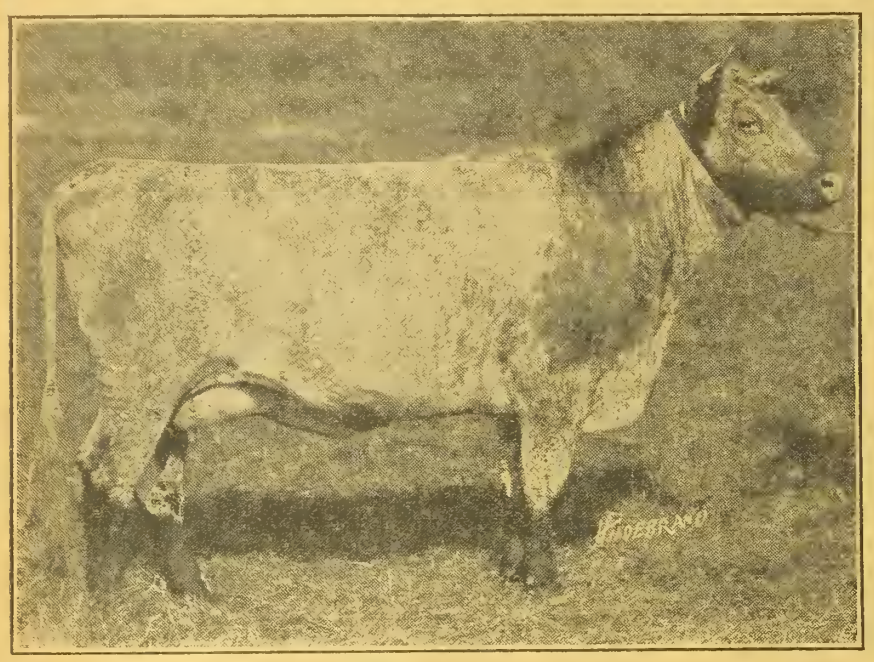
Kansas Professor Blots Out Milking Shorthorns.

(Continued from Page 3.)

and land are sky-high and staying sky-high. And then, if a farmer is so situated that he wants to milk, he will want to pay more attention to the udders of his cows, and so prefer the Milking Shorthorn type.

"It is not so difficult to turn a beef herd into a Milking Shorthorn herd by the bull route in one or two generations, nor to turn them the other way. All beef herds undoubtedly need to pay more attention to milk than they have paid. The pendulum swung too far when buyers from the range ran away from a breeder's farm in Iowa because they noticed a cow with an udder they could see from the road. It is because all beef herds need to pay more attention to milk that the Kansas object-lesson is valuable.



May Washington, Owned by H. E. Tener. Grand Champion Milking Shorthorn at Dairy Show, Springfield, Mass., 1919. The Largest and Best Milking Shorthorn Show of the Year. Photo Taken after She Had Completed a Year's Record, 12,840 Pounds of Milk, Hence Shows Small Udder. She Has, However, a Well Formed Udder.

"I have looked up the pedigree of the heaviest milker of the Manhattan cows. While she is by a sire that is by the Duthie-bred Collynie, and her dam is by a son of this same bull, making her a line-bred Collynie cow, her dam's dam is of good American and Bates breeding, her sire's dam's dam's dam the same, and her sire's dam is topped by a bull of the breeding of Robert Thompson, of Cumberland county, England, the famous breeder of Molly Millicent 4th, grand champion in the milking class at the English Royal years ago. This breeding has been prominent in leading English herds of Milking Shorthorns, and in a large proportion of the most successful importations of Milking Shorthorns to this country. And I notice that a very fair proportion of the cows imported to this country and sold as straight Scotch have this good Cumberland county blood pretty close up in their pedigrees, and are no more straight Scotch than was Whitehall Sultan or Choice Goods, or Little Sweetheart, the grand champion cow at the International and other shows this last year. A certain amount of milk seems to be required to make the best beef Shorthorns. And it is the amount of milk that a man wants to get that will determine whether he wishes beef Shorthorns or Milking Shorthorns. And, of course, if he wants beef Shorthorns of good milking ability like the Manhattan cows, he will have to pay for them, even a bit more than he will for Milking Shorthorns of good type and milking ability, because the entire Shorthorn breeding world is a contender for these beef Shorthorns of good milking ability. Every Shorthorn man knows their practical value either to milk or to nurse calves."

Now let us see what Prof. Morton of Colorado Agricultural College says. On one point he is in agreement with Dr. McCampbell, and that is when he says: "There is no such thing as a Milking Shorthorn that is too beefy, if she shows milking capacity with it." That statement is out of harmony with the ideal most breeders of dual purpose animals must have in mind, but its inconsistency may be excused when we reflect that the dual purpose is in the making and that the type can never be as evenly maintained as in either the extreme dairy type, or the beef type of cattle. That being true it must nevertheless be obvious that unless standards in type and conformation are established and maintained, uncertainty will continue to exist and chaos will be the final end of dual purpose effort.

Prof. Morton's Views.

Here is Prof. Morton's statement: "I am aware that most dairy authorities cast slurs at the Milking Shorthorns. Many of them say that there is no such thing as a dual purpose animal. This, also is a tendency on the part of some beef cattle men. It seems to me that men who take the stand that there cannot be a dual purpose animal are going contrary to all the known facts of animal breeding. Within dairy breeds themselves there is developed the dual combination of high production of milk and high per cent of fat. These two things are just as antagonistic, one to the other, as are the production of beef and milk, and the production of beef and milk in the same animal are not any more antagonistic than the production of size and quality in one beef animal. It is a well known fact,, in animal breeding, that it is much more difficult to carry along two characters in trying to develop your stock than it is to develop only one character, and it is nine times as difficult to develop three characters as it is to develop one. The dual purpose advocates must therefore admit that improvement by selection is slower in a dual purpose animal than in a special purpose animal. In other words, in a dual purpose, beef animal,

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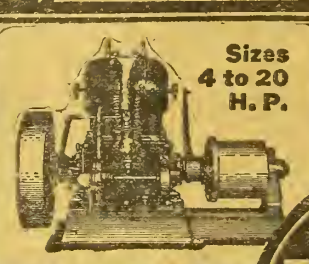

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beef production would not be at its best nor would milk production be at its best, but it is not necessary that the dual purpose animal should equal specialized production in either line. When there are two sources of revenue, neither one needs to yield as much as when there is only one source of revenue.

"Dairymen and beef cattle men might as well argue against general farming as against the dual purpose animal. If a man grows sugar beets and alfalfa and grain and keeps dairy cattle, he is not going to get as great a yield for any one crop as he would if the entire farm were devoted to one entire crop, but his total yield will be much greater.

"I have considerable sympathy for the beef cattle man who objects to the lop-sided, weak-constituted Shorthorn passing as a Milking Shorthorn. Naturally there are men who are attempting to breed dual purpose Shorthorns whose tendencies are toward dairying and they will try to get all the milk they can, regardless of beef production. These men have no business dealing with the Shorthorn breed. They should handle one of the dairy breeds. There are also dual purpose men whose tendencies are toward the production of beef, and they breed a beefy animal without udder capacity or ability to produce a large quantity of milk. Nevertheless, there are dual purpose Shorthorns, commonly known as Milking Shorthorns. They should not be bought on pedigrees only, but should be animals showing large frame, plenty of flesh when dry, and strong indications of milking capacity. As Dr. McCampbell states in his letter, there are many big, beefy Shorthorns yielding a large amount of milk, and that is the really profitable type of Milking Shorthorns.

"I am as much opposed as he is to the adoption of the emaciated type of Shorthorns as representative of the Milking Shorthorn. I was told recently of a judge who turned down a cow in the Milking Shorthorn class because she was too beefy. There is no such thing as a Milking Shorthorn that is too beefy, if she shows milking capacity with it. The more beef type you can get the better, at the same time you are getting milk. There is, I think, in Colorado a distinct place for Milking Shorthorns. Whether that place will always exist I do not know. The Shorthorn, at present, has been able to maintain its place on the dry lands and in the Divide country between Denver and Colorado Springs in competition with the good herds of dairy breeds. In one of our cow testing associations Milking Shorthorns stood first in economy of production. The Shorthorn will not likely show the largest milk check at the end of the month, but they are naturally a farmer's cow, doing well under all kinds of treatment, which a breed of cattle must endure when scattered generally in the hands of men who are not all naturally stock men.

"The Milking Shorthorn herds will have many steer calves to run upon cheap native grass within fence, or upon open range grass throughout most of our dry land sections. The summer growth made by these calves is net profit to the owner, above the cost of skim milk that went into them. These same calves can be kept through the winter, utilizing the straw and corn fodder in addition to corn silage, and in this way consuming an enormous amount of rough feed that is produced upon a dry land farm. The milking cow, herself, will consume some of this food, but she should not be forced to consume all of it, because the average herd on the dry land farm is small in number, while the amount of this coarse feed produced is great. Many people will say that this condition of cheap grass is temporary and consequently there is no permanent place for the Milking Shorthorn. The opinion of most men who are thoroughly conversant with dry land conditions is that dry land farming cannot be successful except as combined with livestock farming, and that farms must be large enough so that a large proportion of the farm can be maintained in grass. If this plan of farming is pursued, then the Milking Shorthorn will always have a place on these farms. Then also many changes come with it. The production of cheap beef has moved westward and now centers around our Forest Reserves. As population grows, not enough cheap beef can be produced on these mountain ranges to hold a low price level for beef. As the price of beef advances, more and more will beef production expand on ordinary farms. This will be true of our irrigated farms in Colorado. The only thing that is holding irrigated farmers out of beef production at the present time is that beef steers are produced too cheaply upon range grass. With changed conditions, in this respect the beef cow and beef steer would be an asset to the farmer in handling the rough feeds grown upon the farm. The chances are that the Milking Shorthorn would fill this field, because the beef cow that produces a large amount of milk can suckle two calves and release one cow for milking. These statements are based upon actual conditions as they exist today, either in this state or elsewhere.

"In England, Milking Shorthorns have maintained their place upon extremely high priced land in face of the enormous demand of London for milk and dairy products. The enemies of the dual purpose animal in this country shut their eyes to conditions as they exist in England today. One argument advanced for the future of dairying is the fact that Jerseys and Guernseys are maintained on their home islands upon lands renting for $30 or more per acre annual rental. Milking Shorthorns are holding their place also upon lands of extremely high value. This thing is true, that in this western country the Milking Shorthorn propaganda is very new; in fact, while the milking type of Shorthorn was very popular once in this country, it very naturally died out and it is only in very recent years that it is again coming into popularity.

"A man who undertakes to develop a herd of a type new to the country must expect to carry on much advertising and wait a considerable time for results. The pioneer must await development, and your subscriber should take this into consideration. If he likes the breed he will succeed with them in the end, as there is a place for them in Colorado, and the demand for them is growing.

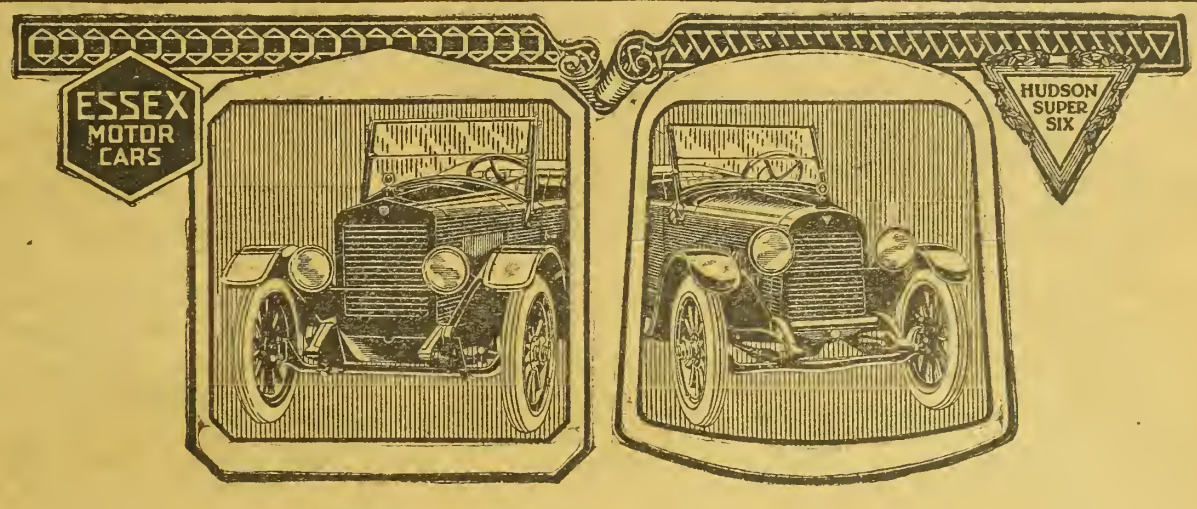
"My idea of a Milking Shorthorn is a Shorthorn that milks from 8,000 to 12,000 pounds of milk in a year with an average test of about 4 per cent butterfat under ranch conditions. I want her to weigh from 1,200 to 1,600 pounds, deep-bodied, nice udder and good teats. I also want her in the Record of Merit official test class A. In regard to Robert Chrismer, under his conditions, I would advise him to buy a bull whose dam has a record of merit and a few heifers out of R. of M. dams, bull and heifers not to be related and then some good grade Shorthorn cows and grow into the business. In regard to records: The American Shorthorn Breeders' Association has established a year book in which milk and butterfat records of cows are kept and published annually. This gives the people who have good Milking Shorthorns an opportunity to show the public what their cows can do, and enables buyers to see just what they are buying. This Record of Merit is often referred to as R. of M., thus when one sees an advertisement of R. of M. Shorthorns he may know it refers to Shorthorns that have produced enough milk and butterfat to qualify for the Record of Merit, and if the records of the cattle mentioned are desired, all that is necessary to do is to send for a copy of the year book, published by the American Shorthorn Breeders' Association, and find the records published there."

What S. G. Rose Says.

Now let us consider the statement of Seeley G. Rose, manager of the Pine Valley Dairy and Farms Co. (the Otis herd), at Colorado Springs:

"To qualify for the Record of Merit a cow must first be recorded in the American Shorthorn Herd Book, then during a period of 12 months she must produce a certain amount of milk, or butterfat, depending on her age at starting her record. If the cow is 30 months of age when the record starts she must produce 5,250 pounds of milk or 210 pounds of butterfat, within 12 months after starting. As the cow advances in age at the time of starting test the requirements increase at the rate of 3 pounds of milk, or 1-10 pound of butterfat, for each day that the cow exceeds 30 months, until at the age of 5 years, or over, the cow must produce 8,000 pounds of milk or 300 pounds of butterfat. Class A records are those which have monthly supervision by the Experimental Station, and these are official records."

Other comment has reached us on this subject, which will be used in a later issue.



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The Essex, of course, does not cost as much as the Hudson, and though it is admittedly the runner-up in performance, it can never be all the Super-Six is.

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Review of Seed Laws.

Farmers of Colorado and Idaho have the protection of stringent state laws against seed adulteration and mislabeling. The farmer who is aware of the existence of these laws need take no chances in procuring field seeds, unless he is willing to run the risk of crop failure by buying untested seeds. In order to acquaint readers with the provisions of the Colorado law, we are quoting questions and answers from a state seed bulletin. It will be noted that the State Seed Laboratory at Fort Collins makes free tests of farm seeds for farmers. Similar service is also given in Idaho.

Colorado Seed Law.

When did the act become effective? The act was approved April 10, 1917, and the labeling requirements under it took effect October 1, 1917.

What are "field seeds" as used in the act? Feld seeds are defined as the seeds used by farmers, and which include the seeds of red clover, sweet clover, white clover, alsike clover, alfalfa, Kentucky blue grass, Canada blue grass, timothy, brome grass, orchard grass, red top, meadow fescue, oat grass, rye grass and other grasses and forage plants, corn, flax, rape, wheat, oats, barley, rye, buckwheat and other cereals, field peas, grain, sorghums and forage sorghums.

What is the main feature of the law? It requires the labeling of all field seeds sold or offered or exposed for sale within this state for seeding purposes in this state, either in bulk, packages or other containers of five pounds or more. The law is primarily a labeling law.

Where shall the labels be placed? The main intent of the act is to place the label in such a position that the purchaser of the seed may readily see that label. If it is a sack of seed, on the outside of the sack; if a bin, small or large, on the outside of the bin.

Is any particular form of label or tag required? No.

In what language shall the label be? English language.

Must the statements on labels be written or printed? Either written or printed.

What shall the label contain? The label shall contain (1) the commonly accepted name of the field seeds; (2) the name and full address of the person selling or offering for sale such seeds: (3) the approximate percentage of purity, which shall be within 2 per cent; (4) the name and approximate number per pound of each kind of seed designated as noxious weed seed which is present in excess of 90 seeds to a pound; (5) the percentage of germination, which shall be within 10 per cent; (6) the date when such germination test was made; (7) the state or foreign country where the seed was grown and, if in Colorado, the locality, or plainly marked "unknown."

Must the label give both the name of the kind of seed and the variety of seed? For example, can wheat be sold under the label "Wheat" without giving the variety name, such as Marquis, Defiance, etc? Seeds may be labeled as to kind only; that is, wheat may be sold under the name "wheat" without designating the particular variety, if the purchaser is willing to buy wheat under such label. However, it will usually be the case that a purchaser of seed will want to know the variety as well as the kind. If seed is labeled as to variety, that variety name must be the correct one. If the variety is requested and is unknown, the label should have the statement, "variety unknown."

Can a seedsman sell mixed seed? He can, if he labels it "seed mixture."

Can an elevator sell seed wheat from a bin containing two or more varieties from a number of different farmers? It can, providing it labels such bin of seed wheat, "seed mixture," or "variety mixture," and also gives the other requirements of the label. Of course, if a bin of seed, even though from a number of farmers, is of the same variety, the variety name may be given.

What is meant by "percentage of purity?" The freedom of seed from foreign matter, or from other seeds distinguishable by their appearance, expressed in percentage.

Must the percentage of purity of seeds be exactly that indicated on the labels? The percentage of purity as indicated on the label must be within 2 per cent by weight.

What weeds are designated as noxious in the law? Any variety of wild mustards, any variety of clover and alfalfa dodder, wild oats, any variety of the plantain, bindweed, or wild morning glory, any variety of the poverty weed, crab grass, cheat, Canada thistle, cockle, sow thistle, wild barley or squirrel tail grass, and hop clover.

Does the seed act require that a seedsman must sell seed of any particular quality? No. A seedsman may sell seed of any quality, good or bad, providing he labels that seed correctly. The label must be accessible to every purchaser of seed and the purchaser of seed, knowing what the seed is from the label, buys on his own responsibility.

Is one required to buy seed of any particular quality? No. One may buy seed of any quality desired. He may buy poor seed or good seed. He may pay a low price or a high price.

May a sample containing noxious weed seed in any quantity, no matter how large, be offered for sale? Yes, providing the label states the fact.

May a sample with a low germination test be offered for sale? Yes, providing the label states the fact.

Does the Colorado Pure Seed Law set any standard of purity or of germination? No.

If a shipment of seeds from the wholesale dealer or farmer is divided by the retailer into separate packages or lots of five pounds or more and offered or exposed for sale, is it necessary to label each separate package or lot? It is. In such case the information on the wholesaler's label or farmer's label may be used, or a sample of seed may be sent to the seed laboratory where a test will be made and reported upon, free of charge. If the wholesaler's label is used on these smaller lots, the retailer assumes the responsibility for the correctness of the same.

Can an elevator sell so-called "commercial wheat" for seeding purposes? Yes. Such seed, of course, must be labeled according to the provisions of the act.

Where may seed be sent for test? Any citizen of this state or person shipping seed into Colorado for seeding purposes in the state has the privilege of submitting to the Colorado Seed Laboratory samples of field or garden seeds for tests and analyses, subject

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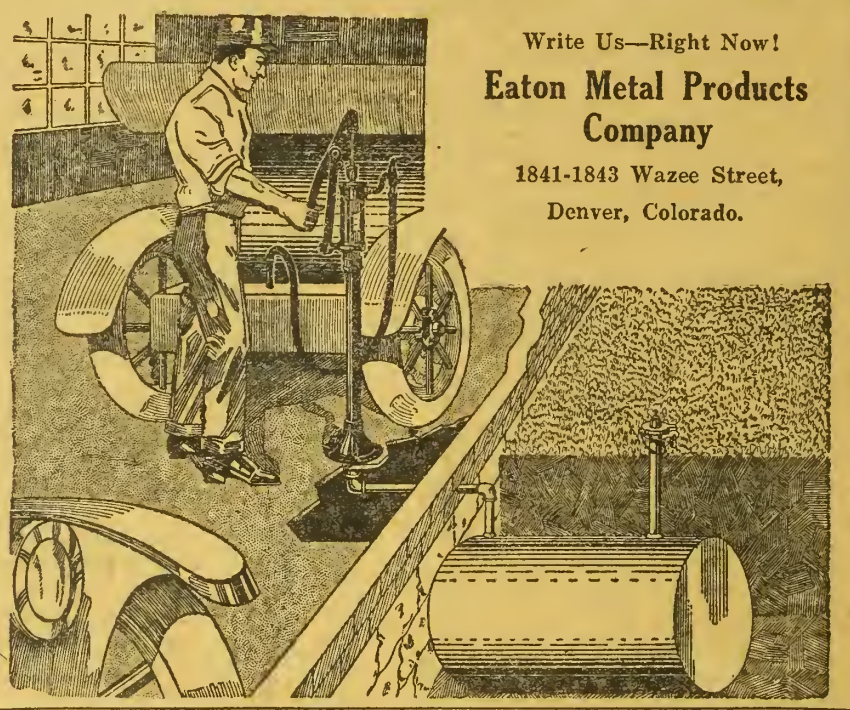

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These seeds are miles ahead of all others. They are hardier, purer, possess greater vitality, and will yield more to the acre than any seeds you ever used. They are your best investment.

Colorado Mountain Alfalfa "Mile High" Brand

Is an extremely hardy strain with a wonderful branching root, and rarely winterkills. It withstands extremes of temperature that often range, in our mountain valleys, from 30 degrees below zero in winter, to 110 above in summer. This seed is acclimated to the arid regions, cold climates, and the higher altitudes. That is why the yield is so large.

Ask for our "Mile High" grade of alfalfa. It is guaranteed to be free from dodder and other obnoxious weeds. It is plump, healthy seed, bright as gold, and of the highest purity and vitality

Our "Grimm" or "Everlasting" Alfalfa

Is grown in Colorado's mountain valleys, and is guaranteed pedigreed stock. It is the hardiest, most productive of all alfalfas. No better, purer, more virile seed is grown anywhere.

SEND FOR OUR CATALOG And wholesale price list of field and garden seeds. It is free on your request. Ask for Catalog 202 and state what crops you are especially interested in.

GRAND JUNCTION SEED CO.
Grand Junction, Colorado

to such rules and regulations as may be adopted by said laboratory.

May a seedsman or any other seller of seed test his own seed and use such data on the label? Yes, but he must stand back of his tests and, if they are not correct within the limits prescribed by law, he is subject to prosecution His tests are subject to re-tests by the Colorado Seed Laboratory.

What charges are made for tests and analyses of seeds by the Seed Laboratory? The Seed Laboratory has ruled that tests and analyses will be made free of charge until further notice. However, it probably cannot make more than 25 purity tests and 50 germination tests a month for any one person or firm.

What are the directions for sending samples to the laboratory for tests? Place name and address of sender on each package, give commonly accepted name of seed, variety if known; if seed is home-grown, so state, indicating the season harvested; if the seed was purchased, give the name of person or firm from whom purchased; state whether a purity or germination test is wanted, or both; if both are requested, indicate whether or not a purity report is desired before the germination report. Unless otherwise directed both purity and germination tests will be made and both reported at the same time. All transportation charges on seed sent to the laboratory must be prepaid. Address all samples and correspondence to The Colorado Seed Laboratory, Fort Collins, Colorado.

What sized sample should be sent for test and analysis? The minimum weight of seed forwarded for test should be: (a) one ounce of grass seed of any kind, or of white and alsike clovers; (b) two ounces of red and crimson clover, alfalfa, millet, flax, or seed of like size; (c) one-half pound of wheat, oats and other cereals, or seed of like size.

How shall seed be labeled that passes directly from farmer or grower to seed merchant? The regular label does not need to be used in this case, but it must be labeled, giving the commonly accepted name and the state or foreign country where the seed was grown, and, if in Colorado, the locality, or plainly marked "unknown."

Is it necessary to label field seed being shipped or hauled to a general market to be cleaned or graded before being offered for sale? No.

Must field seed being held in storage be labeled? No.

Can the regular label be dispensed with if it is labeled "not clean seed?" Yes, if held for sale outside of the state only.

Can the regular label be dispensed with if seed is labeled "not tested seed?" Yes, if held for sale outside of the state only.

Does the law control the importation of unlabeled seed? It does.

Is it unlawful for any transportation company to import field seed that is not tested and labeled? Yes.

What constitutes a misdemeanor under the act? "Whoever sells, offers or exposes for sale within the state any field seed as defined above without complying with the requirements of labeling, or whoever shall prevent the representatives of the Colorado Agricultural Experiment Station from inspecting said seed and collecting samples, or any transportation company or person who shall ship or bring field seed into this state without complying with the requirements above shall be guilty of a misdemeanor."

What is the penalty for one guilty of a misdemeanor? Upon conviction, one found guilty of a misdemeanor shall be fined not more than $100.

The Idaho Law.

C. E. AHLSON,

Deputy Seed Inspector for Idaho.

Where and how to buy seed is a question that will be asked time and again before seeding. Wherever seed is purchased, buy on grade. It is as unlawful for a farmer to sell alfalfa, timothy, red, white, and alsike clover to his neighbor without a grade as it is for the dealer to sell without a grade, according to the pure seed law of Idaho. The farmers should bear this in mind. Know what is being planted. Farmers are using much of the energy that ought to be devoted to the production of food to fight the noxious weed evil resulting from ignorant or wilful sale of impure seed. Buy from neighbors and dealers after a test of the seed shows it is up to the requirements of the seed law. It is an indication the seed is worth planting.

Naturally, if the crops are choked with weeds, both the yield and the quality of the harvest will be reduced. Pure, high quality seed commands a premium and is always in demand. It is poor economy to litter up a clean field by securing and sowing alfalfa or any other kind of seed containing a large percentage of weed seed just because it can be purchased from some source at half price. No farmer would purchase 100 pounds of No. 1 clover with a purity test of 99 per cent and then immediately proceed to purchase 10 or 15 pounds of noxious weed seeds and throw broadcast over the land seeded to 99 per cent clover. Buying on grade may prevent considerable grief.

The state seed laboratory at Boise has received a great many samples from various dealers, which is an indication that the dealers are endeavoring to give the farmers the assurance of good seed. The law requires that every lot of one pound or more of alfalfa, timothy, red, white, and alsike clover in possession for sale and distribution must be labeled giving (a) the name of the agricultural seed; (b) name and address of the person selling, offering or exposing for sale such seed; (c) grader and date of grade; (d) the year and locality in which the seed was grown and the kinds and number per pound of noxious weed seeds contained therein, using their common names. The inspectors will check up closely on all shipment into the state in order to protect the dealers and producers in Idaho. In turn, the dealers in the state will be required to have seed properly labeled.

Colorado has 1,733 physicians. Of these 111 are women.

Gassing the Gophers.

That on the Boise Project during the irrigation seasons of 1917 and 1918 many gophers were gassed with a Ford car is stated by W. G. Steward, Associate in Agricultural Engineering at the University of Idaho.

The exhaust pipe was cut between the engine and the muffler, and a two-way cut-out was inserted, so that the gas could be entirely cut off from the muffler, or could all be sent through the muffler. Into the exhaust pipe back of the muffler was inserted a piece of gas pipe to which was fastened, by a coupling, 25 feet of flexible metal steam hose.

Thise hose should be made of galvanized iron or other stiff metal, as it has to stand considerable hard usage.

To use this outfit the machine is run on the ditch bank or other place where the gopher holes may be located. Wherever a fresh mound of dirt appears, a hole is opened into the runway and the end of the hose is inserted into the hole. The cut-out is then turned so as to throw the burned gas back through the muffler into the hole. The engine is started and the throttle is advanced so that a lean mixture is burned. This creates a dense smoke that will appear at any point where the runway may open. If a hole is made in a runway, say 50 feet from the point where the hose is inserted, the smoke should show in from 4 to 10 seconds after the engine is started. If the gas has a mixture of cylinder oil the smoke will appear white and will show much plainer.

To use this outfit to advantage, there should be a party of three, one to drive, one to open the runway, and one to operate the hose. At times it may be an advantage to have another 25 feet of hose to attach, so as to reach holes where the machine cannot be driven.

The effect of the gas on gophers and squirrels is almost instantaneous.

It is surprising how quickly a mile of canal bank can be covered with this outfit. The bank should be worked at frequent intervals to kill any animals that may have escaped previously and to kill those that come in from the adjoining fields.

Ordinary rubber hose is not suitable for this work; as the heat and oil cause the rubber to soften and swell and thus close the hose so no smoke will pass through. Care should be taken that the engine is not overheated, as the burning of a lean mixture tends to rapid heating.

While this method is not as economical as poisoning, yet it can be used at a season when poison is ineffective, and will get the wise ones that avoid the trap or poison.—Idaho University News Letter.

Enclosed please find $1, for which extend my subscription to your valuable paper. I think you better keep Farmer Putnam on the job. He and Josephine's arguments are good. They always make us laugh. I think you are doing splendidly with your paper as everything in it is up to the minute. May success crown your efforts to make yours one of the best magazines in the west.—Joe Russel, Kadoka, So. Dakota.

Torpey Rubber Corp., Denver, Colo.

BRAENDER RUBBER & TIRE CO.

Factory: Rutherford New Jersey

Profitable Farm Poultry

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, WESTERN FARM LIFE, Denver, Colorado.

Hints on Incubation.

As the hatching season is on and biddy is not yet in a mood, we must look for a substitute which is the incubator. While they have been in actual use for many years, many persons are yet in the dark as to successful operating of one. I will, therefore, give you a few thoughts derived from actual experience along that line.

Doubtless, you all know how to select eggs for hatching and incubation. Manufacturers furnish instructions as to how to operate their machine which should be followed to the letter, but there is one phase of the operator's duty which is well to remember, viz.: One should fill and trim lamp about 4 p. m., thereby giving ample time to watch the conduct of the lamp before retiring; also the best part of the filling at night as a full lamp throws off a more even and better heat than when partially empty. It is well to note the size, condition, etc., of flame before removing lamp, also temperature, then be governed accordingly. One very important thing to practice is, when adjusting the flame, turn it a trifle higher than you wish to leave it, then turn it back to where it properly should be, which takes the fulness out of the wick and does away with the tendency to "crawl up," which has been the means of ruining many a hatch.

Allow from 24 to 36 hours for the temperature to reach 103 degrees and avoid it going higher the first week. Each egg should have a mark on; the date is very good. After the third day they should be turned daily until they begin to pip.

The last week when turnng, or oftener, if heat runs high, take a dozen or more eggs from the center of tray and with clean hands use the palms to roll the eggs around for two or three minutes, which gives the embryo exercise, placing the removed eggs in the corners. Were you to conceal yourself where biddy could not see you, you would see her, the last few days, frequently stand up and force her head and bill through the eggs; and the closer one keeps in line with nature in artificial incubation, the better the results.

Testing: On the sixth or seventh day we test for fertility, removing all infertile eggs, as an infertile egg or one with a dead germ will register from two to five degrees lower than one with a live germ. Should the bulb of the thermometer rest on one of these eggs the correct temperature of the egg chamber is not known. One is often in doubt at first test about some eggs. It is well to put large D on such eggs, then be careful not to rest or lay the thermometer on or near such eggs. Test on the fourteenth day for dead germs, which at first test looked promising but for some unknown cause have died, which is, nine times out of ten, for lack of vitality of the parent stock, caused by over feeding of rich grains, under feeding, crowded quarters, absence of green stuff, etc. They also should be removed.

On the eighteenth day test for moisture, which is ascertained by the air cell. If the air cell in the large end of the egg is the thickness of a man's thumb, moisture should be supplied in limited quantities by sand pans or sponges, or other devices; but if very small the heat should be run high, even to 105.

Stock intended for breeders should not be fed for, nor encouraged to lay to, amount to anything until nearly hatching time, as it reduces vitality, likewise the harvest.

One should never use pullets for breeders when it can be avoided.

We try our pullets out the first year, then select by trap-nesting and other kindred devices, our best layers. Shape and size is also kept in sight for our next season's breeders, mating to strong, vigorous cockerels making success almost certain, everything else being favorable.

If we are, for any reason, compelled to use pullets as breeders, we select an early hatched and quick matured, mating to two-year-old cock birds about ten to one.

We usually put about thirty pullets in one yard using three strong, vigorous cock birds, alternating one day on and two days off duty, and while off duty, feed them parched corn. Where one has but ten or twelve females with one male, it is necessary to catch him up every night and feed him to keep up his vitality.—A. W. Gingery, R. F. D., Aurora, Colo.

Coal Oil For Blindness?

Poultry Department, Western Farm Life: I saw in your paper of October 1st an article on chickens going blind. I have had some experience with that trouble. When I notice that the chicken is affected I pour coal oil over the head and legs and pour into the mouth all it can hold. I repeat this in a day or two. I have never lost one if this treatment is applied at the start.—N. Sandquist, Brighton, Colorado.

Start the Incubator.

The period of incubation varies with different species of poultry. For the hen it is 21 days, ducks 28 days, geese 30 to 34 days, and guinea fowls 26 to 28 days. The period of incubation will vary with conditions, so that a hatch may run one or two days over in some cases, due to an accident during incubation or to a low temperature throughout that period, while on the other hand it may come off earlier. If through any accident the eggs are chilled or over heated it is advisable to continue the hatch, testing the eggs after a few days to determine the extent of damage. Chickens have been hatched from eggs left out of the incubator all night as well as from eggs which have been subjected to a temperature of over 110 degrees F. for a short time.

Suppose there were no more advertisements

Just imagine for a minute that some power could stop all advertising How would that affect you?

It would cut you off from all direct, commercial news about things that you need and use in your every-day life. Somebody might be selling a new, better, more economical food; or a utensil that would save money and time; or an article that would add greatly to your comfort and well-being; or some better material for making shoes or clothing—but you would never know it.

Manufacturers would be unable to tell you about new and better things. They would thus find it hard to put these things on the market, and often would not try.

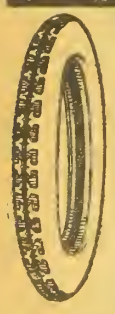
"It pays to advertise." And advertising pays not only the advertiser and publisher, but **pays you too.** It keeps you informed about the things you need in order to live a profitable, happy and useful life in this age of progress.

S. C. W. Leghorns, Tom Barron's Imp. Pedigreed Stock
Hatching Eggs---Day-old Chicks

450 OF OUR BRED-TO-LAY PULLETS LAID OVER $800.00 WORTH OF EGGS IN NOVEMBER AND DECEMBER. If you want layers, place your order at headquarters and make no mistake. Get the bred-to-lay kind. They make money for us and our customers; they will for you. Write for catalog, prices and facts, before you buy eggs or chicks. It's free; it tells all, write

FOWLER EGG FARM, Route I-B, Fowler, Colo.

Brand New TUBE FREE



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Double tread tires when properly made are the most economical tires for saving people to buy. Universal double tread tires represent the highest standard in reconstructed tires. They are made for mileage service only. Let us send you a trial order.

Guaranteed 5000 Miles

With each tire you buy we include the famous Universal Free Tube. These tubes are tough, elastic, seamless and are in all sizes. Cut your tire expense. *Order Now.*

Prices Include Tire and Tube

30x3	$ 7.30	34x4	$11.75
30x3½	8.40	34x4½	13.40
31x3½	8.85	35x4½	13.65
32x3½ S. S. Only	9.35	36x4½	14.15
31x4	10.60	35x5	14.85
32x4	10.95	36x5	15.15
33x4	11.40	37x5	15.30

Reliner Free With Every Tire

Orders shipped same day received. In ordering, state whether S. S., Clincher, Plain or Non-Skid required. Send $2 deposit for each tire, balance C.O.D. subject to examination; 5% special discount if full amount accompanies order.

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Save money on your auto parts, repairs or accessories. We can supply most anything in the line of auto supplies. Mail orders given special attention. All we ask is a chance to serve you.

The Western Auto & Parts Co.
1220 Curtis St.—At Speer Blvd.
Phone Champa 4919 Denver, Colo.

62 BREEDS PROFITABLE Pure-Bred Chickens, Geese, Ducks, Turkeys. Hardy Fowls, Eggs and Incubators at lowest prices. *Pioneer Poultry Farm.* Valuable poultry book and catalog FREE.
F. A. NEUBERT, Box 381, Mankato, Minn.

FREE Puncture Proof TUBE
6000 Mile Guarantee

UNION TIRES represent the highest standard in reconstructed tires. Their reinforcement of 4 extra layers of fabric reduces greatly blowout and puncture possibilities. Over 200,000 in use. To further increase mileage, we include with every tire ordered A PUNCTURE PROOF TUBE FREE that under ordinary conditions will last ten to 20,000 miles. Our 5,000-mile tire guarantee certificate with every tire.

Prices Include Tire and Tube

30x3	$7.40	32x4½	$12.00
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32x3½ S.S. only	9.10	34x4½	13.15
31x4	10.35	35x4½	13.40
32x4	10.70	36x4½	13.85
33x4	11.15	36x5	14.85
34x4	11.50	37x5	14.95

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FARMERS,

have you looked into Nature's method of keeping up and building up soil fertility?

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this method and you will add to your crop yields, cultivate the subsurface of your fields, add nitrogen and humus, increase the water-holding capacity of your soil, and leave large quantities of vegetable matter to decay and make plant food.

WESTROBAC,

a pure-bred bacterial culture, applied to all legume seeds at time of sowing or planting, will produce these results.

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Write, or call on

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ARMY GOODS BY MAIL

Just bought from government in good condition
O. D. all wool shirts, sizes 13 to 15½ .. $2.95
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O. D. all wool breeches and blouse, a suit. $7.85
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ST. PAUL SALVAGE BARGAIN HOUSE
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More On Artificial Lighting.

The practice of lighting the henhouse by artificial lights is something that is no longer a novelty. Many farmers are using lights. Commercial poultrymen have realized their value and have installed them. It is an established fact that electric lights have a definite influence on the normal production of the laying stock, says G. W. Hervey of the University of Missouri College of Agriculture. This effect on egg production does not necessarily mean an increased egg yield for the year, but it does mean an increased number of eggs during the winter season, when the supply is low and prices are high. In Missouri, yearling hens yield about 15 per cent production from November 1 to January 20 under the right kind of management. Then the production suddenly jumps and continues to rise until the middle of April, and remains at a maximum level of between 50 and 60 per cent until the second week in May, when it begins gradually to decline. The problem, then, is to get the hens to shell out eggs during November, December and early January. It is simply advancing normal production ahead two months and a half.

Many different systems of using the lights are being used. Some poultrymen turn on the lights at sundown and shut them off again at 9 o'clock. Others use the lights from 3 or 4 o'clock in the morning until dawn. Sometimes this artificial illumination is given both morning and night. The birds on the poultry farm of the University of Missouri are given artificial light two and one-half hours before dawn each day. Just as soon as the lights are turned on the attendant goes through the pens and fills the water pails. It has been found that the hens as soon as they jump from the perches invariably go to the drinking pails for water, and if it is not then supplied they are not active. It is a good plan to throw a few handfuls of scratch feed into the litter when the pails are filled to get the birds to scratching. Artificial lighting is of no value unless the birds are made to exercise during the increased light period. Attempts to increase the working day by turning on the lights at night have not as yet met with any measure of success at the University of Missouri. It is found that after the hens are given the regular afternoon scratch ration they go on the perches whether the lights are turned on or not. At present night lighting is not recommended.

Hens for Breeding Pens.

Only mature birds should be used in the breeding pens. Hens are more desirable than pullets, because they produce stronger chicks and because the hens can be more accurately judged for laying ability than can pullets. If the breeders were not picked out last fall they can be successfully chosen this month. The birds which lay best during the winter are the ones which will make the best record for the year and at mating time the best winter layers can be easily distinguished.

A good method of choosing breeders is to catch all of the best looking fowls. These will be the ones with well developed bodies, red combs, and alert appearance. By examining each bird her vigor and laying ability can be determined, and any bird found to be lacking in either of these characters should be discarded.

Health and Vigor—Strong vigor is indicated by a broad head; prominent, alert eye; short, well curved beak; red comb; broad chest; and a disposition to keep busy. Lack of vigor is shown by a narrow head; long, straight beak; listless or sunken eye; pale comb; narrow chest, and a disposition to loaf. Any bird showing evidence of a cold or roup should not be kept.

Laying Ability—The hens which have been heavy winter layers will show pale shanks and beak; no yellow in earlobes; soft, velvety skin, thin, smooth breast bone; straight, flexible pin bones; abdomen soft and pliable; vent, moist and expanded; width between pin bones at least three fingers. The poor layers will be found to have thick, coarse skin; prominent yellow shanks and beak; yellow in ear-lobes if Leghorns; breast bone thick and coarse; pin bones thick and unyielding; abdomen hard; vent dry and puckered; body depth less than three fingers; and the ends of the pin bones less than two fingers apart.—T. S. Townsley, Missouri.

TB. Infests Poultry.

A number of specimens from chickens and turkeys have been received by the Department of Bacteriology of Idaho University with inquiry as to the cause of certain spots occurring on the liver. These infected spots or lesions were, in the majority of cases, very characteristic of the avian type of tuberculosis and examination proved that this diagnosis was correct. The tubercle bacillus or germ causing tuberculosis was found on some of the lesions in great numbers. This disease seems to be widely disseminated throughout the state and is found in many poultry flocks.

This immediately brings forth the question, "Is it safe to use the meat for food?" and this is a somewhat difficult question to answer when the extent of the infection is not known or the particular fowl in question cannot be examined by the bacteriologist or pathologist. Fowls particularly, also pigeons, turkeys and pheasants suffer from this disease, but ducks and geese are exempt. On the other hand, guinea pigs, so susceptible to human tuberculosis, are very resistant to the type infecting chickens. In any event, there is little reason to believe that the type of tuberculosis infecting poultry will infect humans and this is doubly safegarded by the cooking in the preparation of the food.

This does not mean that poultry in any stage of tuberculosis infection is fit for human consumption. The infection is most commonly in the liver, but intestines, spleen, and lungs may be invaded. In case the intestines and spleen are invaded the case is an advanced one and the fowl should not be used for food. In case the fowl is apparently normal and healthy, but the liver alone is found infected, the meat may be used, but the liver discarded.—Idaho University News Letter.

Jay and Allan Sale.

D. Warnock & Sons of Loveland, Colo., and Jay & Allan, Boulder, Colo., will offer for public sale at Denver, April 9, 1920, the best bred lot of Registered Shorthorn cattle ever offered at public auction in the West. The western breeders will have a rare opportunity to add the best of individuals and blood lines to their herds or to start a foundation of a new herd. One of the greatest sons of Advocate's Model from a Diamond Goods dam is the only bull offered for sale. He is a beautiful roan, square, and straight

As a special attraction, the show heifer Model Beauty 2d, a winner at in his lines.
1920 Denver show and a daughter of Model Type, will be in the sale. Two excellent imported cows are selling. One Imp. Nonpariel past 2 years old and soon to calve to the service of Imp. Advocate's Model. The other Imp. Fairy Flower of the Lady Cathcart Patience family, a 4-year-old roan daughter of Imp. Villager from a dam by Sultan's Last will sell, in calf to the $5,000 Imp. Orangeman. Another cow in calf to the same bull is the 6-year-old daughter of Cumberland Marshall, the greatest futurity sire that ever lived, dam by Imp. Choice Goods, grand champion at St. Louis World's fair and grand dam the greatest show cow, Golden Abbottsburn by Young Abbottsburn, grand champion Chicago World's fair.

Two cows bred at Anoka Farms are listed. A 6-year-old daughter of the international grand champion, Fond Memory, and dam by Whitchall Sultan. She has a beautiful roan calf at side by a son of Imp. Villager. The second is a daughter of Regal Stamp and from a dam by Whitehall Sultan. She has a white bull calf by Village Perfection. Both are rebred to Broadhooks Dale, a double-grandson of Avondale in service in the Jay & Allan herd. There are also three good daughters and two grand daughters of the international grand champion Selection, a son of Avondale.

M-m-m! Vegetables Fresh From My Garden!

DID you ever know anyone, who once raised a good garden, to say it wasn't worth while? A Vegetable Garden affords enjoyment and recreation for every member of the family in addition to its fresh food supply.

Vegetables always taste better just off the vines or just out of the ground. Utilize the available land near you this summer and be sure of a fresh supply of radishes, lettuce, carrots, beets, turnips, beans, peas and all the other delicious vegetables you like so well,

Good soil, sunshine, good seeds and enjoyable effort are all that are required for a successful garden. The seeds are frequently given least consideration. This year decide to plant the best seeds you can get—select them from Northrup, King & Co.'s convenient seed case at your dealers. Practical cultural directions are printed on the back of each packet.

NORTHRUP, KING & CO.'S SEEDS

SALT LAKE CITY, UTAH.

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Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

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Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LEGHORNS

TOM BARRON SINGLE COMB WHITE LEGhorns. Eggs for hatching. F. B. Morger, Fowler, Colo.

ROSE COMB BROWN LEGHORN ROOSTERS, state winners; three dollars. Rufus Standiford, Reading, Kansas.

KYFFIN'S BUSINESS BUFFS—EGGBRED S. C. Buff Leghorns. Mrs. J. W. Kyffin, R. F. D. 2, Box 142B, Pueblo, Colo.

BABY CHICKS. BOOKING ORDERS NOW. Single Comb White Leghorns, selected stock, best laying strain. Gilbert Anderson, Norfolk, Nebr.

S. C. WHITE LEGHORNS—NOW IS THE TIME to place your order for hatching eggs. My hens are bred to lay, and do it. L. E. Larson, Fort Morgan, Colo.

BABY CHIX—BUFF LEGHORNS MARCH 10TH, weekly hatches after this. Other breeds in any quantity. Book your orders early to avoid disappointment. Champney, 2057 So. Broadway, Denver.

SINGLE COMB BUFF LEGHORNS—SELECT heavy layers; vigorous range stock. From best breeders. Eggs, $4.00 per 50; $7.50 per 100. Mrs. J. Rose, So. Locust St., Grand Island, Neb.

S. C. WHITE LEGHORN COCKERELS $2.50 each, three for $6.75. Booking orders now for eggs for March and April delivery; $1.50 for 15, 8c each in lots of 30 or more Wm. A. Draves, Lemoyne, Nebr.

SINGLE COMB WHITE LEGHORN HATCHING eggs (Young's Strain), from my Iowa and Nebraska State Show Champions. (Trapnested.-My prirces are no higher than from common stock. Mating list. C. G. Gould, Alma, Neb.

BABY CHICKS—S. C. WHITE LEGHORNS, from Hogan tested, selected, early laying stock. All eggs from my own raising. Price for February and March setting 25c each, post prepaid. Cash with order. Please order early. Ivar Johnson, Fremont, Neb.

RIVERSIDE POULTRY FARM SINGLE COMB White Leghorns. Heavy winter layers. Today, Jan. 1, we gathered 330 eggs from 450 pullets and 200 yearling hens. We have been breeding our Leghorns for 15 years to lay more eggs than common hens at all times, especially in winter when eggs are high. We breed from nothing but winter layers. Get Walker's strain and get winter layers. Baby chicks and hatching eggs for sale. Prices reasonable. Write for circular and price list. H. D. Walker & Sons, La Junta, Colo.

PLYMOUTH ROCKS

BARRED PLYMOUTH ROCK EGGS, SETTING of 15, $1.50. Address John M. Mischke, Route 3, Loveland, Colo.

LIMING'S HEAVY WEIGHT WHITE ROCKS. Eggs $2 per 15. Quality Fruit & Poultry Farm, Manzanola, Colo.

WHITE PLYMOUTH ROCK HATCHING EGGS and baby chicks from winter layers. A. W. Gingery, 1951 Geneva st., Aurora, Colo.

RINGLET BARRED ROCK EGGS AND DAY-OLD chicks. Write for prices. Mrs. C. N. Bailey, Lyndon, Kans.

BARRED PLYMOUTH ROCK EGGS FOR HATCHing, $1.50 for setting of 15. Mrs. C. J. Davidson, Fort Lupton, Colo.

PUREBRED BARRED ROCK COCKERELS, $3; winter laying strain. Eggs, 15 for $5. E. Plessinger, Cheyenne Wells, Colo.

BARRED ROCK EGGS FROM GOOD LAYING fowls. Open range. $1.50 for 15; $8.50 per 100. Mrs. Geo. Stewart, Aroya, Colo.

WINTER LAYERS! BARRED PLYMOUTH ROCK eggs, 15 for $1.50; 50 for $4.00. Mrs. Lon Edwards, 1039 Garfield Ave., Loveland, Colo.

WINTER LAYERS; BARRED PLYMOUTH Rock eggs for hatching; $2.00, 15; $7.00, 100. Mrs. J. Thompson, 1105 Garfield, Loveland, Colo.

BARRED ROCKS BRED FOR HEAVY EGG PRODuction, and exhibition quality. Cockerels, $7.50, $10 and $15. Ahlquist Bros., Box A, Florence, Nebr.

BARRED ROCK EGGS FOR HATCHING, FROM pens, either light or dark, $3 for 15; from range flock, $6 for 100. Send for mating list. Chester Blunt, Route 1, Greeley, Colo.

LAYMORE BARRED ROCKS—Eggs $5.00 for 15. Baby chicks 50 cents each. Nebraska State Fair and Missouri first prize winners. First in Colorado in profit with over $70 each in 1918. Rhode Island baby chicks, $20.00 per 100. J. R. Anderson & Son, Ft. Morgan, Colo.

FOR SALE—BEST WHITE ROCKS IN THE West. Seven mated pens; pullets and cockerels to offer; setting eggs, $3.00 and 5.00. Last January at Denver Stock Show we won First Cockerel, First Pullet, First Hen, and many other prizes. F. L. Toliver, Ft. Collins, Colo.

RHODE ISLAND REDS

S. C. RED COCKERELS CHEAP. U. G. Barnes, Norman, Neb.

S. C. RED COCKERELS FOR SALE, $3 EACH, or two for $5. Ed Grotenhuis, Crawford, Colo.

FOR SALE—PURE BRED ROSE COMB RHODE Island Red cockerels, from blue ribbon stock, $4 each. Mrs. Ernest Hieber, Burns, Wyo.

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

FINE CHICKENS AT THE TUCKER FARM. Rhode Island White, Rhode Island Reds. Baby chicks. Write me your wants; eggs in season. Mrs. Hattie M. Tucker, Pawnee, Okla.

LOWER'S POULTRY FARM, ARVADA, COLO. is the oldest and largest breeder of thoroughbred S. C. Rhode Island Reds in the West. Our stock is line bred, from selected heavy laying type for seventeen years. Eggs for hatching, $12 per 100, $5 for 30. Send for catalog and price list of stock and baby chicks.

SINGLE COMB REDS—WINNERS AT NEBRASka leading shows. Eggs, special matings, $4.00 and $5.00 per setting; farm flock, $6.00 per 100 Place orders now. Guy Birt, Hickman, Neb.

WYANDOTTES.

PARTRIDGE WYANDOTTES—CHOICE STOCK and eggs. Fred Karre, Cotesfield, Neb.

WHITE WYANDOTTE COCKERELS, PRIZE winning; 232 egg strain, $5. E. M. Downs, Route 1, Yuma, Colo.

COCKERELS FOR SALE—A FEW PUREBRED White Wyandottes, $2.50. A. W. Bickel, Correctionville, Ia.

FOR SALE—WHITE WYANDOTTE EGGS FROM trap-nested stock. A few cockerels. Mrs. Mary M. Wright, Rte. 2, Box 314, Boulder, Colo.

GET CLARY'S PRIZE WINNING STRAIN CHALK White Wyandottes. Cockerels, $3, $5, $7, $10. Satisfaction guaranteed. George Clary, Endicott, Neb.

WHITE WYANDOTTE EGGS—BOOKING ORders now for March and April delivery. $1.50 for 15; 8c each in lots of 30 or more. Wm. A. Draves, Lemoyne, Neb.

PUREBRED SILVER LACED WYANDOTTE Cockerels; large, well-marked, $3.00 each. Year old hens and pullets, $2.50 each. Eggs in season, $1.50 per 15. Mrs. D. D. Little, Clarks, Neb.

ORPINGTONS.

PUREBRED BUFF ORPINGTON EGGS, $1.50 15; $7.50 100. Mrs. C. H. Headberg, Axtell, Nebr.

HIGH CLASS BUFF ORPINGTON EGGS FOR hatching. Winter laying strain, $2.50 for setting of 15, $6 per 50, $10 per 100. Good hatch and satisfaction guaranteed. Mrs. J. W. Lee, Bridgeport, Neb.

GAMES.

GAMES—11 STRAINS. CATALOG FREE. N. F. Baty, Whitesboro, Tex.

COLUMBIA HATCHERY—WE CAN SUPPLY you with any quantity of Baby Chicks. We have 14 varieties including all leading breeds. Write for our prices, you will save money. P. O. Box 1102, Denver, Colo.

YOU BUY THE BEST CHICKS FOR THE LEAST money, from the Colwell Hatchery, Smith Center, Kansas. 150,000 to be shipped everywhere; 18 cents each, 500 for $89; guaranteed alive or replaced free.

BLAKELAND EVERLAYERS, SINGLE COMB White Leghorns. The famous Tancred high-laying strain. Breeding birds, hatching eggs and baby chicks. Place orders now. Quality the best only. Satisfaction guaranteed. Blakeland Farm, Littleton, Colo.

BABY CHICKS THAT WILL LIVE AND THRIVE in this mountain territory. Eggs selected from the best Colorado flocks. Remember we have the only hatchery in Denver. Buy direct from us and save reshipping. Present capacity 30,000 eggs. Incubators and Brooders. Denver Incubator Co. and Hatchery, 173 South Broadway.

COLUMBINE BABY CHICK COMPANY—WE are booking orders for March and April hatches of White and Brown Leghorns, Reds, Barred and White Rocks, Orpingtons, Wyandottes, Brahmas, Black Langshans, and Minorcas. We guarantee live delivery. Ship everywhere. Mail or Express. We batch from thoroughbred flocks under expert supervision and not from eggs obtained from anywhere and anyhow. They live. They lay. They pay. Send for price list and booklet on Baby Chicks free. Our only address, 459A So. Gaylord, Denver, Colo. Phone So. 2602.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HOGS

BIG BONE POLAND CHINA, FALL GILTS, $40; yearling sows, $100. J. O. Hendricks, Seibert, Colo.

GOATS

FARM GOATS FOR SALE. GEO. HAU Huerfano, Colo.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—GENUINE SIX ROW BARLEY, MAtures ninety days. P. O. Box 13, Denver.

TWO POUNDS TESTED SUGAR BEET SEED, postpaid. Starbird Bros., Meeker, Colo.

1,000 ONION SETS $1.00, PREPAID. CATAlogue free. Long Seed Co., Boulder, Colo.

BEST WHITE BLOSSOM SWEET CLOVER, VERY reasonable. John Lewis, Route 1, Madison, Kan.

ALFALFA SEED—FANCY WYOMING. SAMples; catalogue free. Long Seed Co., Boulder, Colo.

RECLEANED CANE SEED, $4.15 PER HUNdred. Sacks furnished. Geo. W. Wheeler, Otis, Colo.

MINNESOTA NO. 13 SEED CORN—CERTIFIED and registered stocks. Catalogue free. Long Seed Co., Boulder, Colo.

WHITE SWEET CLOVER FANCY COLORADO hulled, scarified seed, 100 lbs. $32.00. Catalogue free. Long Seed Co., Boulder, Colo.

GROW YOUR OWN SUGAR—GENUINE SUGAR beet seed, with instructions for making syrup and sugar, 4 ozs. 25c. Catalogue free. Long Seed Co., Boulder, Colo.

SEED CORN—AMERICA'S BEST QUALITY. 90 to 130 bushel kinds. Produces 2¼ pound ears. Must please or money back. Bushel, $4.00. Wiltse, Rulo, Nebr.

STRAWBERRY PLANTS.

STRAWBERRY PLANTS—DAHLIA BULBS, 150 kinds. Write for prices, all kinds nursery stock. McMullen Nursery, Box 374, Council Bluffs, Ia

NURSERY STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

DO YOU WANT A BARGAIN ON WELL-ROOTed and branded Cherry, Apple, Pear, Peach and Plum trees and berry plants? Ask for our free instructive and humorous catalog with prices lower than other first class nurseries. Manhattan Nursery, formerly Manhattan, Kans., now Topeka; Kans.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wisconsin.

IDAHO LAKE REGION OPPORTUNITIES—Farms all sizes and prices for sale. Peter Johnson, Sandpoint, Idaho.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

FARM AND CATTLE RANCHES—CHOICE LIST. If interested call or write F. E. Wrockloff, Merchants Bank, Seventeenth and Curtis Streets, Denver, Colo.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description, location and cash price. James P. White, New Franklin, Mo.

FOR SALE—5 ACRES, ½ ACRE ASPARAGUS, alfalfa; 6-room brick; out buildings; $4,500; terms. Walking distance end Washington Park cars. Carl Schlumpf, 4601 E. Louisiana, Denver.

FOR SALE—RANCH OF 80 ACRES, IMPROVED, good water right; 300 bead of good cattle, Whiteface and Shorthorn; good range. Located two miles from Hotchkiss, Colo. For further information, write John Head, Hotchkiss, Colo.

FARMS AND RANCHES

CHEAP LAND AND HOMES IN THE HEA[illegible]Y, fertile, beautiful Ozarks, 15,000 acres in any size tract desired, $5.00 to $10.00 per acre, part terms; great fruit and stock country, free range, fine timber, pure springs and streams, ideal for homes. Selling fast, so write quick for circulars. Tell your friends. U. S. Barnsley, Ozone, Arkansas.

STOCKMEN ATTENTION—My beautiful modern 10-room home, completely furnished, is now offered for the first time. All in splendid condition, large roomy porches, high and sightly location, fine lawn, beautiful shade, large barn and garage for several cars, grounds 125x150 feet, sewer connections all in and all special improvement taxes paid. Will consider an exchange for good stock ranch of either the same or greater value and pay cash difference. This is the best residence in Littleton, Denver's best suburb. Owner, P. O. Box D, Littleton, Colo.

ATTENTION STOCKMEN — WE HAVE TWO stock ranch bargains. Just what you are looking for; each ranch comprises 320 acres deeded land with substantial improvements and large acreage under irrigation, and in alfalfa, timothy, clover hay, unlimited outside free range, with 4,000 acres of leased land under fence for fall pasture. These ranches are located three miles apart, 125 miles from Denver. Good shipping point, big money makers. Prices $12,000 and $13,600 on good terms. See us at once for these. Reynolds, Covey & Reynolds, 625 Exchange Bldg., Denver, Colo.

STROUT'S SPRING CATALOG—FARMS—JUST out. More than 1,000,000 people will read this 100-page catalog packed with money-making farms in 33 states. You'll want to read details, page 75 splendid midwest 160 acres corn, grain stock farm, 8-room brick house, big barns, silo, corn houses, widow throws in two horses, cows, machinery, all for $12,000, only $3,000 down. "Overlook Farm," page 8, borders river, 65 acres, 6-room house, new barns, pair horses, other stock, implements, all for $1,650, part cash. Write today for your free copy, showing you the farm you want, where you want it, at the prirce you want to pay. Strout Farm Agency, 831-BA, N. Y. Life Building, Kansas City, Mo.

I WILL SELL OUR STOCK RANCH AT BAIleys, Colo., for less than its real value, 275 acres, of which about 100 acres are in hay meadow and cultivated bottom land; good 11-room house with completely equipped bathroom, Delco electric light system; also 3-room cottage; both houses completely furnished; lots of stock and haybarns and other outbuildings; old forest reserve rights; near new state auto road, Denver to Baileys; cuts plenty of hay; immediate possession, but don't want any trades. This place and range will run 250 head of cattle, and about 95 head go witb the place; also work horses, harness, all kinds of farm machinery, household furniture, all hay in stacks and barns. This is a bargain at $22,000. Ned Corbin, Baileys, Colo.

Sold $50.00 Order From One Ad

That's What One of Our Advertisers Did.

If you have stock or eggs to sell this spring, send in an advertisement of what you have to offer. You will find all the buyers you want from among our 50,000 readers.

Others have found this the best place to advertise, you will also if you will but give it a trial.

Read what some of our advertisers have to say:

Western Farm Life: It sure pays to advertise in Western Farm Life. I have sold out all surplus pullets.—Mrs. J. W. Kyffin, Pueblo, Colo.

Western Farm Life: Have had excellent results from my poultry ad with you.—Chester Blunt, Greeley, Colo.

Western Farm Life Run my ad in the next two issues. From this little ad I have sold poultry in several Western States and all over Colorado. Thanks to you.—F. L. Toliver, Fort Collins, Colo.

Western Farm Life: Your paper sure gets results. Will have another advertisement later.—Vivian Anderson.

Western Farm Life: Have sold all my cockerels, and the pulling power of Western Farm Life is much appreciated.—E. A. Miller, Alma, Neb.

Western Farm Life: It might be of interest to you to know that I have this season sold through your paper one $50.00 order and numerous smaller orders. I find your paper a good advertising medium.—Liston L. Hall, Gering, Nebraska.

We receive almost daily letters like the ones quoted above from breeders who are successfully using the classified advertising columns of Western Farm Life. Every one of our 50,000 subscribers is a prospective buyer of poultry and eggs this spring. Send in your advertisement today, so it will reach us in time for the next issue. Rate, 5c a word; four or more insertions, 4c a word each insertion. Address

WESTERN FARM LIFE
DENVER, COLORADO

ANCONAS

APPLETON S. C. ANCONAS—FARMER'S FAvorite moneymakers. $766.79 profit from 50 hens one year. Hardy, quick maturing. Exhibition-utility. 15 big hatchable eggs, $2.00; 45, $5.00; 100, $10.00. 25 husky baby chicks, $7.00; 50, $13.00; 100, $25.00. Book orders today. Satisfaction guaranteed. Appleton Poultry Farm, Rocky Ford, Colo. Box D.

TURKEYS.

PRIZE WINNING BRONZE TURKEYS—Denver trophy winners for five years. Toms, $15 up. Some good barred rock cockerels, $3.00. Eggs for hatching. Mrs. L. P. Stone, Lexington, Nebr.

TURKEY EGGS—MAMMOTH BRONZE, FROM 16 to 20 pound hens, 50c each, for April and May delivery. Booking orders now. Wm. A. Draves, Lemoyne, Neb.

PURE BOURBON RED TURKEY EGGS, $6 PER 12. White African Guinea eggs, 10 cents each. Single comb White Leghorn eggs, $6 per 100. All eggs postpaid and guaranteed. Vivian Anderson, Oswego, Kans.

SEVERAL VARIETIES

FINE BLACK MINORCA AND BUFF ORPINGton Eggs. Baby chicks. Frank A. Agnew, Southside, Omaha, Neb.

BLOODED ANCONA, R. I. REDS, AND PLYMouth Rock setting eggs, $1.50. J. O. Darling, Beulah Way, Pueblo, Colo.

WHITE AFRICAN GUINEAS, $1.50. MAMmoth Pekin Drakes, $2.00. Eggs in season. Mrs. Edna Ozman, Amherst, Colo.

BLACK LANGSHANS, SHOW WINNERS, EGG producers. Cockerels, $3 up. Eggs, $3 and $5 per 13. O. I. Moon, Ft. Morgan, Colo.

BABY CHICKS—ORDER EARLY, GET CHICKS from the winter layers. Price list. Sarver Poultry Farms, Hastings, Nebr.

EGGS FOR HATCHING—SILVER CAMPINES, $2; Buff Leghorns, $2; Blue Andalusians, $2; Single C. R. I. Reds, $2 for 15 eggs. John L. Miller, Arvada, Colo.

BUFF- LEGHORNS, RHODE ISLAND REDS—best layers on earth. Headquarters for cockerels, baby chix; hatching eggs. Write us your wants. Champney, 2057 Soutb Broadway, Denver.

FOR SALE—REGISTERED BIG TYPE DUROCJersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

FOR SALE—TWO DUROC BOAR PIGS—COLOrado-Nebraska prize winning stock. Ready for service about April 1. C. E. Stretcher, Aurora, Colo.

FOR SALE—POLAND-CHINAS "BIG TYPE" bred gilts, spring boars, fall pigs; all registered. Write for information. F. L. Toliver Stock Farm, Ft. Collins, Colo.

STOCK HOGS WANTED—WE WANT TO BUY several hundred head of pigs and hogs weighing from 60 pounds up. Let us know what you have for sale. Write Duroc Farms, 412 Cooper Building, Denver, Colo.

REGISTERED BIG TYPE DUROC JERSEY boars and gilts, the kind tbat brings the money at the block. Fashionably and strongly bred by our herd boar, Orion Cherry King 15th, and out of Defender sows. We are sold out on anytbing up to July farrow. Money back if not satisfied. J. O. D. Ranch, Aroya, Colo.

CATTLE

FOR SALE—20 HEAD HIGH GRADE MILKING Shorthorn heifers, 8 to 20 months old. J. P. McEnroy, Larkspur, Colo.

REGISTERED HEREFORD BULLS — ABOUT thirty coming yearlings, two coming two-year-olds, and one 5-year-old bull, the sire of the others, and one of our herd bulls. All best Anxiety breeding, well marked, big boned, and not pampered with flesh to hide their defects. Priced to sell. J. O. D. Ranch, Aroya, Colo.

HORSES.

SHETLAND PONIES FOR SALE—STALLION coming 7; gelding coming 5. Both have won prizes at the Larimer County Fair. Also double harness and buggy. John M. Mischke, Route 3, Loveland, Colo.

FOR SALE—SIX REGISTERED PERCHERON stallions—one my herd sire, King Link, No. 88104, seven years old—and five of his colts. As I wish to sell all my horses, I am making low prices. R. A. Chace, Ft. Morgan, Colo.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

AGENTS—WRITE TODAY FOR CATALOG OF our sprayer and autowasher. Do not miss this opportunity. Columbian Mail Crane Co., Colum bus, Ohio.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

WANTED—RAILWAY MAIL CLERKS, MEN— Women. Commence $110 month. Experience unnecessary. Common education sufficient. List positions open—free. Write immediately. Franklin Institute, Dept. P171, Rochester, N. Y.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No displa type or illustrations admitted.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—OR TRADE FOR LAND, WALLIS Cub Tractor, with four-bottom plow, 12-ft. tandem disc and press drill. Write for more particulars. Gus Herfert, Julesburg, Colo.

ALFALFA MILL.

COMBINED ALFALFA MILL AND ENSILAGE cutter in first class condition. Price new $550, will take $250 cash. Write or phone C. E. Stretcher, Aurora, Colo.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

TYPEWRITER

GOOD TYPEWRITER FOR SALE CHEAP—FREE trial, easy payments if wanted. Write Bertha Payne, Shawnee, Kansas.

TANNING

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

INVENTIONS

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

GROCERIES AND SUPPLIES

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

Prevention of Corn Smut.

Will the formalin treatment for seed corn decrease the amount of smut in the new crop? Will the treatment injure the germ of corn?—E. D., Yuma, county, Colo

Formalin treatment is of no effect for the prevention of smut in corn. This treatment is useful only for small grains, including wheat, barley, oats, millet, sorghum and rye Corn smut cannot be controlled by treatment of the seed. Prof. W. W. Robbins advises as follows:

Smut—The appearance of corn smut is well-known. Black smut masses usually appear on the ears, but also frequently on tassels, leaves, and stems Black spores are produced in tremendous numbers and scattered broadcast by the wind. Spores may live in the soil or in the manure pile. The spores that rest over the winter, in the spring produce spores of another type, and it is these new spring or early summer spores that infect the corn plant. Any part of the corn plant may be infected. Hence, seed treatment is useless.

Control—(1) The formalin sprinkle and hot water treatments are useless. Corn smut cannot be controlled by any form of seed treatment.

(2) Corn smut spores may pass through the digestive tract of animals without destroying their germinating power. Furthermore, the spores may actually grow and reproduce in fresh manure. Use well rotted manure, as it contains few or no living spores.

(3) Remove and burn all smut masses from field before they discharge the spores.

(4) Since spores may remain alive in the soil several years, crop rotation is of value. Any other crop than corn may be used in the rotation, for corn smut spores cannot cause smut, or be carried over, in any other plant.

Cows Have Garget.

In the past two years I have had four cows go dry suddenly, or in a few days, in one or two teats just after calving or during milking period. I go to milk and the cow's bag seems full, but when I start milking a certain teat or teats there is just one squirt and then an interval of waiting for it to fill again. In a few days or a week it stops entirely and that part of the bag dries up. It seems to affect the best cows. They run on ordinary upland prairie pasture very free of weeds. Please advise as to the cause and remedy.—A. C. W., New Mexico.

From your description of the difficulty I would say that the cows were affected with garget, which shows up in various forms. The treatment usually recommended is to give the animal a dose of Epsom salts and keep massaging the udder several times daily. Keep going through the process of milking, as this sometimes will prevent the total loss of the quarter.—H. A. L.

Livestock Field Notes.

Mr Chas. M. Hill of Rouse, Colo., is offering two fine registered Holstein calves. One of them is a fine heifer, the other is of good herd sire material. He is also offering his herd sire, Branch Hill Pontiac Cornucopia. They have good A. R. O. backing. Read Mr. Hill's ad in this issue.

Your best opportunity of the year to get the best in Herefords and Shorthorns will be at the big sales to be held at the Stock Show arena at the Denver Stock Yards on April 7th, 8th and 9th. Read the announcement of these sales in our Livestock Department of this issue.

On April 9th, Dave Warnock & Sons of Loveland, Colo., and Jay & Allan of Boulder, Colo., will hold a registered Shorthorn sale at the Stock Show pavilion at Denver. Fifty head of high class stuff will be sold. There is only on bull in the lot, the balance being cows with calf at side and heavy with calf, and some excellent open heifers. This is a good opportunity to get some female foundation stock for your Shorthorn herd.

The S. L. W. Ranch will sell ten head of select hardy young Hereford bulls at the Denver sale April 7th to 9th. This sale will be held in the Stock Show pavilion. Read the S. L. W. ad in this issue of Western Farm Life.

If you are looking for a fine registered jack—a good outstanding 4-year-old individual, write to Mr. Wm. H. Ballinger of Longmont, Colo. Read his ad in this issue of Western Farm Life.

A big closing-out sale will be held at the Bowles Ranch, one mile west of Littleton, Colo., on Friday, March 12th. They will sell thirty head of horses, and eighty head of dairy cattle, mostly Holsteins, but a few Jerseys. Also a good line of farm machinery. Read the ad in our Livestock Department of this issue.

To our readers who are looking for big type Duroc Jersey hogs of the Defender breeding, we call attention to the breeder's card in our livestock section to Edbrooke's Durocs. They can be seen at his Green Acre farm near Denver just west of town. Mr. Edbrooke took many premiums on his Durocs at the National Western. He also breeds Wild Geese and Wild Mallard Ducks.

Let Western Farm Life Service Bureau help solve your problems.

3 HOLSTEIN BULL CALVES

Well grown, nicely marked for high producing dams. Sire, Western Sir Colantha Ascalon, he by Western Ascalon Champion Boy, a son of Colorado's Greatest Dairy Cow, and half brother to Colorado's Greatest Dairy Heifer Write us.

W. B. & E. M. DOWNS,
Yuma, Colorado.

REGISTERED JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.
H. J. VAUGHN, KIRK, COLO.

BRED SOWS AND GILTS

We are offering a lot of choice Poland China Bred Sows and Gilts, all bred for March and April litters. State Fair winning blood runs through our entire herd.

Write Us Your Wants.
THE DEMING RANCH,
Oswego, Kansas.

Forest Glen Shorthorns

We are offering some medium-priced cows and a few choice bulls at attractive prices.

Cornforth Live Stock Co.
ELBERT, COLO.

DUROC JERSEYS

A few fall Duroc pigs sired by a son of Scissors, and from prize winning sows, $35 each.

Also an extra good March boar, sired by Big Bone Wonder.

AUGUST F. BORGMANN
R. F. D. 1, Box 124, Longmont, Colo.

Polled Herefords

Double Standard
Herd Headed by Polled Dude 2nd 11187, 612340
Beau Donald, P. Plato and March On Blood in the Herd
SMITH LIVESTOCK CO.
Chivington, Colo.

Facts in BLACK & WHITE

Convert Roughage Into Dairy Products With Purebred Holstein Cattle

Cows that convert the roughage of your farm into the best of milk, butter, veal and beef are worth more to you than cows that are particular about their food. If you sell your milk for direct consumption, to a cheese factory, or condensary, of course, you won't consider any other breed. When it comes to butter, bear in mind that the separator shows that the Holstein cow still leads. If you have any young stock you need all that extra skim milk.

Send for Free Illustrated Booklets. They contain valuable information to any Dairyman.

THE HOLSTEIN-FRIESIAN ASS'N
186 Hudson Street
BRATTLEBORO, VERMONT

Glendale Stock Farm

Irvindale Rowdy Grand Champion Belgian Stallion Chicago, 1917, Denver, 1918 and 1919

Breeders of
BELGIAN HORSES and POLLED HEREFORD CATTLE
Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.

Registered Breeding Bulls and Heifers

HEREFORDS
SHORTHORNS

Young sctock of both sexes for sale at all times. Our sales yard is located within two blocks of The Denver Union Stock Yards. We are pleased to show our stock at all times.

THE LOWELL PUREBRED CATTLE CO.
Union Stock Yards, Denver.

FOR SALE
Registered Holsteins

I am offering for sale a bull calf and a heifer calf. Also my herd sire —BRANCH HILL PONTIAC CORNUCOPIA.

This sire is a worthy member of the Pontiac family, and is the sire of the two calves I am offering.

(All have excellent A. R. O. backing.

PRICED RIGHT—WRITE ME.

CHAS. M. HILL
Box 15 Rouse, Colo.

Win-O-Dee Farm Holsteins

Herd Bull KING TWISK SEGIS PONTIAC 182200.

This sire's two nearest dams have a record of 35.38 lbs. butter from 733 lbs. milk in seven days. The average record of his six nearest dams is 24.38 lbs. butter in seven days. **Young Stock of Both Sexes For Sale.**

P. K. HUDSPETH, Pueblo, Colo.
Silcam Star Route.

FOR SALE
Registered Mammoth Jack

Four Years Old Last October

WEIGHT 1,000 POUNDS

No better in Northern Colorado. Best of papers.

For further particulars, write

WM. H. BALLINGER
Longmont, Colo.

MILK RECORDS
Do Not Replace Straight Bates Shorthorn Blood
FOR
Straight Bates Shorthorns are the "foundation source' of the Milking Shorthorns of England and America.

The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

They Want Shorthorn Beef

On New Year's Day, Capt. A. W. Farney, Weston, Mo., topped the Kansas City market with 40 warmed-up Shorthorn steers at $14.

The next week Loch Bros., Burchard, Nebr., topped the same market with Shorthorn steers, one heifer included, at $15.50.

The grand champion load of feeders at the Western Stock Show, Denver, were yearling Shorthorns grown and fed by Weiss Bros., Elizabeth, Colo. They sold at $25.50 to the Hopley Stock Farm, Atlantic, Ia., a world's record for yearlings. Weiss Bros. made the world's record a year ago on a Shorthorn load of feeders at $20.75.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave. Chicago, Ill.

Big Bargain in Sheep

My entire band of registered and high grade sheep is on the market about 1,000 head in all, including 250 Rambouillet, 125 Hampshire, and balance range sheep from yearlings to aged, about half and half. I have one of the finest bunches of Rambouillets in Wyoming, having paid $1,336 and $600 for two of the stud rams.

I am offering the whole band at $17.50 per head, right straight through, to the man who takes them all.

Besides these choice Rambouillets there are some outstanding Lincolns, three of the registered rams in that breed costing me $150 a head. The flock has never been picked over and the range stuff is in fair condition, having been fed hay and grain since last fall. Write or wire me if you want first chance at this extraordinary bargain.

DELL PRATT, MONETA, WYOMING.

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DUROC JERSEY HOGS
BRED GILTS FOR SALE.
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Highland Sta., Route 5. Denver
Phone Arvada 105-R-2.

H. C. DENNIS, Auctioneer
FORT MORGAN, COLORADO
Registered Shorthorn and Jersey Cattle
Real Estate Sales Conducted. I can sell your real estate if it can be sold.
Wire at my expense for dates.
Phone: Res. Morgan 155J; Office Morgan 15

PERCHERONS & BELGIANS

Purebred bay stallions and mares, 2 to 6 years old, weighing 1,800 to 2,150 lbs The best that the world can produce. Every one has been a first or second prize winner at Denver

JOS. ROUSSELLE & SONS
SEWARD, NEBR.

Straight and Polled Shorthorn Cattle

Valentine's Last X12316 452005 at head of beef herd. Claywood White 427350at head of milk type.

STATE INDUSTRIAL SCHOOL
Golden, Colorado

Chester Whites

Extra good bred sows for sale. Also growthy open gilts and spring boars. Choice weanling pigs.

NEBRASKA BREEDERS SALES CO.,
Box 13-C, Lincoln, Nebr.

DALY'S DUROCS

This herd won Junior and Reserve Champion Sow at the recent Stock Show. Also 1st and 4th on Junior Sow Pig; 2nd on young herd, 2nd on get of sire, 3rd on Junior Boar.

Write Us Your Wants.
DR. F. T. DALY, Cambridge, Nebr.

LA BELLE RANCH
Has for sale Choice Young Registered
Duroc Sows and Gilts
bred to a high class boar for early farrow. **Also Good Fall Pigs.**
H. G. SQUIBB, Aurora, Colo.

Closing Out Sale

At the Bowles Ranch

One Mile West of Littleton

Friday, March 12th

At 10:00 A. M. SHARP

30 --- Head of Horses --- 30

1 Span Steel Gray Geldings, 6 years, 3,200. 1 Span Bay Geldings, 6 years, 3,200. 1 Span Brown Geldings, 4 and 5 years, 3,200. 1 Span Brown Mares, 6 and 7 years, 3,000. 1 Span Black and Brown Geldings, 3,300. 1 Span Black Geldings, 4 years, 3,000. 1 Span Bay Mare and Bay Gelding, 5 years, 3,000. 1 Span Black Mares, 6 and 8 years, 2,600. 1 Span Black Mares, 9 years, 2,600. 1 Span Dapple Grey Mares, 7 years, 2,500. 1 Span Bay Geldings, 5 years, 2,500. 1 Gray Mare with Colt by Side, 1,500. 1 Combination Brown Gelding, 6 years, 1,300. 1 Gray Gelding, 3 years, exceptionally fine, broke all ways, 1,100. 5 2-year Mare Colts, heavy boned, good ones, 1,250

80 --- Head of Cows --- 80

30 Head Holstein Durham and Jersey Cows, Heavy Milkers and Springers.

50 Head Holstein Heifers, 1 Year to 18 Months Old.

One Registered Holstein Bull

FOUR HEAD OF PIGS

Farm Machinery We will sell everything from our Moline Tractor to the last trace chain. Everything will be closed out. Most of this machinery was bought in 1919.

TERMS OF SALE—CASH.

The Bowles Ranch Has Been Sold and This Is Absolutely a Clean-out.

FREE LUNCH AT NOON.

BURDEN & McKEE, Owners

COL. G. W. BANKS, Auctioneer
HENRY KRAFT and CLIFF MANN, Clerks.

Choice Offering of Bred Poland China Sows, Also Good Young Poland China and Duroc Jersey Boars

We are also pricing a two-year-old son of Sir Pieterje Johanna Mercedes.

Sir Pieterje Johanna Mercedes was by Sir Pieterje Ormsby Mercedes, the greatest sire of cows testing over 600 lbs., and was out of a 900-lb. cow. The young bull is from a cow with a 618 lb. record.

ANIMAL HUSBANDRY DEPARTMENT
COLORADO AGRICULTURAL COLLEGE,
FORT COLLINS, COLORADO

ANNOUNCEMENT

Registered Holsteins For Sale

We have decided to sell some of the daughters of **Prince Netherland Gerben Walker** instead of building more barn room to take care of our growing herd.

We Are Breeders, Not Dealers

And we bred and raised every one of these heifers. They are two and three-year-olds and very persistent milkers. These cows are bred to our senior sire SIR JOHANNA BESS SEGIS, whose dam is one of the great daughters of KING SEGIS PONTIAC COUNT and whose sire is PIEBE LAURA OLLIE HOMESTEAD KING. This is wonderful breeding and you must go a long ways and pay big money to get it in the east. Our prices on these heifers are $250 to $400. If you want to sell back to us any or all of the heifer calves, daughters of **Sir Johnna Bess Segis**, we will gladly buy them back from you at seven months of age, well grown and subject to U. S. test at $150 a head. This herd is under U. S. supervision and we are not allowed to sell out of it or buy into it any stock not tested by the government. They have tested our whole herd and found it clean.

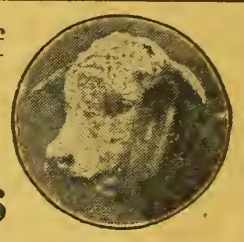
We shall be glad to tell or write you more about this stock, but if you are interested we believe it will pay you to come to the ranch as soon as possible and select what you want. We have never before offered any registred females for sale.

Loesch Brothers,

Pahgre Valley Ranch **Montrose, Colo.**

The Hereford Corporation of Wyoming

Box 876, Cheyenne, Wyoming



Registered Herefords

We Offer For Sale

3 Loads Coming 2-Year-Old Bulls
2 Loads Coming 2-Year-Old Heifers

And can also take care of any breeder who wants a few good bred heifers and cows.

Denver office

406 Live Stock Exchange Bldg.

RAYMOND S. HUSTED, Mgr.

DeWITT HEREFORDS

HERD BULL—MISCHIEVOUS JR., by THE HEIR

Is a full sister to BEAU MISCHIEF and is the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of
GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

L. G. Davis Herefords

ANXIETY BRED

For Sale—3 cars of registered Anxiety Bred Open Heifers in lots to suit purchaser. Can be seen at my Wynnewood ranch six miles from Denver.

WE HAVE A FEW HIGH CLASS YEARLING BULLS FOR SALE

L. G. DAVIS, Saratoga, Wyo.

Or Wellington Hotel, Denver

YOU SAW WHAT WE DID

At the National Western Stock Show. We can sell you Cows, Bulls and Heifers.
Let us know what you want.

STILL A FEW DUROCS FOR SALE.

A. M. McCLENAHAN, GREELEY, COLO.

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
JOHNSTOWN, COLO.

JAMES PONTIAC DEKOL ORMSBY

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.

C. F. Burke, Mgr. Pueblo, Colo.

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

BEAU ASTER

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER

Holyoke, Colo.

COL. H. C. JENNINGS

Pure-bred Livestock

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LA MARIPOSA

The Carr W. Pritchett Ranch,

Steamboat Springs, Routt Co., Colo.,

has for sale at this time 12 fine bulls from 9 to 20 months old. Sired by LOYAL STAMP. Priced right. Great-grandsons of Whitehall Sultan.

William Upp

Breeder of

BIG TYPE POLAND CHINA HOGS—HERD HEADED BY BIG JUMBO, Missouri Prince, Cotton Wood King, and others.

Spring Boars and Gilts for sale.

Deer Trail - - Colorado

Second Annual Joint Spring Sale

OF REGISTERED BREEDING CATTLE

HEREFORDS SHORTHORNS

Under the auspices of and consigned by members of

The Western Hereford Breeders' Association
The Western Shorthorn Breeders' Association

Stock Show Stadium, Denver Union Stock Yards, April 7, 8, and 9

HEREFORDS

Will Sell on

Wednesday, April 7th

80 Bulls 70 Females

Will be Offered by the following members of the

Western Hereford Breeders' Association.

Dr. T. F. DeWitt, Denver.
C. H. Gilbertson, Ft. Morgan.
Hereford Corp. of Wyoming.
Flowerland Cattle Co., Denver.
L. G. Davis, Denver.
Geo. W. Baker, Littleton.
H. Bert Cave, Littleton.
S. L. W. Ranch Co., Kersey.
Lester Beveradge, Arapahoe.
Fulscher & Kepler, Holyoke.
J. H. Dickens, Walden.
J. D. Canary, Denver.
A. J. Campion, Denver.
Jno. E. Painter, Roggen.

The Western Hereford Breeders' Association,

President
DR. T. F. DeWITT,
1550 Ogden St., Denver, Colo.

Secretary
JOHN E. PAINTER,
Roggen, Colo.

SHORTHORNS

Will Sell on

Thursday, April 8th

40 Bulls 20 Females

Will be Offered by members of the

Western Shorthorn Breeders' Association.

This association is refusing to accept for this sale any animal of inferior quality and the offering therefore presents an aggregation of high-class individuals as well as the best of breeding.

The Western Shorthorn Breeders' Association,

President
A. G. CORNFORTH,
Elbert, Colo.

Secretary
RUSSELL WARNOCK,
Loveland, Colo.

These cattle come from the best breeding herds in the west. They not only have the best of blood lines, but they are excellent individuals. They are in good breeding condition, and ready for immediate service. Remember the dates, and place.

Stock Show Stadium, Denver Union Stock Yards, April 7, 8 and 9, 1920

For Catalogs apply to R. R. Boyce, Sale Secretary, Denver Union Stock Yards, Denver, Colo.

D. Warnock & Sons
Loveland, Colo.

Jay & Allan
Boulder, Colo.

SELL AN ATTRACTIVE OFFERING OF

REGISTERED

50 Shorthorn Cattle 50

Best Fashionable and Practical Scotch Breeding

At Stock Show Pavilion, Denver

FRIDAY, APRIL 9th, 1920

1 Bull

49 Females

Imp. Advocate's Model

ONLY ONE BULL—an outstanding roan son of Advocate's Model and from a daughter of Diamond Goods. A real herd heading proposition.

Several Cows with Calves at Side
Other Cows Heavy in Calf
Some Excellent Open Heifers

A REAL opportunity to buy foundation females for a good Scotch herd of Shorthorns.

Watch for our ad in the next issue.

Get on our mailing list—write for catalog, and mention Western Farm Life.

JAY & ALLAN
Boulder, Colo.

D. WARNOCK & SONS
Loveland, Colo.

S L W

HARDY HEREFORDS

Stand the Test. Do Well Anywhere.

At the Denver Sale, April 7th, we will sell ten head of select, hardy young bulls, seven sired by WILBUR MISCHIEF, one by PRINCE RUPERT 35th, one by BEAU BALTIMORE 6th. All richly bred.

Several Outstanding Herd Bull Prospects.

The S. L. W. Ranch Co.

H. E. WITWER, Pres. J. A. MILHAM, Herdsman

Postoffice Kersey, Colo.
Phone Greeley, Colo.

Western Holstein Farm

HALL BROS., Props.

Breeders of the correct thing in Holsteins. Colantha-Johanna-Ormsby Families. Pedigrees full of great show-ring winnings and world's record milk and butter production. Send for circular.

BULL CALVES $200-$500 EACH

Address Box 2, South Denver Station, Denver, Colo., or visit the Farm, 6½ miles southwest of Denver on the Morrison Road.

Edbrooke Durocs

REGISTERED

Big Type Duroc Jersey Hogs

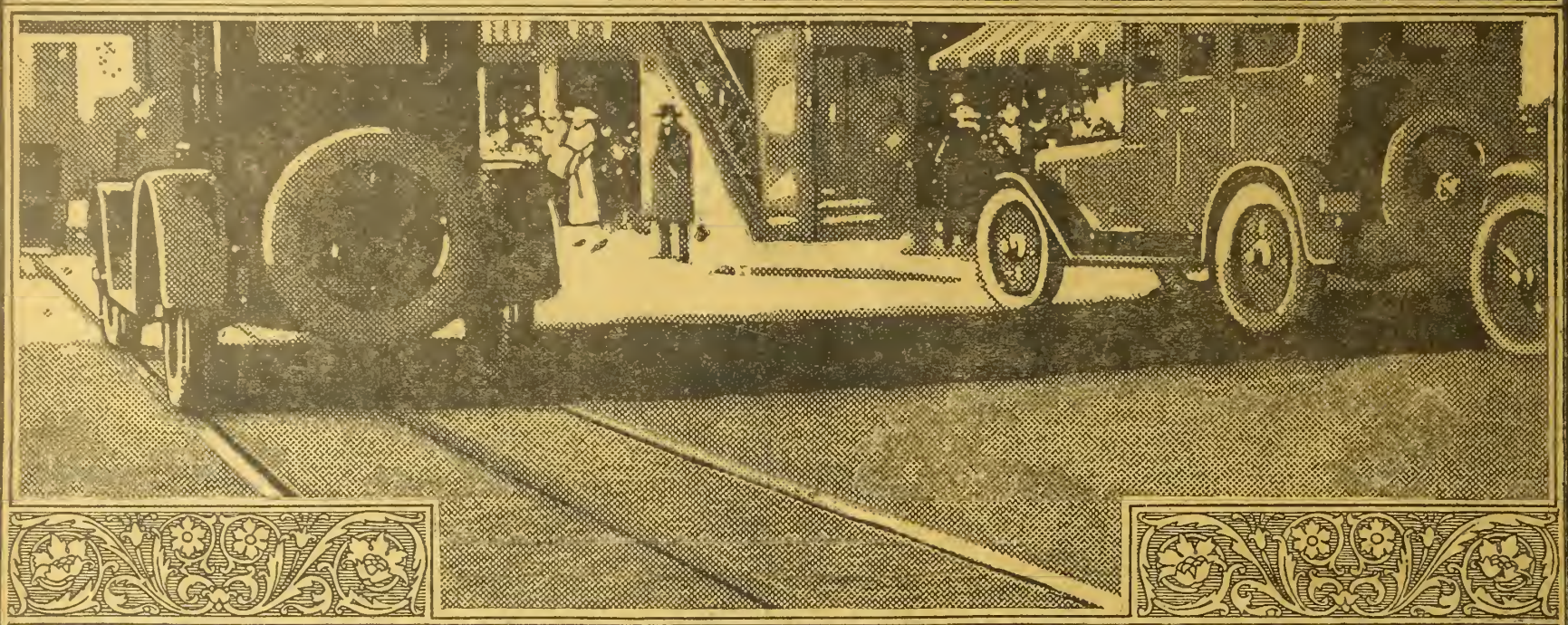
Defender Boars *Defender Sows*

DENVER SHOW, 1920 I WON
First Prize Junior Yearling Sow
Second Prize Senior Yearling Sow
The Only Classes Shown

GREEN ACRE FARM

Defender Breeding H. W. J. Edbrooke, Prop. 6th & Wadsworth, Denver

Go to a Legitimate Dealer and Get a Legitimate Tire



THIS year the American people will spend more than $900,000,000 for automobile tires.

Tires are one of the largest items in the motorist's budget.

The cost is making even careless buyers think and inquire.

And the more they inquire, the smaller will grow the influence of hearsay and the irresponsible tire dealer.

* * *

We have all met the man who takes his opinions readymade.

He tells everything he knows. He knows more about every car than the man who made it, where to buy the cheapest truck—how to get the biggest bargain in tires.

He always arouses a certain amount of wonder in the unknowing. They never think to ask him where he gets his secrets.

* * *

"Somebody says" and "everybody does" are responsible for more wrong impressions about tires than anything else you can think of.

It is on the people who come under the influences of these phrases that the irresponsible dealer thrives.

You generally find him with the name of a standard tire displayed in his windows to give an impression of quality.

But when you get inside the first thing he begins to talk about is price and substitution.

Every time you drive your car along a track or a rut in a country road you are taking some life out of your tires.

Worn frogs and switches often cause small cuts, which are rapidly enlarged by the action of gravel and moisture. Ruts and track slots pinch the tire, wearing away the tread where their edges strike it.

It is well to avoid such places as much as possible.

What the thoughtful motorist is looking for today is *better* tires.

He goes to a legitimate dealer and gets a legitimate tire.

The *quality* idea—the idea of a quality tire, of a dealer who believes in quality—is commanding a greater respect from a larger portion of the motoring public all the time.

It is the idea on which the United States Rubber Company was founded—on which it has staked a greater investment than any other rubber organization in the world.

Build a *tire* that will *do more, a better tire than was built before,* and you are sure of a large and loyal following.

We have never been able to build enough U. S. Tires to go around.

United States Tires

United States Rubber Company

Fifty-three Factories — The oldest and largest Rubber Organization in the World — Two hundred and thirty-five Branches

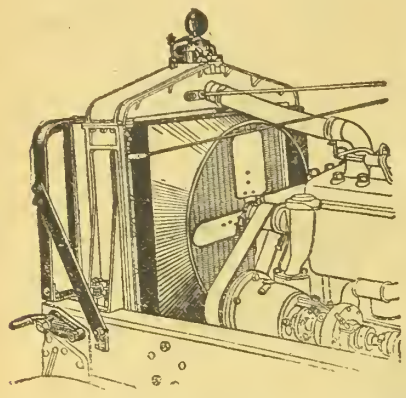
4.03
IN

WESTERN Farm Life

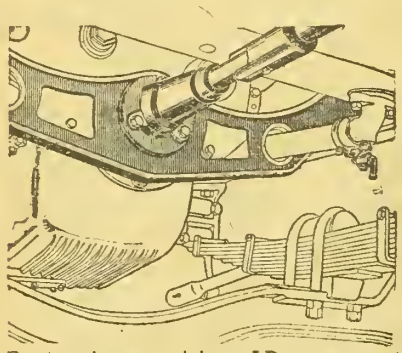
Vol. XXII. *Denver, Colorado, March 15, 1920.* *Semi-Monthly*

A GOOD SILO IS A SAVINGS BANK FOR EVERY LIVESTOCK FARMER.

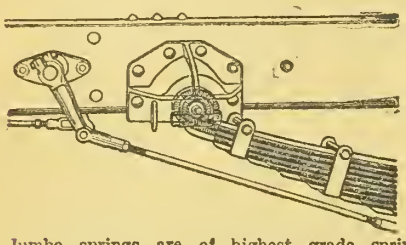
JUMBO
The Complete Truck



The Jumbo radiator fan shroud insures uniform cooling of entire radiator because air is drawn through fins in even volume. Also note Motometer, radiator guard and pig-tail tow hooks—all standard equipment.



Front engine support is an I-Beam so mounted that it may be removed, with the motor. Engine rocks in large pilot bearing in this support. The radiator drain cock is at lowest point of circulatory system. Every bit of water can be drained.



Jumbo springs are of highest grade spring steel and are 6 to 10 inches longer than customarily used on trucks of similar capacity. Second leaf is wrapped full around driving eye for safety.

A Word to the Truck-wise is Sufficient

Reliable performance of Jumbo Trucks means a saving of money on the farm. You can count on a Jumbo ---always---in everyday service or in emergencies because it has power---and power to spare.

Equipped with a 32.4 h. p. Buda Motor, the Jumbo power plant is sufficiently oversize to avoid being called upon for more than 85 per cent of its capacity. Straight line drive under load and Clark Internal Gear Drive Axle insure maximum efficiency at point of drive. Jumbo Trucks are particularly adapted to trailers.

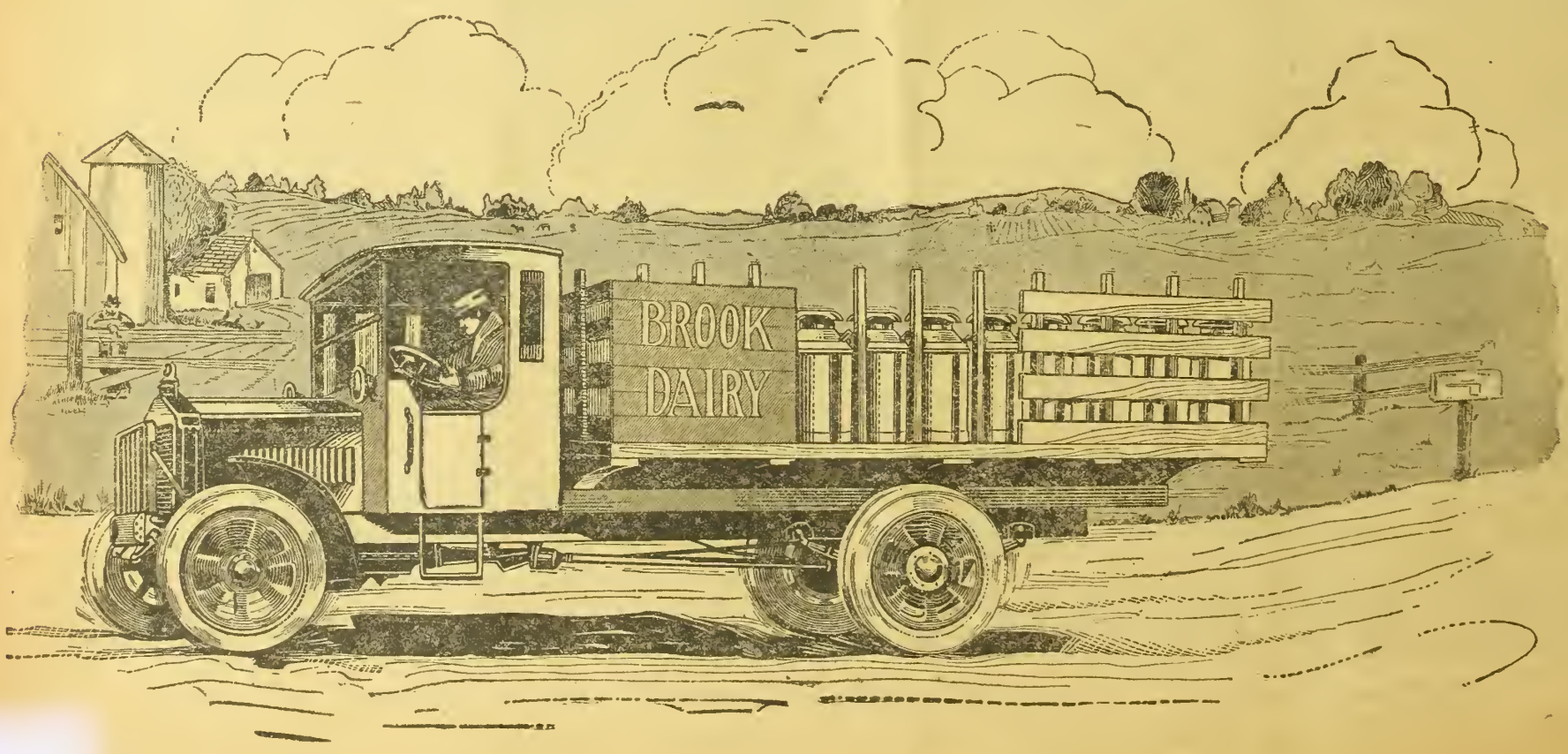
The more you know about motor trucks in general, the easier you can see why there are no dissatisfied Jumbo users. Jumbo Trucks are stronger trucks---stronger trucks are better trucks---better trucks give longer, more dependable service at lower upkeep cost.

A Jumbo Truck comes to you completely equipped. There are no extras to buy except the body. A word to the truck-wise is sufficient ---and that word is Jumbo---the **complete** truck.

Ask your distributor to show you how the Jumbo saves time, labor and money on the farm

Independent Tractor & Farm Machinery Co.,
Denver, Colorado.
Distributors.

NELSON MOTOR TRUCK COMPANY, Saginaw, Michigan
Also makers of the famous Jumbo Farm Engine



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Largest Circulation of Any Farm Magazine in the West

WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Published Semi-Monthly by The Farm Life Publishing Co., Denver, Colo. 1518 Court Place.

Entered at the Denver Postoffice as Second Class Matter

VOLUME XXII. DENVER, COLORADO, MARCH 15, 1920. Number 6.

Silage Doubles Production of Beef Per Acre

HEAVY SILAGE RATION LOWERS COST OF GAINS 20 TO 50 PER CENT.

E. W. CURTIS.

THE experiment stations of four of our leading stock raising states have recently published bulletins concerning the feeding of silage in large and small rations to steers. One station compared cane with corn silage as a ration for calves. The experiment stations of our country have for thirty or thirty-five years been using silos. These early structures, however, were crude and hardly fitted for preserving fodder. They were, as a rule, square boxes built in the corner of the barn and either made of stone or boulders. They ranged from fifteen to twenty feet square and very little higher. The silage spoiled in the corners and naturally they were unsatisfactory. These old silos, however, have long disappeared and now modern silos are in use, made of either tile, cement or wood. They are round and narrow in diameter but lofty in height, running from thirty to forty feet.

Up till about four or five years ago the stations that were studying silage rations compared this ration with a shelled corn, oil meal or cotton seed meal and hay ration, but in the last year or two the experiment stations, almost without exception, are comparing a ration somewhat as follows: Say 16 pounds of shelled corn or ground corn, 2 to 3 pounds of cotton seed or oil meal, 25 pounds of silage and say 1 pound of alfalfa or clover hay. This, as a rule, has been compared with, say, 50 pounds of silage, 2 to 3 pounds of cotton seed or oil meal, and a pound of alfalfa or clover hay. In other words, instead of comparing a silage with a non-silage ration, they have concluded, almost without exception, that silage was the great cheapener of costs and they are comparing a half silage ration with a full silage ration rather than a comparison between a full silage ration and a non-silage ration.

It is interesting to note that the experiment stations have nearly ceased working on silage as a dairy ration, for they have long ago established this fact and have shown its economy as a milk and butterfat producer. They are, therefore, turning their attention mostly to the amount of silage to use in the beef ration.

Later on in this article we will give the actual figures from the four experiment stations above mentioned. It is outstanding, though, in these various experiments, that the gains per day have been approximately the same for the combined corn and silage ration and the heavy silage ration lots. Some of the stations show better gains per day in the corn and silage lots. In average cases, however, the cost of manufacturing a hundred pounds of meat was from 20 to 50 per cent lower when the heavy silage ration was used. It is admitted that when the cattle were fed the heavy silage ration the flesh was not quite as hard, and, as a rule, the buyer valued them at 25 to 50 cents per hundred pounds less. But in spite of this handicap, a heavy increase in profit was made with the heavy silage fed lot.

In the following tables attention is being paid to silage experiments which pertain directly to silage, comparing same with steers fed a small amount of silage with shelled or ground corn.

Wisconsin.

Ten two-year-old steers to each lot. Average weight per steer, 920 pounds. Length of feeding, 112 days.

	Lot 1 (Pounds)	Lot 2 (Pounds)
Average final weight per steer	1188.7	1179.5
Average daily gain per steer	2.4	2.33
Average daily ration:		
Shelled corn	12.4	.....
Cotton seed meal	2.7	3.5
Corn silage	32.8	56.4
Mixed hay	2.2	2.6
Cost of average daily ration	$ .54	$ .37
Feed required per 100 pounds of gain:		
Shelled corn	514.7	.....
Cotton seed meal	113.8	152.2
Corn silage	1364.2	2422.0
Mixed hay	90.3	11.9
Cost of 100 pounds gain.	$22.64	$16.03
Profit per steer, not counting hogs	8.44	20.35
Profit per steer, counting hogs	19.86	25.33

Cost of feed:

Shelled corn	$ 1.33 per bu.
Cotton seed meal	65.00 per ton
Corn silage	8.00 per ton
Mixed hay	25.00 per ton

Now step across and see how they came out in Missouri.

Missouri.

Eight head per lot.

	Lot 1 (Pounds)	Lot 2 (Pounds)
Average initial weight	836.12	820.95
Average weight at end of 83 days	1114.66	1021.00
Average daily gain	3.35	2.39
Average daily ration:		
Shelled corn	15.29	.....
Linseed oil cake	2.55	3.67
Corn silage	25.23	40.33
Clover hay	2.88	4.84
Cost of feed per steer.	$ 50.23	$ 21.17
Cost per 100 pounds of gain	15.95	10.69

Iowa.

Standard corn belt ration vs. "no grain" ration. Two-year-old steers fed from December 22, 1918, to May 26, 1919—120 days. Five steers to the lot:

	Lot 1 (Pounds)	Lot 2 (Pounds)
Final weight	1360.1	1335.2
Average daily gain	2.98	2.74
Average daily feed:		
Shelled corn	15.0	.....
Linseed oil meal	3.0	3.0
Corn silage	27.4	52.0
Alfalfa hay	.9	1.5
Block salt	.03	.03
Feed required to make 100 pounds of gain:		
Shelled corn	504.7	.....
Linseed oil meal	100.8	109.6
Corn silage	819.8	1899.1
Alfalfa hay	31.6	56.0
Block salt	.88	.93
Cost of gain	$ 22.60	$ 16.08
Profit per steer	15.83	23.11

Cost of feed

Shelled corn	$ 1.45 per bu.
Linseed oil meal	70.00 per ton
Corn silage	12.00 per ton
Alfalfa hay	30.00 per ton
Block salt	20.00 per ton

It is interesting to note in the above experiment that the farmer who can sell his corn crop in the form of silage to his steers at $12 per ton (counting the average yield for Iowa as ten ton to the acre) will make a good big profit, even though he comes out even in the operation of feeding his steers. In the above experiment it shows that the Iowa farmer can sell his crop to his steers at $120 per acre and that he can still make a profit on the steers of from $23.11, not including the hogs, up to $27.32, if the hogs are counted.

Kansas.

Two-year-old steers fed for a period of 110 days, in lots of ten each:

	Lot 1 (Pounds)	Lot 2 (Pounds)
Average daily ration:		
Ground corn	15.31	.....
Alfalfa hay	13	2.95
Linseed oil meal	2.72	2.69
Sorghum silage	.....	60.55
Initial weight per steer	944.92	963.10
Final weight per steer.	1309.44	1296.67
Average total gain per steer	364.52	333.57
Average daily gain per steer	3.31	3.03
Feed required to make 100 pounds of gain:		
Ground corn	462.04	.....
Linseed oil meal	81.96	88.66
Alfalfa hay	392.32	97.43
Sorghum silage	.....	1996.81
Feed cost per 100 pounds gain	$ 21.48	$ 12.31

Concerning Sorghum Silage.

Dr. C. W. Campbell, head of the Animal Husbandry Department at the Kansas Experiment Station, points out "that a comparison between the results obtained in lots one and four show that 1996.81 pounds of silage fed in lot four replaces 469.6 pounds of corn fed in lot one. In other words, a ton of sorghum silage replaces 8½ bushels of corn." He also mentions that the yield of corn on the college farm, owing to the extreme dry weather of last summer, was only about 3½ tons per acre, but that the yield of sorghum silage was approximately 9 tons to the acre.

It is well to digress for a moment and note that at the same time the Kansas station was feeding the above two-year-old steers they were feeding calves also. They show that the calves made a gain of 321 pounds each in 110 days. The steers made a gain of 354 pounds in the same period; the daily gain per calf being 2.92 pounds, and per steer 3.22 pounds. In other words, they point out that, considering weights and cost, better gains can be made with the calves than can be made with two-year-old steers.

The above experiments are carried through on a straight profit and loss basis, careful watch being taken at all times that every part of feed that went to the steers was properly charged to them at the prices prevailing in that state at that time. These prices, of course, will vary in different states and in different localities in the same state.

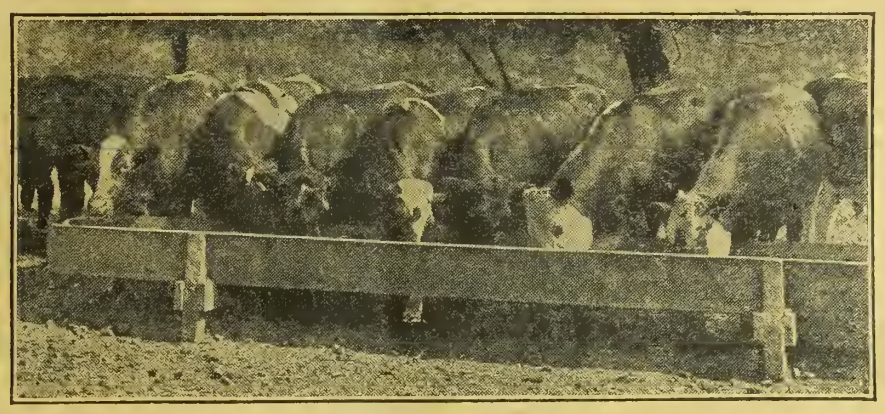
Figures on Acre Basis.

There is another angle to this: How many pounds of beef were produced per acre? We have an idea that the average farmer is more interested in these figures than any other, and none of the experiment stations have taken the pains to reduce their figures to a "per acre" basis. It is rather hard for a layman to do this, but it seems to me fair to take the broad proposition that a field of corn that produces 40 bushels of ears will produce ten tons of silage. Of course. these figures will vary with different localities and different years, but taking one year with another the above estimate is probably fair. I know of many farmers who have secured twelve to fifteen tons or even more silage per acre. In fact, some of the experiment stations themselves reported the yield as high as 20 to 22 tons per acre. But, assuming, as above stated, that the yield of silage be ten tons to the acre, then the following figures can be worked out:

	Corn Lot.	Silge Lot
Wisconsin produced per acre of land	230 lbs.	499 lbs.
Missouri produced per acre of land	376 lbs.	651 lbs.
Iowa produced per acre of land	256 lbs.	746 lbs.
Kansas produced per acre of land	294 lbs.	648 lbs.

The above figures mean, in composite, that the cattle that were fed corn—in fact, what is commonly called the "corn belt" ration—show that the production of beef per acre of land is 290 pounds. A composite or average of the silage fed lots for the four states will show a production of 637 pounds of beef per acre. In other words, viewing the matter from a "per acre" basis, which we have an idea is the way the average cattle fattener would prefer to view it, by the use of a heavy silage ration the four experiment stations mentioned above have been able to produce over twice as many pounds of beef per acre of land. These figures mean that on the average farm that will grow corn, cane or kafir corn, that it is possible to double the production of beef per acre of land by the intensive use of silage, according to the figures that prevail at the present time. In other words, they are not taken from experiment station records of some years ago, but they are taken from experiment station records for 1919.

The experiment stations have done a wonderful work and deserve the greatest commendation for the clear manner in which they have presented the various feeding problems. After all, they have recognized that they are the servants of the public and that they are doing a work laid out for them to do. That is, they are doing a class of experimental work that the average farmer would not be able to undertake, and they are doing it in a careful, scientific and authoritative manner.



Cleaning Up the Silage in Beef Making.

Silage For All Stock.

The silo was first taken up by the dairymen, and today we find most of the silos in the dairy sections. You can pretty nearly tell the number of cows and the progressive dairymen by the number of silos a community possesses. It is a mistake, however, to conclude that silage is not equally good for other classes of livestock; and this truth is so well known by most keepers of silos that they fail to even comment on the subject.

As silage is our cheapest source of digestible carbohydrates, it can be used profitably by any animal which feeds upon grass. The breeders of beef cattle have for many years used the silo with success, not only for feeding their mature animals, but also for growing the young stock. There has been more investigation among our experiment stations to determine the economic value of silage as a beef maker than in any other line of feeding work. Hardly an experiment station equipped with a silo but what has made some test along this line, and it is interesting to note that practically every test has demonstrated that silage not only makes beef cheaper than other foods, but also makes a high quality of beef. Most of the breeders of champion show stock are using silos, and they would certainly laugh at any man who questioned their silage ration.

Horses and mules have been fed silage successfully and economically. The

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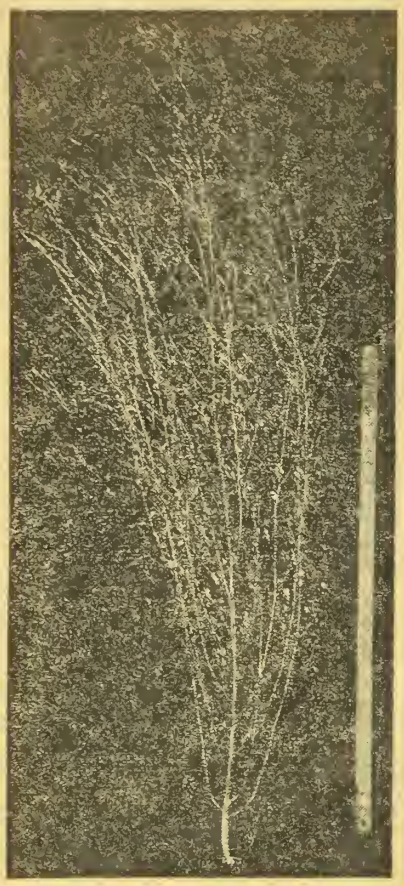
Iowa Station Develops Annual White Sweet Clover

PLANT GIVEN WORLD WIDE TEST NOW READY FOR FARMERS.



Typical plant of the new annual sweet clover. Grew to a height of 4 feet 10 inches in four months.

A NEW clover, not previously known to exist, was discovered at the Iowa Agricultural Experiment Station in March, 1916. It is an annual white sweet clover. In the first field trials at Ames is grew to a height of 4½ feet in 3½ months' time. Believing that the new clover would prove to be of considerable agricultural value, its development was pushed as rapidly as possible by planting in the greenhouses in the winter with honey bees present to secure the setting of seed, and in the field in the summer. In the spring of 1918, two years after its discovery, small amounts of seed were sent to each of the state agricultural experiment stations and to the seedsmen of the United States and Canada.

Reports coming to the Iowa station in the fall of 1918 told of wonderful growths of clover 5, 6, 7 and even 8 feet in height, secured in only four or five months from planting. The clover showed a wide adaptation, as these reports came not only from such corn belt states as Illinois, Ohio and Iowa, but also from such widely different points as Georgia and Oregon, Maryland and Idaho, Maine and Mississippi, Canada and England.

A well known plant breeder of one of the corn belt experiment stations in speaking of this clover, said:

"If under average conditions this clover makes anything like the growth it has made in trials conducted with it throughout the country, it will replace all of the common clovers just as soon as a sufficient amount of seed is available."

W. H. Stevenson, professor of farm crops and soils at Iowa State College, says: "It is possible that the annual white sweet clover will revolutionize the rotation system of the corn belt The problem of getting organic matter and nitrogen back into the soil cheaply is the most serious fertility problem with which we have to contend. Annual white sweet clover promises to fulfill a long felt need."

The reports from the second year's trials are all in now and the Iowa station knows pretty definitely what this clover will do under a great variety of conditions. Its estimate of the probable future of the plant is not based on its own trials alone, but also on trials made by experiment stations, seed companies, and farmers, in all parts of the country. Having this information the station is ready to give a few seed to any farmer who will send a stamped envelope to carry the seed to him.

History of Discovery.

During the years 1910 and 1916 many samples of sweet clover seed were secured by the farm crops section of the Iowa Agricultural Experiment Station, from all parts of the world. In January, 1916, some 500 different lots of these seed were planted in the college greenhouses. Three plantings were made with each lot of seed: One on rich black loam, one on a gravelly sand, and one on a pure clay.

It was about the first of March, when plans were made to tear these plantings out to make room for other work, that H. D. Hughes, in charge of the farm crops work, observed that a number of plants, all produced from one lot of seed, had made a much greater growth in each of the three seedings than the others, with indications that they might soon bloom.

The seed which had produced these plants was supposed to be the common biennial white variety and nearly all of the plants of this seeding were of this kind. The occasional exceptional plants resembled in every way the common biennial variety except that they grew much more rapidly.

In order to determine whether these few plants differed in any material respect from the common sweet clover the seedlings were allowed to remain and by the middle of March the exceptional plants had grown to a height of from 3 to 4½ feet, and most of them were in full bloom. At the same time the common biennial sweet clover grew to a height of less than 1 foot.

While no insects were available to assist in the setting of seed, a number of seed were produced without this aid. Some work was done in artificially tripping the flowers, by this means securing the production of additional seed.

When the plants were mature they were pulled and the root growth found to be large and vigorous, but entirely different from that of the biennial sweet clovers. The biennials have a large, succulent tap root at the end of the first season's growth, much like that of a parsnip, and at the top of the root, about an inch below the surface of the ground, a crown with anywhere from 5 to 50 buds ready to burst forth at the first sign of spring. But the root of the new clover was entirely different. Although large and vigorous, there was no life-giving succulence and no crown nor buds to begin life anew the next spring. The plant had made its full growth, bloomed, ripened its seed and died—tops, roots and all clearly establishing the fact that this clover was an annual.

Reported to the Department.

In May, 1916, Mr. Hughes wrote to H. S. Coe, then in charge of sweet clover investigations for the United States Department of Agriculture, as follows:

"You will be interested in an annual white flowered sweet clover with which we are working. We have at least two strains of this clover which are quite distinct. One grows to be a half again as high, or perhaps twice as high, as the annual yellow, while another strain grows considerably higher, making a very rapid upward shoot and producing many blossoms and seed. It seems to be quite generally self-fertilized, in this way resembling the annual yellow. An annual clover of this sort, which would make a large growth and which could be depended upon, would be quite valuable for use when the biennial clovers failed to make a stand. I have never heard of any annual white clover before. Have you?"

Mr. Coe replied under date of May 17: "I have never heard of a white annual species, although I have not checked up the literature on the numerous species which are found in Europe and which gain access to this country through imported seed. We have had plants bloom in Montana the year seed was planted, but this was when they were planted without nurse crop and when conditions were excellent for a rapid growth. If, after looking over our literature, I find any annual white sweet clover, I shall let you know."

Mr. Coe visited the Iowa Experiment Station in June and examined the plants which had been grown in greenhouses there. As complete an investigation as possible was made to determine whether or not an annual white flowering Melilotus might previously have been found and described. Apparently no such clover had been known anywhere.

At a later date Mr. Coe himself found some plants of the annual white sweet clover and in an article which appeared in the Journal of the American Society of Agronomy suggested that the botanical name of this clover should be Melilotus Alba Annua. Unfortunately, he failed to mention the fact that this clover had first come to his attention at the Iowa station.

Sufficient seed was secured from 22 of the plants to seed a row of each in the field. These seedings were made about the middle of June, planting thinly with oats as a nurse crop. Other seedings were made at the same time and under exactly the same conditions with the common biennial white sweet clover, the biennial yellow, the annual yellow and the common medium red clover.

A good stand of both the oats and the clovers was secured. The nurse crop was cut and removed when in the milk stage without injury to the clovers. At this time the annual clover plants were possibly 6 inches in height and most of the other clovers nearly as high. Following the removal of the oats the annual white sweet clover grew very rapidly.

The 22 plants from which seed had been secured in the greenhouse had shown considerable variation in height, habit of growth and date of maturity, and these same variations were noted in the field. However, the plants in each row, planted with seed from different parents, were unusually uniform. This uniformity was probably due to the fact that very little, if any, cross fertilization had occurred, as the plants came into bloom in the greenhouse, where there were few, if any, insects which might carry pollen from one plant to another. From seed produced under ordinary field conditions considerable variation might be expected, as insects would carry pollen from the flowers of one strain to those of another.

Some of the strains were in full bloom 2½ months from the date of seeding, while at the end of 3½ months they had ceased to bloom and had matured their seed. Other strains, however, did not come into full bloom until about 3½ months from seeding and others were still later. In general, the largest, rankest growing types were the latest maturing, though this was not always the case.

This variation in maturity and growth is considered an advantage in adopting the plant to the great variations in climate and soil found in different parts of the world. In order that the wide usefulness of the plant might not be limited by selection for Iowa conditions alone, a wide distribution of the seed was determined upon to begin at the earliest possible date.

— Distribution of Seed.

The first distribution of seed was made in the spring of 1918, two years after the first plants were found. A very small amount of seed, 100 or less, was sent to each of the state agricultural experiment stations and to seed dealers and growers throughout the country, together with a statement of the growth which it had made in preliminary trials at the Iowa Agricultural Experiment Station, both in the greenhouses and in the field, where it had been grown in comparison with other clovers.

A few of the reports made at experiment stations follow:

Oregon Experiment Station, 1918: "A number of plants reached the height of 5 feet and remained in bloom until rather late in the season. Believe it is a splendid thing from standpoint of soil improvement and that it offers considerable promise for hay. Its long, late blooming period is also very desirable from standpoint of bee pasture."

L. R. Breithaupt, Payette, Idaho, 1918: "Sweet clover seed (this was the annual sweet clover) was mostly mature. The clover grew to an extreme height of about 8 feet and seemed more vigorous than the biennial after it got rooted; a great seeder here."

A. C. Pickett, Riverside, Calif., 1919: "I made two plantings of it. First lot sown November, 1918. First seed ripened August, 1919. Second lot sown March, 1919; first seed ripened September, 1919. Seed has been maturing continuously since the first ripened. I note a considerable difference in the plants. Some have rather a thick bushy growth; others have a more open and sparse-leaved habit, less desirable for green manuring, as the tonnage would appear to be considerably less. I should say that the plants grew about 5 feet high."

Oregon Experiment Station, 1919: "The annual white sweet clover did not die out during the winter last year and it behaved to some extent like a biennial. I do not know whether this winter's experience will make us decide that it is a perennial under western Oregon conditions or not."

Viggo Lund, who was a graduate student at Ames when the new clover was being developed, took a small quantity of the seed with him to Denmark. In speaking of this clover, he said:

"The annual white sweet clover was seeded the last of May and before frost grew to a height of from 5 to 6 feet, maturing some seed. I believe we shall be able to use this clover in Denmark to a very great advantage, seeding with small grain in the spring and allowing it to grow after the small grain is removed."

Tests made in England will also be of interest.

G. K. Downer, Drayton Manor, Chichester, England, 1919: "I sowed the annual white sweet clover on June 30, 1918, but it did not come into bloom that year. Plants grew to a height of about 3 feet. It lived through the winter and seeded this summer. It grew about 5 feet high. I think it is a good thing to grow and plow under as a green manure the same season as sown."

A sample of seed was sent to the Hawaii Agricultural Experiment Station at Honolulu. In the Hawaiian Islands the climatic conditions are just the opposite from in Denmark and England. Mr. J. M. Westgate, agronomist in charge of the Experiment Station at Honolulu, makes the following report:

"The clover was first planted on May 1, 1918, at our forage crop station located in a comparatively dry region. The plants indicated vigorous growth in spite of the drouth conditions which preveailed during the growing period. They tended to be very spreading, and very heavy seed producers. Seeds gathered gave a 95 percent germination test. Floral parts first appeared . 62 days after planting and full bloom 15 days later. The maximum height attained by several individual plants was 7 feet 6 inches, and the average height was 5 feet. The second planting was made at our main station from seeds of the above planting, drilled in rows 4 feet apart. The plants attained a uniform height of 4½ feet and bloomed profusely for seven weeks. The honey bees worked overtime."

One of the most interesting tests made thus far with the annual white sweet clover was at the Iowa Agricultural Experiment Station in 1919, when the clover was sown with Iowa 103 oats. The oats were drilled in at the rate of three bushels per acre and biennial sweet clover was seeded at the rate of 15 pounds per acre with a small amount of seed of the annual white sweet clover scattered in also. An excellent stand of clover was secured. When the oats were in the milk stage they were cut with a mower for hay, clipping the clover plants off close to the ground. Following the removal of the oats the clover grew vigorously. The biennial white sweet clover which made a very thick stand grew to a height of about 18 inches, while the annual white sweet clover plants grew to a height of from 3 to 4½ feet, and came into bloom but did not set seed. Similar reports regarding the growth of this clover when seeded in with small grain have come from different parts of the country.

In Kansas the clover was seeded in the spring on winter wheat and while the wheat made a very rank growth, so that the clover was only able to maintain itself, after the wheat was removed it made a growth of from 3½ to 4½ feet and matured seed.

All the reports received regarding the growth of this clover were not so favorable as those which have been presented. For example, one report came from Wisconsin to the effect that the clover made a growth of less than 12 inches in the entire summer. Similar reports come from Alabama, Nebraska, Kentucky and Kansas. The fact that other reports have been received from these same states showing that under favorable conditions the growth has been from 4 to 8 feet indicates that the

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Root Penetration Shows Why Deep Plowing Pays

ROOTS FOLLOW THE PLOWSHARE FOR MOISTURE AND PLANT FOOD.

DR. V. T. COOKE.

HERE is a picture of wheat roots which penetrated the soil to a depth of six feet. What enabled the plant to go to that depth in search of food and moisture and what was the condition of the soil that allowed it?

A tight sub-soil will not absorb water as easily as that which is more or less opened. And a very considerable portion of the sub-surface and sub-soils of the semi-arid states is very compact, due to the trampling of animals, wild and tame, for many years, and the sparse vegetation which does not put very much organic matter into the soil. Heavy soils deficient in organic matter or humus naturally become very dense and compacted.

Let us first explain that this picture shows the root development of some Turkey red winter wheat grown on a dry land farm near Burns, Wyo., on deep plowing. The photograph was made to a scale of one inch per foot. It shows how wheat roots will go downward after moisture. In shallow plowed land the root spread is lateral instead of horizontal, and anyone knows what that means in case timely showers fail; the plants will dry out.

Agriculture is very old and in spite of what the agriculturists of the United States have done for the advancement of it, there is much that we can learn from those who through necessity have had to utilize their land to the best advantage. Men write and talk for and against deep plowing, seemingly proving by experiments and practical demonstrations that each is right and the other is wrong. Who is right? There is a lot of talk of "scientific farming" which should be translated most of the time by the farmer as using his "common sense." Unless there is serious thinking as to why this and that is done our work is often a failure through overlooking an apparent minor detail. Shall we or shall we not plow deep, that is the question.

No one believes that after all the years of experience the European agriculturist plows deep for the fun of the thing. He has learned that by deep plowing it helps to drain excessive moisture from the top soil, causing it to percolate down, forming a reservoir of accumulated moisture for the roots of future crops. Through this drainage the soil warms up much sooner, giving the crops an earlier start.

If the top soil is saturated with excessive moisture, which sometimes occurs when we plow shallow, it keeps the soil cold and so delays germination of the seed.

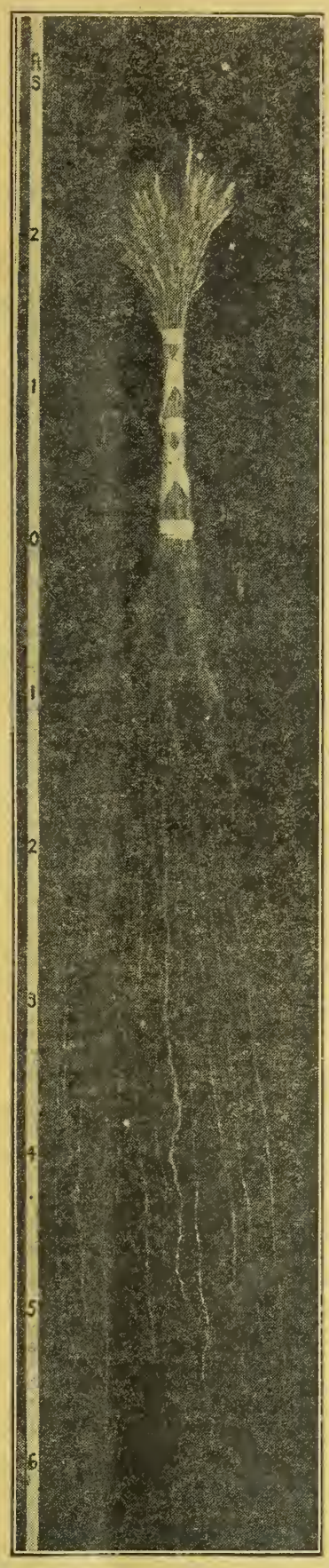
Anyone who knows anything about gardening knows that the successful gardener spades his soil to the limit of his spade. Why? To enable his soil to receive and hold more moisture than it could or would if he spaded it shallow, also to make the latent fertility available when soil is moist. Results prove the wisdom of the gardener's practice.

There is no question (although the point is questioned), as to whether deeply plowed soil will or will not absorb more moisture than shallow plowed land will, or shallow plowed more than some native virgin sod. Any careful observer can see the marked difference of how water acts when a torrential rain comes. On such lands, long after the water has disappeared on the deep plowing through absorption, some water can be noticed here and there on the shallow plowed land and considerable (according to amount of rain that has just fallen) on the sod. Why? Because shallow plowed land is usually only open to the depth of the plow (depending upon certain conditions), and is not in a condition to absorb and retain as much water as that which is plowed to a greater depth.

We must not forget that all soils are not alike. Their texture is not the same; also remember that climatic conditions vary in different sections. What rule applies to one section does not necessarily apply to another. Deep plowing can be made the means of failure if we overlook certain fundamental things that go with it to make successful the raising of crops. Success or failure depends on when it is done and what we do before we plow, and what after.

Anyone who thoroughly knows (as far as our present knowledge of it goes) how to farm with the natural precipitation, can take two adjoining pieces of land, plow one deeply and the other not so deep, and can make a failure if he wants to of that which is plowed the deepest. A piece of machinery fully equipped will run properly, but by taking out a portion it may still run, but it will not give the maximum results. So with deep plowing; if all the necessary details attendant upon it are not done it will not give maximum results and it is often condemned when it is not the fault of the work done, but of those doing it.

Take soil that originally was what is commonly termed a sandy loam which has been farmed for some time, has raised some intertilled crops for several years; or some light soil that never did produce much, and plow the same 12 inches deep and perhaps sub-soil some of it, run a light harrow over it, sow by hand, or with a drill without press wheels; how can one expect to raise a crop under these circumstances unless one has an exceptionally wet season to compact the soil and reduce the air spaces and prevent rapid drying out? Drying out will happen with greater rapidity than many of us realize, especially if the surface soil turned over is more or less in lumps or chunks, due to condition when plowing. It is easy to make a failure of anything if you want to; on the other hand, proper consideration given to details makes for success in any practice. It is useless to plow deep and let it go at that. Plowing deep necessitates doing certain things so as to not lose the effects of our work, such as disking thoroughly before plowing, which cuts up any vegetation or straw or manure that is on the surface and mixes these with the soil. This mixture falling in the furrow, will if sufficient moist soil is on top of it, hold more of the moisture that falls than if only a small amount of soil is turned on top of whatever is or was on the surface, such as weeds, stubble, etc. A small amount of soil will not hold sufficient moisture to allow the turned-under vegetation to rot as quickly as we want it to.



T'is harped upon that it does not pay to plow deeply (or subsoil), and those who work out their theories, sometimes overlook many seemingly small points, or ignore them, to prove that the cost of the work is too great for the returns given in crop yields. Not enough consideration is given to what can be raised at a minimum cost afterwards. Assuming that most shallow plowed soils will not catch and hold as much moisture as deeper plowed soil and if the season is favorable, the immediate crop does not use all the moisture in the soil, then we will have some moisture left. Proper cultivation at the right time prevents loss of this. By using a soil augur we can find out how much moisture is in our soil. Then our own judgment and experience should tell us whether it will pay to thoroughly disk our stubble, if crop has been small grain, and drill in fall wheat (without replowing) on stubble land, or next season put in an intertilled crop.

It is not always a satisfactory method, because, just about the time this work ought to be done the farmer is busy (often too busy), and does not give the necessary attention to it. He often skims his work by trying to do two things at once and thereby loses a crop. The result is not what it should be, because of the way the work was done, but it is blamed on the deep plowing, because shallow plowed land, otherwise given the same treatment, did better.

Most farmers require immediate returns for their work and try to do too much. Not enough consideration is given as to what is the effect of their immediate work on future crops. Very few realize that when we plow deep, outside of what one might consider our main object (conserving moisture for the immediate coming crop), that the climate and weather are working for us on and in our soils; that great changes are going on night and day. Many things that we have very little idea of are working in our soils, helping us for future crops, when soil conditions are favorable. We are too presumptious about what we know relative to agriculture, because we are not willing to acknowledge our mistakes. The man who knows it all is dead. Look back just a very short time ago as time is considered, and we see on the map of the United States a vast area called the "Great American Desert." We never questioned but what it was properly so termed. We believed it was true to name. The very idea that this vast area could be made to grow anything, let alone anything worth while, was tabooed. Then bit by bit trials were made both by irrigation and natural precipitation and crops were raised. In spite of these proofs, irrigation was knocked when first started, and still today dry farming is knocked in spite of its success.

No farmer should allow his soils to be depleted of humus. Rotation of crops which should include sweet clover, will improve land in a marvelous manner. It is only a question of time when the farmer who is progressive will learn to do his work as it should be done. He cannot rob his bank (which is his soil) continuously through constant cropping without replacing certain necessities which his land requires to enable it to respond to his efforts. My suggestion is to try out whether it pays to occasionally plow deep. When doing so, take into consideration what it is being done for. Light sandy soils should not be plowed deep often unless we are turning under a mass of vegetation or other materials, straw, etc., to improve the texture of the soil to prevent it blowing and making it more retentive of moisture. Do not forget to run a weighted disk harrow on light soils when you plow deep, if you want to prevent soil drifting.

There is much to learn and unlearn in agriculture and it is really extraordinary that greater tolerance is not given to those whose ideas may not coincide with ours.

The subject is an inexhaustible one; much more might be written, but these few hints may prove helpful, if they will set our farmers to thinking. Some of them I hope will write us their experiences.

It will be interesting to read the letter of an observant farmer who compares his experiences on an eastern farm with the practices in Colorado, as follows:

"Having been raised on a farm, naturally I observe the methods of the farmers in the different localities. Since coming to Colorado I have taken particular notice of the methods used by the farmers, especially in the dry sections. In the fall of 1918 my attention was called to a field of wheat on a dry ranch just east of Denver. The farmer complained of having had such a poor yield. In a few weeks I saw this same farmer disking the wheat stubble, and supposed he was preparing the ground to receive and conserve the moisture of the winter months, but what was my surprise the next week to see him sowing this piece of land to wheat again without doing any more preparing of the ground than disking and harrowing. No wonder he had poor yields.

"I watched this piece of wheat until it was harvested. When it was ready to harvest it stood 8 to 12 inches high with a short chaffy head. Had this same farmer taken his tractor and set the plows as deep as they would have gone, created a good mulch, and only used one-half the land for wheat that season, and let the other half rest, and kept it cultivated until time to seed this last fall, he would have harvested at least as much, possibly one-third more than he did after his haphazard

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Parsons on Deep Plowing.

Success in dry farming depends almost entirely on the condition of the sub-soil. In speaking of the sub-soil we use the word to mean the solid ground underneath the plowed surface. If it is kept moist the roots of crops will penetrate it; otherwise they will not. The normal length of the roots of small grain is three to four feet, of corn four to seven feet or over. Now, if the farmer plows only six or seven inches and his sub-soil, through bad management, is dry, the roots never go into it and he is trying to raise a crop on seven inches which needs four feet, and if he gets only three or four bushels to the acre he wonders what the trouble is. The deeper the plowing the further the sub-soil is from the surface and the longer it takes to dry out. Drouth, as we all know, commences at the surface and goes down inch by inch a little at a time, and it takes about three times as long to dry out ten inches as it does six, for every inch you go down the slower the action of the drying process, and since the plowed land on top of the sub-soil acts as a mulch, it is an utter impossibility when once the sub-soil is wet up for any drouth to dry it out so that the roots of crops will not penetrate it, provided the plowing is good and deep.

On our ranch when we have three feet of wet sub-soil with a 10-inch mulch of plowed land above it and the surface cultivated besides, we don't care five cents whether it rains or not. When the glorious June weather commences, which shallow plowers call a drouth, we put a good mulch on our crops and go fishing.—E. R. Parsons, at the Fifth International Dry Farming Congress.

Remarkable Development of the Big Horn Basin

WHAT IRRIGATION HAS DONE FOR A NORTHERN WYOMING VALLEY.

T. S. PARSONS.

IN Northwestern Wyoming, bounded on the north by Montana and on the west by Yellowstone Park, lies the Bighorn Basin. This valley covers an area of 125 miles from north to south and 150 miles from east to west. The Basin, as the name suggests, is a depression surrounded by the Bighorn, Pryor, Owl Creek and Rocky Mountains. The valley is intersected by the Bighorn, Shoshone and Greybull rivers and by numerous smaller creeks which have their sources in the surrounding mountains.

The Bighorn Basin was formerly comprised almost wholly within the borders of Bighorn county, but a few years ago the counties of Park, Washakie and Hot Springs were cut off, leaving Bighorn county with an area of 2,073,600 acres, 75,000 acres of which are now under cultivation. Park county itself is as large as Bighorn county. The other two counties are among the smaller counties of the state. In all of these counties but a small part of the farming area has been developed. Cattle and sheep raising have been the principal industries along with coal mining and oil development. Since the development of irrigation, however, under the government and private enterprises general farming has gone forward very rapidly. The annual rainfall in this part of the state is only about four and one-half inches, so crops cannot be raised except under irrigation. There is fair grazing for sheep and cattle in the valleys and on the uplands, and very good pastures are found in the mountains.

Bighorn and Washakie are the banner agricultural counties of the Basin section, and a large part of the Shoshone irrigation project lies in the eastern part of Park county. Water from the Bighorn, Shoshone and Greybull rivers and from the numerous creeks supplies the moisture for crop growing. Water is now taken directly from the rivers through elaborate systems of canals for irrigation purposes. As more land is developed it will be necessary to build reservoirs to guard against the shortage of water in dry years. The Shoshone reservoir supplies water to a large area in Park and Bighorn counties and numerous other smaller reservoirs are projected for the conservation of waters that now go to waste at certain seasons of the year. The department of agriculture has just given permission for the construction of a dam across the Bighorn river near Kane. This will store water for irrigation of many thousands of acres of land in Montana, nearly 100 miles to the north. A large area of new land is being brought under cultivation every year on the Shoshone project, and many thousand acres more will be brought in when such projects as the Lakeside, Oregon Basin and Medicine Wheel are completed.

More intensive farming is done in this section of the state than in any other. The farms are smaller and the farming more diversified. Sugar beet raising is one of the principal lines of work all through the Basin. Twelve tons per acre is the average yield and the farmers received $10 per ton for their crop last season. The sugar factories at Lovell and Worland paid out to the farmers of the Bighorn Basin in 1919 more than half a million dollars. The beet tops which were kept and fed on the farm were worth $8 to $10 per acre more. Large numbers of cattle and sheep are fed in the Basin every winter on alfalfa, beet tops and beet pulp.

Corn on the J. W. Pulliam Ranch, three miles from Worland, one of the most successful farmers and stock raisers in the Basin.

Big Potato Yields.

The Bighorn Basin is becoming one of the greatest potato growing sections of the country. Three and four hundred bushels per acre are not uncommon yields, and farmers frequently receive $200 to $300 per acre for their crop. The soils are especially adapted to the growing of potatoes. The Russet Burbank, White Pearl and Bliss Triumph are the varieties that do especially well and the ones most generally grown. Washakie county is noted for its large yields of potatoes. Yields of 700 to 800 bushels per acre were reported by the county agent this season. Most of the potatoes raised in the Basin section are shipped to the central and southern states and bring the top market prices. There will be a large increase in the acreage of both potatoes and beets in the Basin section this spring.

Alfalfa, sweet clover, corn and small grains do extremely well in this section of the state. Three cuttings of alfalfa are obtained during the season and the total yield is four to five tons per acre. Considerable alfalfa seed is also raised. Sweet clover is a popular crop for pasture and for seed. An acre of sweet clover pasture will keep 20 lambs, or two head of cattle through the growing season, and 600 to 700 pounds per acre are not uncommon yields when the crop is grown for seed. Corn does well in most parts of the Basin since the altitude ranges from 3,700 to 5,000 feet. It is grown both for grain and silage. Sorghum, Sudan grass, beans, tomatoes and all kinds of garden crops do well, as the summers are hot and the large amount of sunshine makes everything thrive when supplied with moisture.

More fruit is grown in the Bighorn Basin than in any other part of the state. Basin apples are becoming well known beyond the border of Wyoming. The bench lands all through the valley are dotted with orchards, many of which are just coming into bearing. Small fruits of all kinds do exceptionally well. Plums, apricots and cherries grow in abundance, and grapes, peaches and pears are grown to some extent. The sections tributary to Basin, Kane and Lovell are the best fruit growing sections. Worland is the center of the fruit growing secton of Washakie county. Bighorn Basin fruits always carry off a large portion of the premiums offered at the Wyoming state fair.

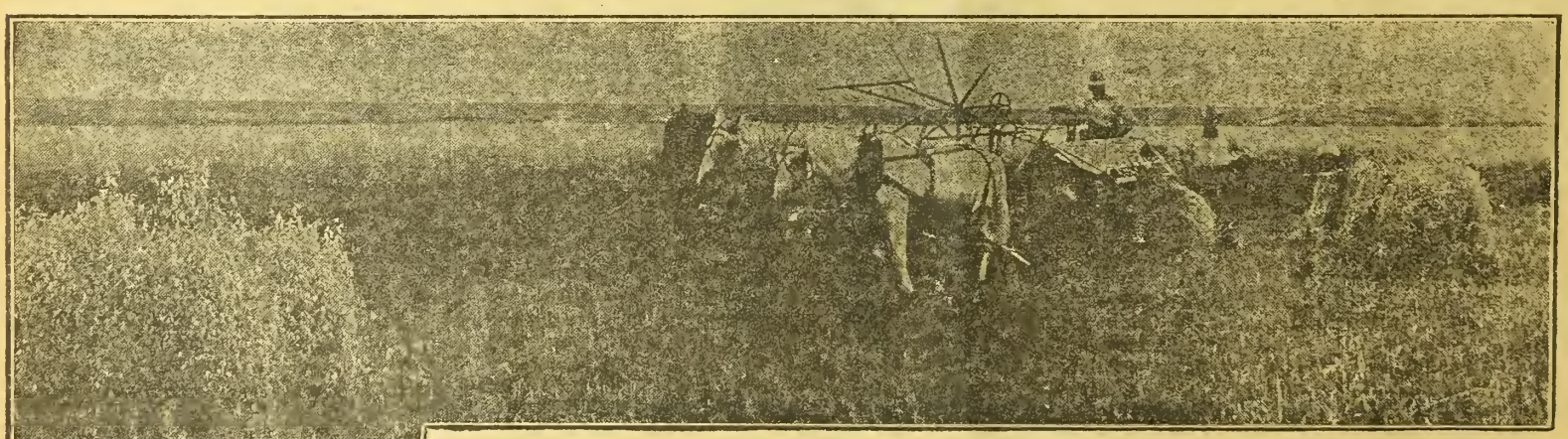
Beekeeping is profitable in the Basin section. The initial investment is small and the income large. Fifteen to $20 per hive is about the average income for honey. One beekeeper at Lovell sells $8,000 worth of honey per year. The sweet clover which grows so abundantly throughout the section affords ample pasture for the bees. Nearly 1,000,000 pounds of honey is shipped out of the Basin annually. The average price there is 20 cents per pound.

Bringing in Dairy Cattle.

Dairying is profitable in the Bighorn Basin. The alfalfa, corn and other crops grown afford abundance of feed and many silos built the last two or three years, along with the good stock shipped in, is rapidly bringing dairying to the front. Two carloads of Holsteins were brought into Bighorn county by the state dairy specialist last summer and several carloads were brought in previous to that time. Creameries at Powell and Basin, and a cheese factory at Lovell, are helping to develop the dairy industry. Alfalfa mills are located at various points in the Basin and farmers are learning the value of the ground alfalfa as a feed. Corn, sunflowers and other crops are grown for silage and used in cattle and sheep feeding. Beet tops are also put in the regular silo or trenched and fed to much better advantage than when dry. The silo is being used extensively in sheep feeding, especially at lambing time. One farmer near Lovell fed his ewes silage and lambed out 166 per cent. A neighbor on dry feed lambed out only 60 per cent. The past year of feed shortage has demonstrated the value of the silo and many more silos will be built in the Basin section this year.

The keeping of a small flock of sheep on the farm is attracting a good deal of attention in this section of the state at the present time. On the irrigated farm of 80 to 160 acres, 200 to 400 head of sheep can be kept at little cost, as the sweet clover and weeds growing in fence corners and along ditch banks will furnish a large part of the feed needed and the farm will be benefited by the keeping down of the weeds and the fertility added by the sheep. Many farmers sell their alfalfa and beet tops to sheep owners to be fed on the ground. This practice brings a better price for the crops and increases the fertility of the soil.

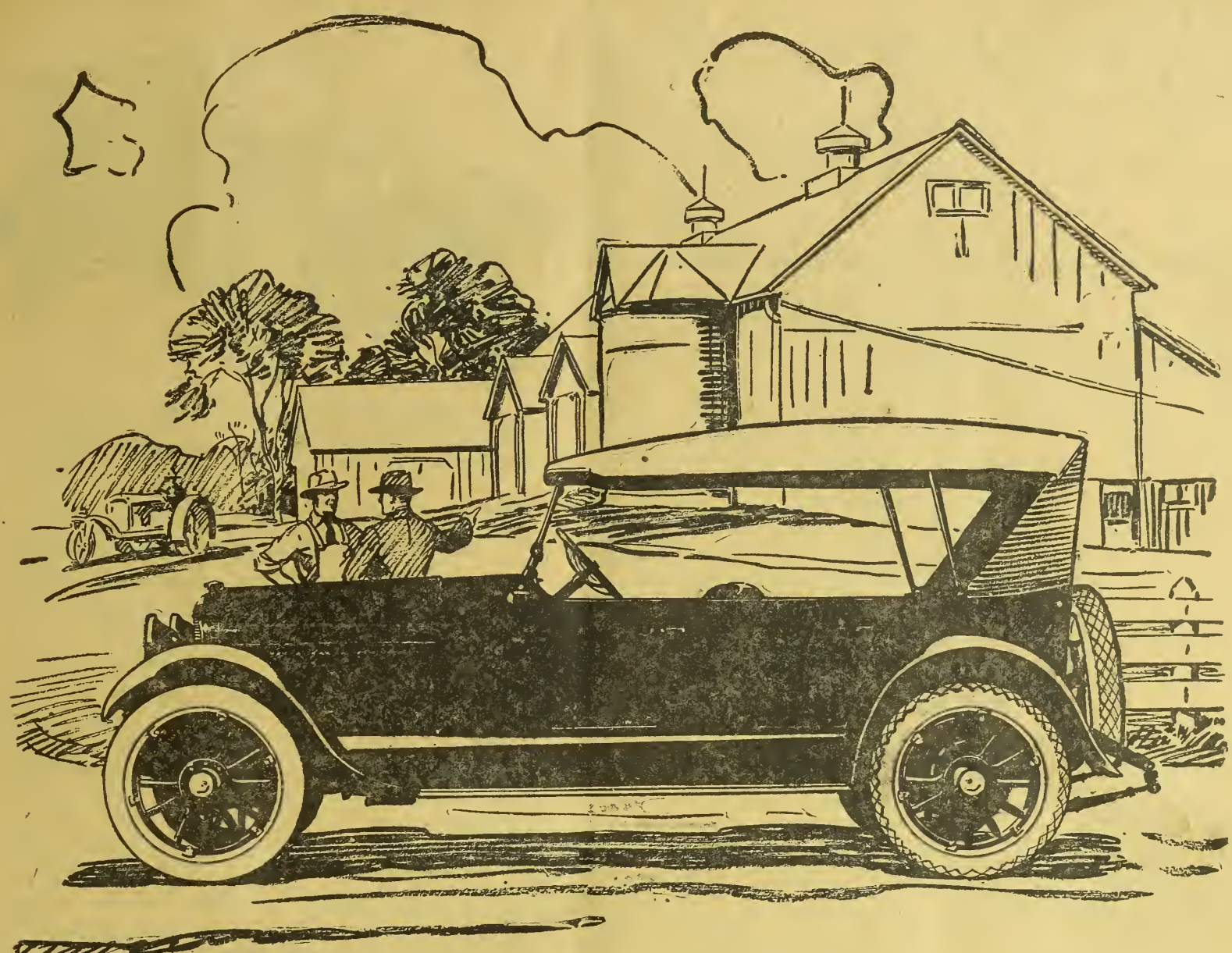
The larger towns of the Basin are located on the Bighorn river along the Chicago, Burlington and Quincy railroad. The railroad furnishes a direct outlet to the north at Billings and to Denver on the south. Thermopolis near the end of the Basin is noted for its hot springs. The state reserve contains many natural wonders, and people come from all parts of the country to obtain the benefits of the baths and mineral waters. Bighorn Canon, one of the scenic wonders of the Rocky Mountains, begins a few miles above Thermopolis and the Boysen dam and reservoir at the head of the canon supplies electric power to the surrounding country. Basin, the county seat of Bighorn county, and Worland, the county seat of Washakie county, are centers of fine agricultural districts. Greybull is the center of the oil industry in the Basin. Many oil wells surround the town and large oil refineries are located here. Lovell, Cowley and Deaver are agricultural towns in the northern part of the Basin. Lovell, in addition to being the center of a large agricultural section, has many thriving industries such as an oil refinery, glass works, tile factory, and brick plant. It also has fine schools and churches, as have all the towns in the Basin. The Latter Day Saints at Lovell are just completing a $100,000 church building. Cowley has a large carbon plant where carbon is extracted from natural gas and a dehydrating plant which will utilize low grade and cull potatoes as well as other vegetables and fruits grown in that section. Deaver is the principal town on the lower part of the Shoshone irrigation project. Otto, Byron, Burlington, Shell and Hyattville are small inland towns, each the center of a prosperous farming or livestock section. Kirby, Manderson and Kane are small towns on the railroad.



Harvesting oats on the farm of Abner Johnson near Worland. He has made more clear money on his large farms than any man in the Basin.

No part of the state offers better educational facilities than the Bighorn Basin. Even the rural sections are well supplied with schools. The larger towns have fine high school and grade buildings and most of them have taken up the Smith-Hughes work and offer courses in agriculture, domestic science and manual training. At Basin, Worland, Lovell, Deaver and Kane are con-

(Turn to Page 41).



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In our long experience as manufacturers, we have never produced a model that has so quickly won its way to public favor. Everyone, apparently, recognizes in the "Glenbrook" an engineering and designing achievement of the utmost importance.

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PAIGE-DETROIT MOTOR CAR COMPANY, DETROIT, Michigan

Witch's Island

BY W-T-NICHOLS

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CHAPTER XVII.

Of a Pleasure Craft in Distress.

How serious the plight of the stranger might be it was not for a landsman to determine, but even an untrained eye could note that her foretopmast was missing; and that her pumps were going was testified by the thin stream of water pouring down her side. One could even make out the bobbing heads of a couple of sailors at the brakes, while other men appeared to be about to launch one of her small boats.

"Caught in the blow, shaken up, scared out of her senses, and jumping for the nearest land, regardless," Grayson growled. "Fine kettle of fish they'll make for us, with their uniforms and brass buttons and hat-bands. One real sailor man—what's the use, though? Here they are, and here they mean to put in. They're dropping a boat to sound the entrance—see? And how many will they muster? There are half a dozen people on deck—one's a woman. Five men let us say, and we're five, counting Hoban. They don't outhold us there, anyway. And—oh, well, there's nothing else to do."

"Meaning thereby?" I asked, pressing after him as he started down the beach.

"Meaning to make a fair wind out of a foul," he threw back at me. "A yachting crowd's pretty sure to be rather futile, we'll offer 'em the friendly hand as preferable to an unnecessary fight."

He pushed off the white boat—apparently he deemed himself on terms with Miss Perham warranting the borrowing of the craft—rowed to the Pera, took the skipper aboard, and headed for the crippled yacht. Presently he was close to her, and there was a confab with her master, which ended in the latter shifting helm and following Grayson and the skipper into the lagoon, the yacht's own boat, which had been lowered, towing in her wake.

It struck me, watching proceedings closely if not sapiently, that Grayson piloted the newcomer far in; for she drifted well beyond the Pera before her mudhook was dropped. Then, with very little delay, her boat was hauled alongside, a sailor dropped into it, and a man in white duck with a big sun-helmet on his head assisted a woman to embark. Grayson had been awaiting them, and side by side the two boats pulled for the beach.

"What vessel is that and who are those people?" said a clear voice at my elbow.

So intent had I been on the doings afloat that I had failed to note Miss Perham's approach, under the unfailing escort of Hoban, the faithful.

"I don't know," I answered, "but that's a lack that'll soon be remedied. Grayson has scraped acquaintance, and it's our part to prepare for introductions. It'll be quite in keeping too, with the rest of our day. Sunday afternoon, you know, is a famous time for friendly calls."

She didn't frown, nor did she smile at the feeble pleasantry, but I fancied that she was not overpleased at my coupling of herself with me on the reception committee. At all events, she said nothing, so we stood silently until the boats were close in.

"If I may venture a suggestion," said I, "it is that we advance twenty paces or thereabouts. It'd look more—more—well, more hospitable you know."

A moment she hung in the wind. "Oh, come!" I urged. "You're more or less in the position of hostess, aren't you?"

"Perhaps," she admitted.

"Then, noblesse oblige," I chuckled.

She stepped forward so quickly that I was forced to fall in with Hoban in the second rank, so to speak, but the brief delay had enabled the boats to reach the beach. Grayson was ashore and aiding the man in white to assist the woman to land. I observed that she took a hand of each of the cavaliers, and opined that she leaned fully as heavily upon Grayson as upon the other. Her smile—and it was a generous one—surely was divided unevenly with the lions share falling to my friend.

She was a pretty woman, very pretty, in fact; not tall, but of a pleasing rounded figure, displayed to advantage by a tight-fitting gown. Also she was blessed with magnificent teeth, a roguish dimple, a fair skin, a wealth of hair which caught a bronze tint where the sun struck it, and a pair of eyes, of a hue I have heard described as "baby blue," without involving thereby infantile ignorance of this world and its wiles. Of her age there might be ground for difference of opinion. Some types wear better than others, and care avails much as a preservative, but I set her down in that not unattractive twilight zone, where the years outnumber the conjecture of the guileless but fall short of the cold calculation of the cynical.

So much for the looks of the lady, now for what she did and what she said. As her faultlessly shod feet touched the sand, after affording more than a glimpse of trim ankles in silk stockings, she released the hands of her knights and clasped her own in a gesture of ecstatic delight. She raised her blue orbs to the darker blue above them while her lips moved in what was apparently a prayer of thanksgiving for delivery from the sea and its perils. Which act of piety having been most becomingly performed, she dropped her hands, and lowered her eyes, and surveyed Miss Perham with thinly veiled curiosity.

Grayson duly did his duty of presentation. We had with us, we were informed, Dr. Abels of the yacht Fair Lilian, and his sister, Mrs. Vincent, both of whom displayed a flattering pleasure in making our acquaintance. The lady was especiallly overflowing with good will. She gave me a fervent pressure of a warm little hand, and hinted at a readiness to fall into Miss Perham's arms, had that young person evinced the slightest desire for the embrace. But Miss Perham, while courteous, was formal. The plump lady recovered herself with skill, opened her ingenuous eyes to their widest, and bubbled with enthusiasm.

"But my dear Miss Perham! What a charming adventure! To be the princess of this lovely island, and hold undisputed sway! Why, it's a romance, a living romance!"

She had a voice like herself, had Mrs. Vincent—pretty, and soft, and smooth, and well rounded. Grayson stirred uneasily. I stole a glance at Edith Perham. Only the quick color in her cheek showed how much she had read between the lines in the encomium on her lot.

"The Spanish Main is the home of adventure, is it not?" she said quietly. "I must confess, though, I've found quite as much of the prosaic as of the romantic on the island, though Hoban has looked after me as devotedly as he always did at home. And as for incident—why, surely you've found more at sea than could befall one safely and stupidly ashore."

"Oh, the sea, the terrible sea!" The blue eyes were rolling now most fetchingly. "The frightful, greedy, devouring sea! It's a monster, an ogre, a dragon. It hurls you about, it swallows you up, and roars and rages and——"

Mrs. Vincent's brother broke in upon her, not rudely but with a manner of explanation.

"We did come in for a grand shaking-up in the gale. It left us in very bad shape. There was a leak and we were short-handed—we'd lost a boat and its crew, you know. Yes, a sailor was swept off the bowsprit, and the mate attempted to rescue him. It was brave, but it was foolhardy—it cost us four men instead of one. After that—" he hesitated an instant, betraying an emotion for which I liked him the better—"after that, I told our master to make the nearest land. He thinks he can get at the leak and make repairs by beaching the yacht—careening, I think he calls the process."

"My dear, picture the horror of it all!" cried Mrs. Vincent. "Four men gone! Four lives lost in an instant! Do you wonder I dread the sea? Do you wonder I insisted that Howard should bring me ashore at once? Do you wonder that if I could, I'd never stir foot from dry land again on that murderous ocean?"

"As you will understand, it was a most distressing affair, most lamentable," said Abels. He took out his handkerchief and wiped his brow, as if the cold sweat had started at the very recollection. "Not that I've given up all hope. The boat was seaworthy, and the mate skilful. They were swept away to leeward and we lost sight of them—still, there's a chance. I won't relinquish that."

He was, as I should have related sooner, a round faced, prosperous man, sturdily built, clean shaven, with a touch of the student in his appearance, imparted by a pair of mandarin spectacles, the lenses of which had an amber tint. Afterward he told us his eyes were weak, and the glare of the sunshine distressed him.

Mrs. Vincent hastened to change the subject. "My dear Miss Perham," she cooed, "we've had enough of the sea and its horrors, don't you think? And you'll show us your delicious island, won't you? And you'll tell us its legends and everything else. It's all new to me, you know, this Caribbean world, and as for this island—why, I've never heard even its name."

"It's sometimes called Witch's Island," said the girl.

"How deliciously creepy! And you've had it all to yourself, with these splendid fellows to do your bidding!"

It seemed to me Mrs. Vincent was carrying it rather far, and Abels may have been of like mind, for he spoke quickly.

"We certainl owe a debt of gratitude to Miss Perham and her friends for our kindly reception. And if we may explore the island a little——"

His sister clapped her hands "Delightful! And you'll show us your house, won't you? For there is a house, isn't there? Or do you live like gypsies in tents?"

"I used tents at first, but the storm destroyed them,' Miss Perham explained. "Now I have a cabin, which these gentlemen were so kind as to turn over to me."

Mrs. Vincent gave a silver laugh, a little high pitched but musical. "My dear, I'm devoured by curiosity! A cabin in a tropic glade! Romance! Indeed, I must insist that you've been living one."

Dr. Abel beamed through his tinted glasses. "I found ground—quite different ground, perhaps—for envy. I'm a nature lover, a naturalist in a mild way. I have made some collections of insects, and this island, which I'm told is seldom occupied by man, should offer a most profitable field."

"Oh, those collections! All horrid things that crawl or bite or sting or buzz! And he has thousands of them, yes, millions!"

Mrs. Vincent's manner conveyed a pretty despair at her brother's accumulations, but her blue eyes were roaming over the group, with a curious effect of appraisement. Hoban, I've no doubt, she placed instantly in his proper category; Grayson, clean shaven and in Sunday order, looked the gentleman; as for me, there could be no flattering doubt—I must have seemed a sad ruffian, red-faced, dirty, ill clad.

But the doctor was hastening to defend his scientific recreations.

"Oh no, not so bad as that!" he protested. "What I've done has been on a very modest scale. My opportunities——"

"Well, Howard, you've opportunities now," his sister interrupted. "Why not improve them? We may be detained here for days. I warn you I'll not set foot on the yacht till that leak is stopped—absolutely stopped. And I've an inspiration! Send the man back for what we need to make us comfortable, and a sail for a tent, and we'll camp on shore."

"Why—why——" Abels said, and glanced questioningly at Grayson.

We had decided to make a fair wind out of a foul, and it was too late to change course. Grayson did what he had to do.

"If we can be of assistance, we are at your disposal," said he, with courtesy if not with warmth.

"Bravo!" cried Mrs. Vincent. She took a quick step forward, and slipped a hand through Edith Perham's arm. "My dear, you shall be our guide, and these stupid men shall follow our lead. First we must see your bower; after that, there'll be time for less fascinating things."

Grayson and I fell behind the woman and the girl, while the doctor turned back to give the boatman his orders.

"What change has been wrought?" said I in a whisper. "Who's in command here, anyway?"

Grayson's lip curled. "We've a chaperone now, Scott. The married woman's asserting her paramount authority over the maid."

"And the maid bows to it," I grumbled. "Queer, too. I'd have sworn that if ever there were independence personified——"

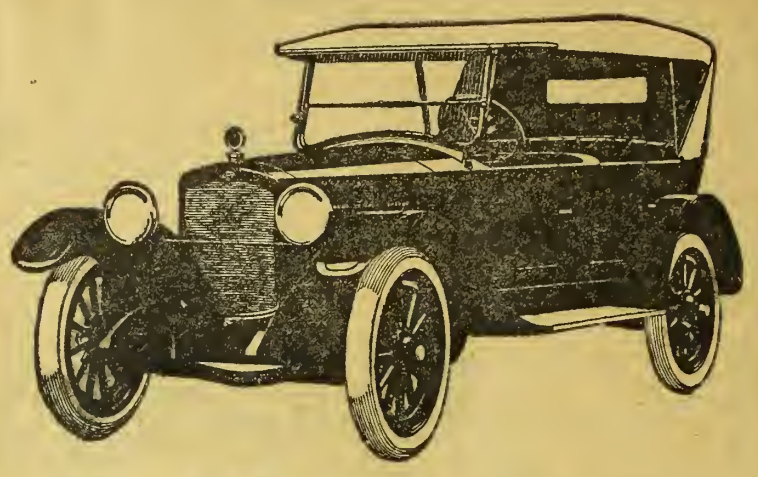
There I paused, for he could complete the sentence for himself. There might not have been meekness in the girl's bearing, but there was acceptance of the situation.

"We thought ourselves a long way from the Avenue and four o'clock teas," said he. "It wasn't so far, after all."

"Hang it, no!" I groaned. "And just as I was getting to like the simple life! I don't fancy rubbing elbows with civilization again."

"That's because civilization bristles

(Turn to Page 24.)



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This year's car is by all odds the finest Grant Six that has ever been built. The high radiator and hood with aluminum molding give a new touch of distinction and with the long, low body lines, make a decidedly handsome and stylish car.

The famous Grant Six overhead valve engine has been steadily refined and improved until it is one of the most flexible and responsive motors ever put into a car. It has power and speed beyond what most men will dare to use.

The Grant Six is an ideal car for farm use because of its remarkable spring suspension. The rear springs are underslung and 56½ inches long—the longest springs ever used in a car of 116 inch wheel base. When the rear seat is filled the springs are flat so that the full spring action is obtained and the car travels over rough, bumpy roads with utmost comfort.

This model exceeds in wheel base and in size any former Grant Six.

In buying the Grant Six you get a car you can be proud of, a car that will satisfy you completely—a powerful, roomy, speedy, comfortable car of unusually fine appearance.

Write for new illustrated catalogue and name of Grant Six dealer in your community.

GRANT MOTOR CAR CORPORATION

CLEVELAND, OHIO

Fence-Post Preservation.

W. J. Morril and B. O. Longyear,
Colorado Agricultural College.

Decay in wood is caused by low forms of plant life—fungi—living in and feeding upon the wood. If these fungi are killed and the wood poisoned, further decay will not occur. The preservative treatment of wooden fence posts consists of the application of some material to the wood which will prevent, or at least hinder, the decay of the timber. The degree of success depends mainly on two things ,(1) the kind of preservative material used, and (2) the manner of applying the treatment.

A good preservative should be poisonous, insoluble in water, easily applied and penetrating, as well as easily obtainable and cheap. The most common and effective preservatives used are the gas tars, produced during the manufacture of illuminating gas, or the creosotes derived from them by distillation. While the gas tar is usually much cheaper than the creosote, the latter is more effective as a preservative, due to its greater penetrating quality and because it contains the larger part of the preservative substances of the tar itself. Recent experiments at the Forest Products Laboratory of the United States Forest Service show that there is no practical difference as a preservative between the creosote from coal tar and that from water-gas tar.

Under present conditions in this country it is impossible here to give prices which can be depended upon, as these are fluctuating. Before the war coal-tar creosote cost $10 a barrel or 30c a gallon in Denver, and the water-gas at $3.50 a barrel or 8@9c a gallon at Fort Collins. In general, the coal tar costs about one-third as much as the creosote, but probably gives less than one-third the protection to timber treated with it.

1. Brush Treatment and Dipping.—These are the simplest and cheapest methods, because they require no expensive equipment and because very little preservative is used. The butts of the posts are painted for a length of 30—33 inches with two coats of coal tar creosote heated to near the boiling point in kettles, or the butts may be dipped instead of being painted. They must, in any event, be treated to a length which will be six inches above the ground line after they are set. The second coat of creosote is applied about a day after the first treatment. An inch or two painted on the top of the post will aid to preserve that portion of it, or the tops may also be dipped instead of painted. This treatment will nearly, if not quite, double the life of the posts at a very trivial expense. Of course, not much of the poisonous oil will have penetrated into the wood by merely dipping or painting, and the posts will not last as long as they would were they treated by the open tank method:

2. Open Tank Method.—An outfit such as is used at the Colorado Agricultural College cost about $45 (before the war); specifications may be had free upon application. In some instances a loan of the equipment may be arranged for.

Any tank may be used that is at least 36 inches deep and large enough to hold 10—25 or more posts standing upright. The tank must stand on a brick foundation which will permit of a fire being built underneath, with a stovepipe leading out to maintain proper draft. An excavation in the ground with suitable smoke outlet and draft requirement will probably serve, with cross bars upon which the tank is set. A thermometer is also needed—one that will register up to 200 degrees F.

The posts are placed butt-end in the tank until no more will go in. The tank is then filled with creosote, by drawing the liquid out of the barrel into a bucket and emptying the bucket into the tank until the creosote comes 30 inches up the posts. If the weather is cold, it may be found that the napthalene in the creosote has solidified. In such case some of the liquid portion of the creosote may be heated in the treating tank and then turned back into the original barrel to melt the napthalene, or the solid mass scooped out and dumped into the heating plant to melt. A fire is kindled in the firebox beneath the tank and the temperature of the creosote brought up to between 180 and 200 degrees F., and held there for an hour or two. The fire is then left to die down and the posts kept in the liquid until it cools off completely, about six hours or overnight. Care should be taken that the hot creosote in the tank does not run over the sides and catch fire.

By weighing a post before and after treatment, it can be determined whether it is receiving enough or too much creosote. About 3 pounds (pints) to a post is about right. However, if it is desired to use only half as much, thus reducing the cost of the post, the time in the hot and cold baths may be regulated to obtain the required results. The more creosote put into the post the longer the post will resist decay.

It is advisable to paint or dop creosote on the top of the post, down an inch or two, to make this end last as long as the wood at the ground line.

The open tank method may be modified in at least two ways to cheapen the process: (1) By not letting the posts remain at long intervals in the cold creosote, in which case they will not take up as much, and (2) by using gas tar, which is cheaper but not so effective as gas tar creosote.

The cost will depend upon the method of treatment—brush or tank—the species of wood, and the cost of the preservative used. Using a good grade of creosote costing 30c a gallon, brush treatment of the ordinary Idaho split cedar posts will not be over 5c each. If gas tar can be obtained at $3.50@$4 a barrel the treatment need not be over 2 cents a post. By the open tank method the cost per post for the split cedar will be about 10@12 cents when the creosote is used, or 3 cents when tar is used, at the above prices. One barrel of creosote should thoroughly treat from 30 to 150 posts of this kind. Species such as cottonwood and lodgepole pine absorb more of the substance than the Idaho cedar, making the cost correspondingly higher, possibly one-third to one-half more being required with the open tank method.

Durability varies with the method of treatment and the kind of preservative used. In the case of split cedar posts, which ordinarily last from five to seven years untreated, the brush treatment with two coats of creosote may be expected to almost double the length of service. With the open tank method, using the same material at the rate of 3 pounds to a post, the period of service may be extended to 25 years in the ground. Cottonwood and lodgepole pine, which commonly last only three or four years untreated, may be made correspondingly durable.

Treatment of Cheap Posts.

Species—	Hot Bath Hours	Cold Bath Hours	Lbs. Creosote Absorbed	Cost of Creosote @25c gal.
Cottonwood	2	10	5	.15
Willow	6	12	6	.18
Soft maple	5	12	5	.15
Box elder	5	12	5	.15
Ash	5	10	4	.12
Honey locust	4	10	4	.12
Idaho cedar	4	12	3½	.11
Lodgepole pine	2	10	5	.15
Aspen	2	10	5	.15

BEFORE you buy oil for your car, consider the Five Essentials of Automobile Lubrication:

1. Your oil should reduce friction to the minimum.
2. It should leave your engine in a clean condition.
3. It should act as a compression-seal to conserve power.
4. It should not contain or form any substance injurious to the engine.
5. It should be economical in use.

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Huerfano County's Fine Record

GETS SECOND PLACE IN U. S. SIRE CAMPAIGN.

WALDO KIDDER, County Agriculturist.

Beginning of calf herd of E. E. Harrison, La Veta, Colo., to be fitted for the next National Western Show.

LAST fall the Department of Agriculture started a crusade to get stockmen to enroll in the Pure-Bred-Sires-Only movement. In this the leaders of the movement are only trying to get all stockmen to do what many in Huerfano county are already doing. So it is not surprising to learn that by the first of January 1920, this county was tied with a Massachusetts county for second place in the United States for the number having enrolled in the county. The men enrolling were progressive stock raisers and had already been following out the method by using good sires only and so they could get in the movement without having to make any changes on their main stock lines, that is cattle, hogs or sheep. This condition may or may not exist in other counties; perhaps it does to a more or less extent as stockmen are coming to realize that as the open range gets shorter and shorter, the number of head that can be carried will have to be fewer but better in order to keep up with their profits, and feeding will have to be done on a better and bigger scale. But we will keep to the better breeding part of the question.

The Farm Bureau at La Veta under the leadership of Mr. C. L. Martin, a well known Hereford breeder, held a demonstration tour of several herds of cattle in their community to have the men prove to themselves the value of the best sires obtainable. At Harry Fielden's ranch he said that the difference between his high grade calves and his scrubbier ones would make a real good sire pay about $1,100 per year over the use of an inferior one, and Fielden knows. Most of the stockmen in the county have seen or are seeing this same object lesson in their herds and as a result the bulls going on the ranges are of the best in most instances and cost from $300 to $500.

The county is mostly a shortgrass country, so most of the range cattle predominate in Hereford blood, as they will pick a living from this grass where other breeds could not. This predominance of Hereford blood and the insistent call for good sires has built up several of the finest herds of purebred Herefords in the state, to supply the demand for range sires. Most of you know something about them already but many may not, so I will tell something about several of our good breeders. Among the best Hereford breeders are E. E. Harrison and D. Firm & Sons both of La Veta. Harrison has for the past seven years been in the business of raising good sires for range conditions. He secured his foundation stock from Nebraska originally of the Gudgell & Simpson breeding, and some from Wm. Reynolds of Lusk, Wyo. His first herd bull, Moonchange 3rd, a Beau Mischief bull, got him 104 calves which averaged about $375 per head. In 1918 he secured as one of his herd sires Prince Aster from Fulscher & Kepler at Holyoke. Harrison's breeding is to be the Beau Mischief strain and the sires he sells for range use have a good reputation.

Noted as a breeder over the state are David Firm & Sons who have shown at the Western National for the past four years and taken home quite a few prizes. Their foundation came from Gudgell & Simpson of Independence, Mo. The Firm brothers—two of them manage the stock—have been constantly improving their herds with the use of such bulls as Heir's March On 8th by The Heir; Beau Lindell 2nd by Beau Mischief; Model Mischief by Beau Aster; and Wilton Domino by Prince Domino. That their efforts have been successful is shown by the fact that at the Stock Show they sold 5 head at an average of $1,295 in the sales ring. Their success they say is due to "good seed stock and the feed bucket."

From all of this you may think that good Herefords are the only breed we produce here. There are many herds of good Herefords but we have a few men in Shorthorn breeding among them Brunelli & Son of Walsenburg, starting a herd with some of Warnock & Sons' stock. In the mixed or dual purpose cattle are the Red Poll. These are gaining favor, due perhaps to the success of the breeders raising them. Among these men are J. F. Karst of Huerfano and J. W. Yost of the same place. These men are raising this class of cattle to meet the dry land farmer's needs.

Now let us look at the dairy cattle. More and more farmers are getting into this line of production and realize the value of sires from high producing strains. The main dairy breed here is the Holstein. Among the breeders of purebred Holsteins are C. M. Hill and J. L. Morris of Rouse and W. B. Russell of Huerfano. Mr. Hill secured his foundation stock of cows from Donley & Simpson and his herd bull from the Branch Hill Farms in Ohio. In his herd are three granddaughters of Pontiac Korndyke. One of his best cows, Grace Fayne Buttergirl, won three ribbons at the 1917 Western. You can see the class of sires Hill has to

Farmers inspecting purebred herd in Huerfano county. Prof. R. W. Clark speaking.

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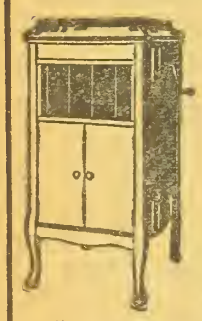

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To Save Your Teeth

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It is Film that Ruins Them

This is why brushed teeth discolor and decay. And why old methods of cleaning have proved so inadequate.

Your teeth are covered with a slimy film. It clings to them, enters crevices and stays. That film is the cause of most tooth troubles.

The tooth brush does not end it. The ordinary dentifrice does not dissolve it. So, month after month, that film remains and may do a ceaseless damage.

That film is what discolors—not the teeth. It is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea. Also of many other troubles.

Dental science, after years of searching, has found a way to combat that film. Able authorities have proved the method by many careful tests. And now, after years of proving, leading dentists all over America are urging its daily use.

Now Sent for Home Tests

For home use this method is embodied in a dentifrice called Pepsodent. And a 10-Day Tube is sent without charge to anyone who asks.

Pepsodent is based on pepsin, the digestant of albumin. The film is albuminous matter. The object of Pepsodent is to dissolve it, then to day by day combat it.

The way seems simple, but for long pepsin seemed impossible. It must be activated, and the usual agent is an acid harmful to the teeth. But science has discovered a harmless activating method. And millions of teeth are now cleaned daily in this efficient way.

Let a ten-day test show what this new way means. The results are important, both to you and yours. Compare them with results of old-time methods and you will then know what is best.

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offer to the dairymen of the county and the other men are getting in line to help meet the demand.

Of Jerseys there is but one herd owned by R. G. Inman of Gardner. This herd was purchased last fall from R. C. Robertson of Trinidad. Prof. R. W. Clark is said to have remarked that as a herd it would outscore any in the state. As yet the Jersey is not in very great demand.

These are some of the breeders of good cattle in the county. This article was not written to advertise these men or their stock but to show that it is the good stock for which there is a market. As most of the range men pay about $500 for each sire, they want good calves and when they turn this class of animals on the range they want others to use equally high grade sires so the cost of good calves can be equally prorated. They want every stockman in the Purebred Sires movement.

What applies in Huerfano county applies throughout the state, especially where there is open range. We need a law permitting only the use of purebred sires on the ranges and forests. Each of you stockmen who may read this help along the cause of greater profits in your business by getting purebred herd sires.

Selecting Corn For Seed.

When corn growers are selecting seed in the crib for next year's crop or are giving their fall selected seed a close culling for the final test in the germination box, the more important points to be considered in such selection may well be emphasized as follows:

1. If the corn we are picking over were fall selected on the stalk in the field, we know that we need pay no attention to whether it will yield or not. That was attended to last fall. If we are picking seed from the crib we need pay no attention to whether it will yield or not for no ear character is a sure indicator of ability to yield.

2. All that we can do by selection now is to obtain a uniform type of seed true to the variety characteristics and seed that will grow. Hence we select a good average sized ear of the proper color, shape and type of kernel while we discard all ears that are not very similar in all these characteristics. It is well to consider these facts in choosing these ears.

a. Ears that are well covered at the tip but shorter than the average are very apt to produce ears shorter than the average.

b. Ears that are not covered at the tip are not good for show ears but if of good size are apt to yield more than the short covered ones.

c. Extra long ears are apt to produce corn that is too late maturing.

d. Ears that are unusually thick do not ripen as quickly or dry so thoroughly as medium sized ones.

e. Relying on the fact that like begets like, we choose for our model ear one that is as large as experience has shown will ripen well in our locality.

f. Kernels of uniform shape and in straight rows are of value in seed we may offer for sale as an indication.

g. Deep kernels will not mature well in western regions. Likewise deeply dented kernels are not suitable in the dry regions.

h. Freedom from the disease shown in cracked kernels filled with fungus is essential, for this disease may be present in kernels that are whole, from the same ear. The seemingly good kernels may even sprout and grow but are apt to be barren or grow nubbins.

3. We depend upon a germinatien test to decide both ability to grow, and to a large extent, freedom from disease. A few years ago we planted seed from ears that had one or two weak sprouts on the six kernels in a rag doll test. Now we know better than to do this. Recently the Indiana Experiment Station has shown that these weak sprouts are indications of disease and that similar seed when planted are apt to fail to sprout, grow only a few inches or at best produce a barren stalk.—Kansas State Agricultural College.

Colorado Shorthorns Go To South America.

Colorado was well represented at the Shorthorn Congress and sale held in Chicago recently. Twenty-one head of Colorado Shorthorns made a fine showing for the breeders of this state and 7 of the animals went to foreign buyers at the sale. The Cornforth Livestock Co. consigned 2 head, one a 2-year-old heifer, Glendale Addie, who won third in her class as was bought by William Hartnett at $1,025 to go to South America.

The Allen Cattle Co., consigned 6 head and in the sale 4 of the animals went to South American buyers as follows:

Stylish Thought, a yearling bull sold to Wm. Hartnett for $775; Divide Symphony, a yearling heifer sold to Wm. Hartnett for $2,000; Divide Aristocrat, a 13 months calf and Susan 14th, a two-year-old heifer, to R. Pareja Reissig, of Montevideo, Uruguay, for $500 and $900 respectively.

Mr. A. G. Cornforth of Forest Glen Ranch purchased a fine bull calf of excellent breeding sired by Uppermill Sultan and out of Bramble Queen, which will be a noteworthy addition to that excellent herd of Shorthorns. It was demonstrated at the congress that Colorado breeders are producing the good ones.

Direct Buying in Wyoming.

There has been some criticism of farm bureaus for going into commercial transactions such as the purchasing of carloads of fruit, feed, hay, etc., for the ranchers. It is not the intention of the farm bureau to take up commercial work if some dealer in the community will handle the transactions. The farm bureau is willing that the local merchant or dealer shall make a legitimate profit and it is not for the office of the farm bureau to carry on commercial work.

Where the local dealer will not be reasonable in the matter of handling commodities needed by the bureau members, it is legitimate for the farm bureau to take up the matter for itself. Naturally, the merchants and dealers have a better knowledge of business than the farm bureau and should be able to make better business deals and should be willing to co-operate with the bureau on a fair basis of profit.

The Lincoln County Farm Bureau is handling the matter of feed very satisfactorily in co-operation with the Burton Mercantile company of Afton. During the month of January the farm bureau shipped in three carloads of corn. A. H. Linford, the county chairman on marketing, and his assistants took the orders and turned them over to the Burton company who ordered the corn, handling the same for a profit of 15 cents per hundred above the cost price. If stored, an additional 10 cents per hundred was added. The corn was sold to the farmers at about $3.00 per cwt. at Montpelier, Idaho, which was considerably under the local price.

The county agent reports 175,000 pounds of corn handled by the farm bureau for the farmers. He also states that the advantage of handling the corn through a local merchant is becoming more apparent every day. Due to the merchants understanding business methods, the farmers were saved 10 cents on every hundred of the last 110,600 pounds shipped in, above what they saved by buying co-operatively.

The use of verbs manufactured out of nouns is satirized in the story of the city boy who wrote to his brother on the farm: "Thursday we autoed out to the Country Club, where we golfed until dark. Then we trolleyed back to town and danced till dawn. Then we motored to the beach and Fridayed there." The brother on the farm wrote back: "Yesterday we buggied to town and baseballed all afternoon. Then we went to Ned's and pokered till morning. Today we muled out to the corn field and geehawed until sundown. Then we suppered and then we piped for a while. After that we staircased up to our room and bedsteaded until the clock fived."—Edw. B. Hughes in The Writer.

Forget as many disagreeable things as you can.

Western Farm Life

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Nailing an Untruth.

A friend has just handed me a copy of the Colorado Leader which contains a misleading and untruthful article regarding the ownership and management of Western Farm Life. I believe that most of you readers of Western Farm Life are familiar with the establishing of Western Farm Life a little over five years ago and its management since that time. But perhaps it will not be amiss to call a few things to your mind.

In the summer of 1914 with the assistance of Ex-Governor Ammons, Mr. F. P. Johnson and Mr. H. S. Groves I organized the Farm Life Publishing company and established Western Farm Life. The stock in the company was purchased by ourselves, Mr. H. S. Groves taking one-third of the stock, the Record Stockman Publishing company (represented by Ex-Governor Ammons and Mr. Johnson), taking one third. The remaining third of the stock was taken by myself. Governor Ammons was elected president and myself general manager. In the capacity of general manager I had the supervision of all matter regarding the publishing of the magazine.

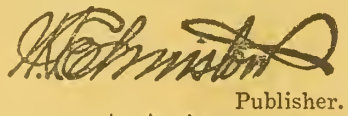
In the fall of 1916 I purchased all of the interests of Mr. Groves and the Record Stockman Publishing company, and thus became sole owner. No change has been made since that time in the ownership with the exception of a block of stock which I sold to Mr. Steinel, managing editor, which gives him now a nice working interest in the publication. As publisher of Western Farm Life I dictate both the editorial and business policy of the publication. An editorial which appeared in the January 15, 1920 issue of Western Farm Life quite clearly sets forth in the last few paragraphs my personal views with reference to the packing industry problem. These paragraphs follow:

> The usual answer to the question as to who fixes the price of meat animals is "supply and demand." To that the producer and consumer have been saying: "We are supply and demand and precious little have we to do with setting prices."
>
> The producer does not even have an asking price when he comes to market with his animals; he takes what the quotations say his meat is worth. The consumer picks his cut from the retailer's counter and pays for it at the retailer's figure. He has no voice in the transaction. The packer says demand fixes the price and he has a way of anticipating that demand by reason of his perfect machinery of distribution. The producer has no such means of anticipating what the demand is to be. He raises, feeds and finishes his animals comparatively in the dark. His labor cost and his feed cost are not factors in the settlement he makes at the yards after he markets his stuff. To him supply and demand are mere illusions. Sometimes they work in his favor, and sometimes not. What he would like is some of the certainty which enables the packer to say what Mr. Morris has said, in effect, "we can't lose either way the cat jumps."
>
> But will government control of the industry provide assurance of a fair profit for the producer? There is a way of settling the question equitably. Cost of production plus a fair profit is all the producer asks; the packer is entitled to a fair profit, and the consumer should have meat at a reasonable price commensurate with its value in relation to other food products.
>
> The public recognizes that the days of cut-throat competition are gone, but unrestricted and unrestrained monopoly is even less desirable than the old order.
>
> We may hope for a solution in the revised Kendrick-Kenyon bill which now provides for regulation by a body modeled after the Interstate Commerce Commission, instead of the objectionable feature of putting unlimited power into the hands of the secretary of agriculture.

It is my aim to have Western Farm Life take up and discuss those things that will aid the farmers and stockmen in producing better crops, better livestock, better marketing facilities, better educational facilities for their children, better social conditions for their families and better homelife surroundings. We believe it wisest to leave the discussion of party politics and mud-slinging to other publications. We believe that in the discussion of the fundamental things here enumerated we will be of the most help. That this policy is the correct policy for us to pursue is vouched for by the success which Western Farm Life has made.

We have today 50,000 good, loyal subscribers who subscribe for, and believe in, Western Farm Life. It is on account of these 50,000 good subscribers that Western Farm Life has been able to grow from a little 16-page magazine to a large 40, 48 and 56-page publication, that is now the equal of any of the larger eastern agricultural magazines. It is due to the loyalty of these subscribers that Western Farm Life is now being published in its own publishing plant and printed on one of the largest magazine presses west of Chicago. It is on account of them that it has grown in less than 6 years from a publication of questionable value to one that is today earning a good dividend on a substantial valuation.

Practically every dollar of earnings have been re-invested in publishing equipment and editorial service betterments. I personally feel that Western Farm Life is doing much to improve and better agricultural conditions and rural life in Colorado and adjacent territory. I firmly believe that the continuation of our present policy along broad and constructive lines will enable us to be of still more value to our readers and all the other farmers and stockmen in the territory which we cover. If I am able to make Western Farm Life helpful to you, if only in a small way, I will feel that my efforts are being well directed.



Publisher.

✦ ✦ ✦

The College Carpenter.

"Another item of interest that your committee has found is the case of the college carpenter. This man is employed to do odd jobs of carpentering about the college. He has to be paid the union wage for carpenters. We find that last year, from January 1, 1919, to January 1, 1920, the college paid him $3,286, which is more than is paid the head of any department in the institution, and so far as we can find out, he has drawn more from the institution than any individual with the exception of the president of the college, the director of the station and the director of extension."

A committee of the faculty of Colorado Agricultural College, in a report made to Governor Shoup on the subject of salary increases, is responsible for the above statement. The professors are not envious of the college carpenter; he is a good workman and they think he earned the money. What rubs is that the carpenter did not set his own wage scale. The union did that for him and the college authorities paid it without quibbling. In fact, they had to pay it, or leave the work undone.

This is not an argument for the unionizing of professors, but it is this same sort of incident that has led elementary school teachers to join the American Federation of Labor. The condition is accepted as an excuse for unionization of the teaching profession. If that comes about it will be a sorry day for this nation; for then the rule of the union will be paramount and consideration of the pupil a secondary matter.

The remedy is adequate pay for the teaching profession, whether of the elementary schools or the colleges. If a carpenter is worth $3,000 a year, a college professor in a technical institution occupying a position for which eight or ten years of training is necessary, is worth $5,000. The Aggie professors would be so much better off with the carpenter's wage that they would feel almost rich. They think they are worth more to the state, however, than the carpenter.

We know nothing beyond what has been published regarding the merits of the controversy between the head of the agricultural college and the faculty, but let this be made plain: Any policy of economy on the part of the State Board of Agriculture, or the executive department of Colorado Agricultural College, that results in the loss to the people of Colorado of the services of qualified instructors and investigators is false economy. The farmers of Colorado want a strong institution; one that builds back to the farm by turning out young men and young women in whom the highest ideals have been developed and who look on agriculture as a dignified calling, worthy of the best that is in them.

Under-paid instructors and dissatisfied professors are poor architects of character for the young people from the farms. Discontent kills all initiative and discontented research workers may bungle many a scientific experiment because they lack the impetus that comes from a sympathetic atmosphere that should surround an institution of learning and should extend from the office of the chief executive down to the janitor's cubby hole—not to forget the college carpenter, who may be fully worthy of his magnificent hire.

President Lory says: "It is impossible to make this raise because the finances of the institution will not warrant it."

Clearly it is the duty of the State Board of Agriculture, of which the Governor is an ex-officio member, to take cognizance of the situation called to their attention by the faculty committee and, in the interest of the farmers and of all the people of Colorado, seek a prompt remedy. If money can be found for the unionized carpenter, it is but just to find it for the un-organized men and women of the faculty who devote their lives to unselfish service in the interest of science and education.

The County Agent.

At early morn he cranks his flivver to make a trip of many miles; and though the wind doth make him shiver, he simply cranks away and smiles. For he must go and do his tasks, and help the farmers organize, he has to order hay and feed and pigs and calves of every size. He spends a day in culling flocks with poultry specialist so wise; and gives advice on growing crops, and household helps for farmer's wives. Sometimes he sticks in snowdrifts deep, or in mud puddles on the road. Sometimes he walks when Lizzie balks; on him is shifted many a load. Week in, week out, he makes his round, his days are one swift whirl of work; he meets each problem as it comes, and not one duty does he shirk. And he's not even free at night, Farm Bureau News he must get out, and articles for press and news, and many a letter he must write. We wonder if he'll ever rest, in this old world or in the next. When he goes to the Golden Gate, old Peter will be surely vexed. He'll say, "We do not want you here, you work too hard for our fold; go down below, where it is hot and help to make that country cold."—T. S. Parsons, Extension Agronomist, Wyoming University.

Experimented on the Cats.

Three school boys carried on a clever experiment in Platte county, Wyoming, where the Home Demonstration Agent, Mrs. Laura Winter is working with the Farm Bureau women and the schools on feeding of children for standard weight and measurement. After hearing the home demonstration agent tell of the experimental work concerning the effect of milk on the growth of rats, these boys tried out the experiment at home on the family cats. One kitten was fed separated milk, the other milk with a tablespoon of cream added. Mother and children both say it turned out just as the demonstration agent said. The cat that had the cream is much larger and stronger than the one that did not. Seeing this result of their experiment, the children are eager to bring their own weight up to standard by drinking more milk.

The Branding Iron

A subscriber writes as an objection to Western Farm Life that the magazine carries too much advertising. If he observes the progress of Western Farm Life he will note that as advertising demands increase, the proportion of reading matter increases likewise. Advertising is news. It is the news about farm implements, appliances, tools, household necessities, of buying and selling opportunities, without which the farmer would be doing business in the dark. Take advertising out of the farm magazines and newspapers and two things would happen: discontinuance of publication because of lack of revenue and reversion of business and farming methods back to the time of our great grandfathers. The subscriber sometimes loses sight of the fact that he is getting his magazine for a nominal sum which in no wise pays for the service and that the advertiser is the fellow who pays the freight.

* * *

They say Ed Foster would print the Weld County News on greenbacks if he could get enough of them to take care of his circulation, but at present the price is prohibitive; in fact, they come nearly as high as print paper.

* * *

Coal has declined lately. We half suspected that, with the peep of the first anemone and the opening song of the robin the fuel lords would give us a little reduction. Another case of nature's inexorable law of supply and demand. The greater the need the higher the price. Not every business is run that way, or we would have to increase the price of the magazine because our subscription list is growing.

* * *

The National Lumber Dealer's Association announces that there will be no advance in lumber prices for six months, so those who have been waiting for higher prices might as well start to build. We hope we got this announcement straight, although the last part of it reads queer.

* * *

Some of the Aggie professors at Fort Collins are kicking because the college carpenter gets more pay than they do. Perhaps another proof that it pays to saw wood and say nothing.

* * *

For Sale—One Ford car with piston rings; two rear wheels, one front spring. Has no fenders, seat or plank; burns lot of gas and hard to crank. Carburetor busted half way through; engine missing, hits on two. Three years old,—four in the spring; has shock absorbers, 'n everything. Radiator busted,—sure does leak; differentials dry,—you can hear 'em squeak. Ten spokes missing, front all bent; tires blowed out; ain't worth a cent. Got lots of speed; will run like the deuce; it'll burn either gas or tobaccer juice. Tires all off,—been run on the rim, but a darn good Ford for the shape it's in.—See Will Rosecrans.—Ashland Gazette.

Unlucky.

Some of us never do have any luck. Now, in our boyhood, for instance, there never was a scarcity of teachers.—New York Morning Telegraph.

"mar. 20"

If the label on your magazine reads "mar. 20" your subscription expires this month. You, no doubt, intend to renew. By doing so at once you not only extend us a big favor, but will make sure that you will not miss a single issue of Western Farm Life.

Send us $1 for a two-year renewal subscription, or $2 for a five-year renewal subscription.

We appreciate your past subscription and hope you appreciate our magazine enough to renew now.

After you have renewed, watch the address label on your paper to see that you have been given proper credit.

WESTERN FARM LIFE,
Denver, Colo.

Comment by Farmer Putnam

OUR MISSOURI FRIEND RIDES ON THE BURLINGTON'S POTATO LECTURE TRAIN.

FUR a coupla years I hired out to a railroad company to travel around in a private car and write about the farmin' country and the farmers through such states as Iowa, Missouri, Arkansaw, Oklahoma, Texas, Louisiana, Kansas, etc., and in that time I took on fat and got to be a kind of a plutocrat which didn't set well, because I was raised on the Democratic ticket in Missouri. Well them was the days of real pleasure to which I keep a lookin' backward to, seein' myself with my feet cocked up on a table, a settin' back on a green velvet bench, which was a sleepin' berth at night and a soft seat fur the daytime, eatin' juicy steaks one inch thick by seven wide, smothered with Bermudy onions, nuthin' to do but to stroke my whiskers and wonder what kind of country we'd wake up in tomorrow. So when I got a invite from the Burlington railroad to go with 'em on their potato special, all them old memories come back to me and I sez to Josephine:

"Well, I'm off fur one of them railroad lecture tours on a private car; my don't you wish you could go too?"

"Tom," she sez, "I think you'll git fooled. They don't carry no excess baggage on them trips nowadays; if they offer to let you go you'll pay your way and work too."

Well, she called the turn alright. I jined 'em at Fort Morgan and I set my grip down and sez to the darkey: "I reckon you kin put that in one of the state rooms, fur I'm goin' with this here train and remember I'm from Missouri and I don't take no sass offen colored folks."

Then I went to the exhibit car and sez to Lamson and Reed, them experts fur the railroad company: "Well, I'm here, ready fur dinner. When do we eat?"

"Eat," sez Lamson, "this ain't no dining car; we're out fur business. Everybody works on this train. You're a potato expert ain't you?"

"So I am," sez I, "have you got any expertin' to do?"

"Yes," he sez, "I wish you'd fold them circulars and when you finish that why help us tie up packages of Triumph seed in ten pound lots. We sure need your expert assistance."

Well, I seen right away that this wasn't to be no joy ride, so I sez to myself I'd work hard to git up a good appetite and git even with them fellers fur puttin' me to work. Spuds was trumps all the time, whether we was foldin' bullétins, wrappin' up seed, showin' the farmers through the exhibit car, or playin' pitch—which was allowed when the train was travelin'. It was a new game fur me—kind-a like puss in the corner; anyhow, you had to leave a little somethin' fur the kitty under a saucer. I didn't see the kitty the hull time I was on the train, but I reckon she was in the kitchen and the cook fed her.

We had a big crew of experts includin' besides them railroad fellers, Prof. Sandstone of the Agricultural college and Prof. Locklin also. Both of them is high salaried men, but they don't git as much as the college carpenter. Of course they don't earn as much. The carpenter uses his hands and his head too, but a professor only has to use his head. We're a-livin' in a practical age.

My old friend Will Paul was along too. He's growed spuds, so he knows what he's talkin' about. He growed 'em up on the Divide in El Paso county which has got spud soil and climate. The spud is like a human bein'; it'll grow most anywhere but it likes some countries better'n others and Colorado high altitude is it's favorite habitation. I learned a lot about potatoes from them experts and I got some new facts—more or less—which I want to tell you-all about.

Prof. Sandstone sez the potato ain't no root; it's a under ground stem. It was first growed, we think, in the Andes mountains in Peru, high up where it's cool. I reckon it used to grow on top of the ground in some hot country and the birds or Indians carried the seed to a cold country and it had to hide under the surface to keep warm and by and by it become a regular cold weather plant. It don't like hot weather. I know because I've seen it grow down south in January and February, while it won't grow down there in July or August, but just wilts. Now up in our mountain country it behaves like it was at home; likes good warm sun durin' the day if it kin cool off at night and will stand lots of rough weather in fall, just so it don't git cold enough to freeze the tuber. When we got a plant like that just made to order fur us farmers we ought to grow it, providin' we got good potato soil. Any kind of soil will do that's well drained, but sandy loam is best. (Sandy loam is the kind that is found on all farms listed with land agents fur sale. They don't seem to handle no other kind).

Well I ain't a-goin' to lecture on spuds, but I want to give a pointer or two on this here certified seed business. That's seed with a college degree, meanin' that its been vaccinated ag'in blackleg and other diseases such as fusium, rhicksocktonium, scab and other ailments that the spud, like mankind, is heir to.

The thing to do to prevent the diseases is to pizen the seed potatoes before plantin'. They put corrosing sucklimate in a barrel, 30 gallons of pizen to 4 ounces of water and soak the seed in this. This gits the spuds so deadly pizen that them disease germs that attacks it in the ground is killed instanter. I asked Prof. Sandstone if this was the theory of it and he sez: "That's the theory alright Putnam, and you kin say—but don't quote me—that it kills so many millions of bacterias in the soil that the dead germs adds humus to the soil, increasin' the organic matter and the water holdin' capacity of the soil at the same time that it kills the bugs."

"My," sez I, "ain't science wonderful!"

Well, the next day we went on up the Burlington branch between Sterling and Cheyenne, but they wasn't much travel. Sterling people has been stayin' closer to home in the last few months then they used to. We traveled along easy like, stoppin' at Logan, Willard, Stoneham, Buckinham, New Raymer a few minutes and makin' a long stop at Keoty. We got a warm reception there because the farmers wants to grow seed potatoes fur the Greeley district. Keoty has got a live bunch of dry landers and they all bought sample packages of them certified Bliss Triumph potatoes from Lamson to try out fur seed. Only 10 pounds was sold to each farmer and he has to make a report to show what luck he had with 'em. The Triumph is a kind of a purplish spud, none too good lookin' but a early riser and a quick grower. They want 'em in south Texas fur plantin' in January and they dig 'em about April and sell 'em to the northern people who'll pay fur 'em by the piece like eggs—and about the same price per dozen—just to say they had new potatoes.

Fur the Greeley district they want Pearls or somethin', else that'll produce at the rate of one spud per meal. They been sendin' out to Minnesota and Wisconsin fur seed every year, while right out on the plains 30 to 50 miles east of 'em the dry land farmers kin produce strong vigorous seed that's better then northern grown. There's only one time in the year that a Greeley potato grower will admit that better spuds kin be growed elsewhere and that is when he wants seed. I reckon that's alright too, because fur table use Greeley potatoes is fine, but bein' irrigated they don't make as good seed. It weakens the vitality of a spud to give it such easy conditions. It's like a human; put him out in a rigorous climate and you git a feller full of pep. Let him live in luxury and he gits to be no account and lazy.

Well, from Keoty we went on up to Carpenter, Wyo., where it was snowin' and blowin', but that didn't keep the farmers away. They filled the exhibit car and listened and asked questions and give us information about their spuds. They been growin' mostly Ohios and blue potatoes, but they want to git in on the seed game too, because they got a good potato soil. After leavin' Carpenter we passed through the Campstool ranch and next the Wyoming Hereford Corporation, where we seen them white face cattle down in the bottom pastures, livin' outdoors and growin' strong and vigorous like the spuds. By the time we got to Cheyenne it was blowin' a gale—which it generally does in Cheyenne.

They put on a new lot of talent includin' T. S. Parsons of the Wyoming University. Prof. Parsons kin talk potatoes, pumpkins or poetry—it's all the same to him—and he knows Wyoming from Pine Bluffs to Cody, so I got off and come back home.

Thos Jefferson Putnam.

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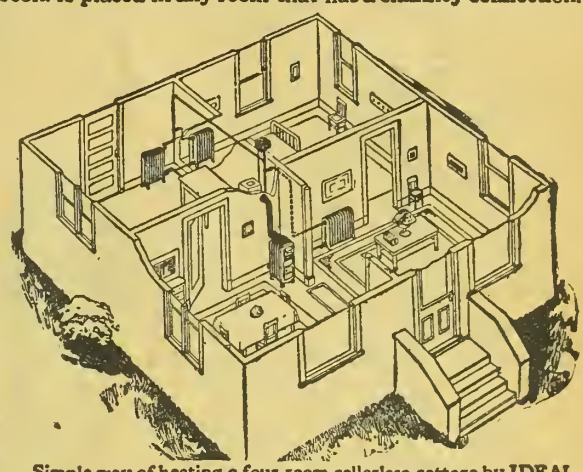

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Must Build On Line.

If A builds his fence, on his own land, clear along a mile of fence between A and B, does B have to build his or can he connect his fence on A? And can you drive stock off your place peaceably or not? Can you turn out mules that will kill calves on the range?—M. J. H., Bent county.

It does not make any difference where A builds his line fence. B must put his on the line if he expects to have a legal division fence. The solution of the problem is for A and B to get together on the proposition. You have a right to drive stock off your place whether you have a fence or not. There is no law in the state to prevent turning mules on the range.

Hog Raising Suggestions.

I am thinking of trying to start to raise hogs in a small way and work up as my capital is small. Thought I would ask what would you advise my trying, sheep or hog raising? How many sows and boars would it be necessary to have and how many acres would be required to raise the stock on? Can you raise enough corn on 50 acres to raise 50 hogs? I was thinking of going to Arizona where it is warm and try to locate some cheap land.—J. W. C., Long Island, N. Y.

I would say that for a man with small capital there is no other phase of livestock farming that brings quicker returns than the hog business. One point that is important, however, is that success depends upon some knowledge of the handling of the hogs; for that reason a wise plan to follow would be to start in a small way and gain experience as you go along and enlarge your herd. From one to three sows would be ample to start with. For that number I would suggest bred gilts or sows as this will do away with the necessity of your purchasing a boar the first year. The relationship between acreage and number of sows to keep depends upon the system of farming one desires to follow. It is very important that some form of succulent feed be provided in the nature of rape, alfalfa, clover or root crops. These succulent feeds replace a great deal of grain which is, at the best, very expensive. You ask if 50 acres of corn would provide feed enough to raise 50 head of hogs. Fifty acres could be handled in connection with this industry to a far better advantage if a variety of crops were grown. Ten acres of corn with an ordinary yield would be ample to take care of 50 head of hogs. In connection with 10 acres of corn 4 or 5 acres of good pasture of alfalfa, clover or rape would be advisable. While grazing the hogs on this pasture feed them a limited quantity of grain. This would give the balance of a 50 acre farm for some other form of cash crop. Under present conditions I doubt the advisability of one placing all his efforts in growing hogs alone and feel that it would be far more advisable to have some other cash crop. Of course, the system of farming will depend largely upon the locality you select. No set rule could be given to fit all conditions. Economy in hog production rests largely in growing them in connection with the general farming conditions. Hogs will utilize waste products from general crops grown and thereby convert waste products into cash in a better way than any other form of livestock. This information is of a general nature but will possibly give you an idea of how to proceed. I would suggest that you write to the Division of Publications, U. S. Dept. of Agriculture, Washington, D. C., and ask for bulletin No. 874 on the subject of "Swine Management."—H. A. L.

Meat "Kernels" Are Edible.

In the fat around the hog's head I often find small, round, lean or meaty balls, or "kernels" of meat as I have heard them called. Should these be cut out or are they healthy and all right to eat?—R. C. O., Phillips county.

These meaty balls or kernels of meat are found in the neck or jowl of the hog, are found in all carcasses. They are healthy and need not be removed. The jowl is sometimes used for cooking with beans or kraut or may be rendered into lard.—H. A. L.

Sunflowers Vs. Corn Silage.

I would like to know what the relative value of Russian sunflowers and corn or cane for silage would be. How much Russian sunflower seed do you plant per acre and where can I get the seed? In using Russian sunflower silage what hay or feed should go along with it to make a good dairy ration?—J. H. L., Arapahoe county.

Tests made so far indicate that sunflower silage is almost as valuable as corn silage from the standpoint of nutrition. Like corn silage it is not a complete ration and must be fed with balancing feeds for dairy cattle, such as alfalfa hay. The particular advantage so far developed is the greater yield of tonnage per acre when compared with corn. In many sections Russian sunflowers have yielded two or three times as heavy as corn on a per acre basis. However, it must be borne in mind that these tests have largely been made on irrigated land. Whether Russian sunflowers would do as well as corn on the non-irrigated lands of eastern Colorado, is a matter of conjecture. We should like to see a number of farmers give sunflowers a fair trial in comparison with corn. They do not need as long a season to reach the silage stage and may, under some conditions, be the preferable crop to grow for silage.

Amber Cane For Hay.

When amber cane is planted or sown for fodder is it advisable to cut the field when it is from knee to waist high? That is, will the stubble grow up again and make another crop as in the case of Sudan grass? Will the first cutting be more liable to be poisonous to stock? —W. L. V., Weld county.

It is not advisable to cut cane until

Service

THERE is undoubtedly no public service that touches directly so many individuals and enters so completely into the social and commercial life of the people as does telephone service. More business is transacted over the telephone than there is through face to face conversations. More social activities are planned, more invitations sent, more engagements made or cancelled by telephone than by any other means.

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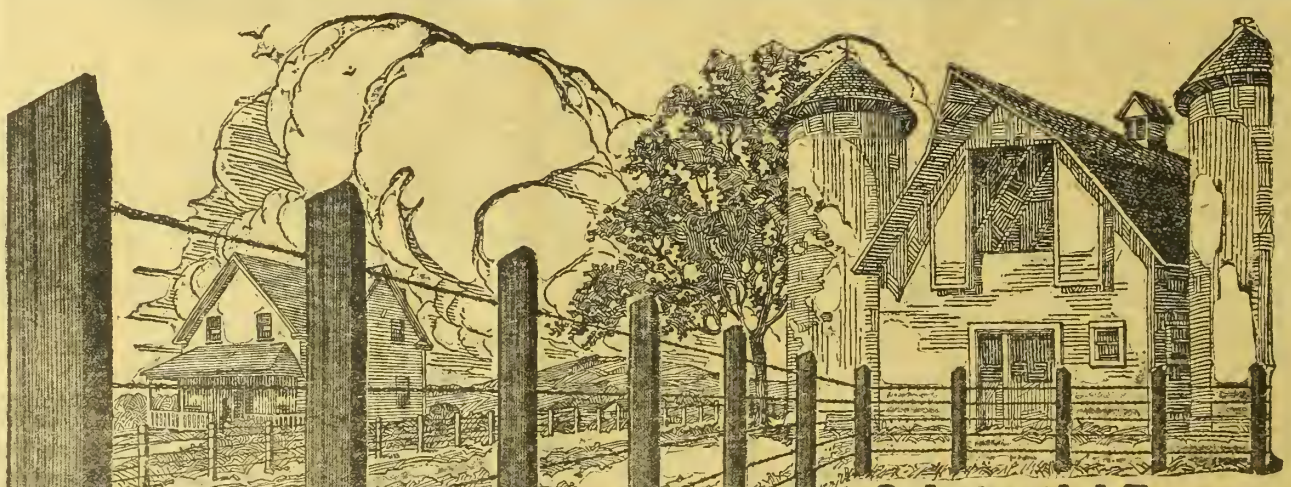

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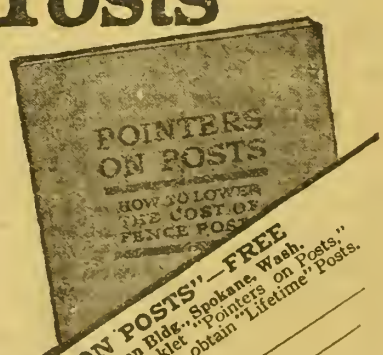

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it is nearing maturity; that is, well headed out and the seeds in the hard dough stage. When cut earlier it makes a very washy, unsatisfactory quality of hay. In a long and favorable season cane may be cut early in its immature stage and the stubble will grow up and make another crop of hay if not caught by frost. However, it is not as quick growing a crop as Sudan grass and cannot be relied on to make two crops a year. There is no danger in stock poisoning unless the second growth is pastured. Stunted second growth either by frost or drouth often develops pussic acid poisoning which is fatal to livestock. The same is true of second growth Sudan grass. As a general proposition both Sudan grass and amber cane on dry lands serve best when allowed to mature one crop of hay.

Eradicating Morning Glory.

I will appreciate any assistance you may be able to render me in ridding my garden of wild morning glory vine. I've tried everything under the sun—grubbing only doubles its growth—salt won't feaze it neither will ashes. Do you suppose white clover will choke the pesky stuff into oblivion?—H. O. B., Eagle county.

You say you have tried grubbing but that this doubles the growth. All we can suggest is to try, try again. You can get rid of it only through persistent effort in grubbing out the rootstocks and keeping down the top growth. The underground stems or rootstocks increase in size from year to year if they are let alone. The only way of starving them out is by cutting off the top growth immediately after it appears. Prof. Robbins in his bulletin on control of Colorado weeds says, "It is a common experience that one may, by a thorough cultivation kill all the top growth of a perennial weed and find that the plant comes up thicker than before. A second thorough cultivation may be followed by like results. The farmer, of course, is inclined then to become discouraged. He was on the right road but stopped too soon. Each time that top growth was removed and new shoots sent forth reserve food in the rootstocks was used up. What is needed in the eradication of a well established perennial weed is persistence and patience. Cultivation frequent enough to keep down all leafy shoots and no stopping until the object is attained." In getting rid of small patches of wild morning glory the best method is spading up the soil, raking out and burning the under-ground stems and hoeing off every sprout as soon as it appears during at least two seasons. On farms where this weed has gotten a good hold it has sometimes been necessary to leave the ground bare for a season or two and constantly cultivate to keep down all top growth before the wild morning glory was finally eradicated. No chemical spray or application has been found successful nor do we think that you could get rid of it by planting sweet clover.

Control of Cutworms.

I have 70 acres of ground that was plowed deep last spring and sowed to wheat. The wheat came up and the cutworm took every spear of wheat. Later in the summer the Russian thistles came up and the ground is covered. Now the question is did the cutworm miller lay eggs in the same ground last summer? Do you think there is any danger in sowing this ground this spring? The ground was not touched last summer and fall. I would like to sow this 70 acres to wheat this spring. I intended to prepare this by raking the thistles, then disk the ground and drag and then let it lay for about 2 weeks to start all the thistle seed. Then go over it with a weeder and cultivate the ground and sow wheat at once.—A. A. H., Montana.

It is very likely that the ground is infested with cutworms which will attack vegetation as soon as it comes up. If this ground had been plowed last fall the chances are that you would have no trouble with the next crop. The moths lay their eggs on the lower leaves of grass or weeds or any vegetation which is on the ground during the fall. Young worms feed on this vegetation during the fall and in winter burrow into the ground for protection. In the spring the worms come out of the ground and attack almost any young plants they find at the surface. The best preventive measure would have been early fall plowing and harrowing to keep the field bare until winter set in. However, as the worms are probably present in the fields some other measures will have to be adopted now to prevent their taking possession of the next crop. Your plan of working the field thoroughly and deeply is probably the best thing that can be done now. While you are going over the field be sure to get all of the rubbish and weeds from the borders as such collections furnish the best kind of shelter for the worms over winter, from which they later invade the growing crops. Examine the field for presence of the pest in the spring. It is well to lay bits of wood or shingles in different places and look under them every few days for worms. You can thus soon determine whether the field is infested. If you find that there are worms present then it will be advisable to use an arsenical bran mash, the same as is used for killing grasshoppers. The U. S. Department of Agriculture gives the following directions for preparing this: "Paris green, arsenoid, white arsenic, or in fact any arsenical can be used for poisoning this bait, and in its preparation, on account of the weight of the poison and the fact that it soon sinks to the bottom of the water when stirred, it is best to mix the bran with water and sugar and then add poison. The proportions are two or three ounces of sugar or a similar quantity of glucose or molasses to a gallon of water and a sufficient amount of bran (about a pound per gallon) to make, when stirred a mixture that will readily run through the fingers." About one pound of poison should be used for every fifty pounds of bran. Scatter this preparation over the fields late in the day, preferably when the ground is bare, either before the seed is planted or before it comes up. A dry mash composed of Paris green 1 lb., equal parts of bran and middlings 20 lbs., is recommended by Dr. Forbes. Either of the bran preparations are dangerous to fowls and these should be kept off the fields for several days.

Inspection of Boiler.

I have an old steam tractor which was used before I purchaed this farm, for running the pumping plant. To whom shall I apply to have the boiler examined?—R. N. W., Logan county, Colo.

The matter of examination of steam boilers should be taken up with W. W. Crowley, state boiler inspector, Capitol Building, Denver.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

I have a cow that has a hard spot on the end of one of her teats and a small scab forms on the opening each time after milking and is very hard to milk; also there is a hard lump in the bag at the back end. I have been using camphor and turpentine on it but have not been able to do much good so far. Can you advise me what to do?—C. M. S., Arizona.

The "hard spot" on the end of the teat, would in itself cause no suspicion of serious infection of the udder, but there being also a hard lump in the udder, gives us reason to strongly suspect either actinomycosis or tuberculosis. The tuberculin test should be given and in the meantime the milk should not be used. Nothing will be gained by examination of the milk. The milk from a tuberculous udder is extremely dangerous for hogs and only slightly less so for calves and for the human. Among people children are presumed to be more susceptible than adults. Possibly the tumor is an abscess which will discharge with the milk through the natural opening in the teat and ultimately recover. In any event the milk should not be used. Tumefactions of the udder should always cause apprehension for in their presence the secreting tissue of the udder is abnormal. These conditions are mostly caused by infection and even though the micro organisms may not be capable of causing disease in themselves, their toxins and inflammatory products escape with the milk and may produce serious consequences.—G. H. G.

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OUR family gets tired of the old-time ways of curing meats, particularly in brine. They like the cured and smoked sidemeat, hams and shoulders very well, but there is always more or less waste or trimmings and this grieves us housewives greatly.

I have read many articles on canning meat of different kinds, but have always felt a little doubtful about the results. I canned six quarts in a pressure cooker once, following directions carefully, but for some reason they all spoiled. I know of no one else who has had the experience. Most of the writers say use steam pressure, for the hot water bath, reaching but 212 degrees is not hot enough to thoroughly sterilize meat.

One day I was working with fresh pork and wishing we would not have to "eat fast" and even then have to "spoil some of the nice fresh meat with brine" when I had an inspiration. These are the thoughts that came to me: "Why not can meat in the oven and get pressure that way? I bake bread at a temperature of about 340 degrees to 350 degrees. My oven thermometer stands at 6½ at bread baking heat. If 6½ equals 340 degrees, then almost 5 will equal 250 degrees to 260 degrees, or from 15 to 20 pounds pressure. I sterilized my cans in the oven so I know the high dry heat will not crack them. But I fear rubber will not stand so much dry heat. Perhaps the self-sealing lids will do. I will try."

So I placed a can rubber and a self-sealing lid in the oven. At even less than the required temperature the rubber became hard and brittle. The wax in the self-sealing lid remained pliable. I raised the temperature until the wax in the self-sealing lid raised up in bubbles, but when it cooled it was still pliable, so I knew it would not fail me.

I then filled several cans to the neck with sausage, placed the self-sealing lids on them and tightened the screwbands until they were just slightly tight, but I did not force them one bit. These cans I placed in a bread pan for ease in removing from the oven. Having placed the grate on the bottom of the oven, I put the pan into the oven on the grate to give a circulation of air. Perhaps this was not necessary, but since we use a rack in the cold pack method, I thought it safest to use one here. I cooked the sausage for one hour at about 260 degrees, then removed the pan from the oven, carefully avoiding any draft. If the bands seemed very loose I tightened them just a little, always remembering that the wax was very soft and could easily be pressed away so it would not seal perfectly.

The next morning these looked so good that I filled more cans, some with sausage, some with ground cooked meat, some with ribs cut in short lengths and some with back-bone. The bone meats I cooked an hour and a half, thinking it would probably require a longer time to thoroughly sterilize the bone because it is so dense. It would take this long to sterilize chunk meat also.

I was short of cans, not having opened much of my canned goods, so took chances on some doubtful ones. One can had a suspicious looking place in the neck, which might or might not be a crack, and one had a similar place in the bottom. However, I filled them "just to try."

Result—there was an explosion and about half of the meat from the one with the defective neck was all over the oven. The bottom just cracked out of the other.

On one can I had slight trouble with the screwband and the lid blew off. This was back-bone and was thoroughly cooked, so we had a chance to sample it. We thought it much better than that cooked in an open kettle.

The one objection to the sausage is that it breaks into small pieces when being taken from the jar. If we had cans with straight sides and no neck, the sausage could be slid from the can whole and then sliced. I do not know if such cans are made.

Altogether I have 27 quarts of pork. Not one shows any signs of spoiling and they look "good enough to eat." I have opened three cans and the meat is certainly a treat. Since pork can be successfully canned this way, I am sure other meat can be so canned. If this method can be successfully used, it will save the price of a pressure cooker, yet give every housewife its equivalent without having an extra utensil to clean and store away, when space is at a premium as it is in so many country homes. Then, too, meat can be cared for this way at any time of year, while by old methods it must be done while the weather is cold.

I wish this method might be extensively tried and reports sent to Miss Erma Douglass, care of Western Farm Life, Denver, Colo., or to Miss Miriam Haynes, care of State Agricultural College, Fort Collins, Colo. Either and both of these ladies are very anxious to help us, so let us feel free to consult them. They really want us to do so. That is why they hold their positions.

I recall the story of a mother who was called away from home for a short time and was obliged to leave the children alone. She cautioned them about many things and ended by saying, "Now don't put any beans in your noses." The children had never thought of such a thing, but it impressed them greatly, and they wondered how it would seem. At last they began to hunt for the beans and when they found them, tried the said trick. I was going to give some dont's, but for fear it will have a bad effect, will change and give some do's instead:

Use self-sealing lids; they can be used on Mason jars.

Use cans that are not doubtful.

Use cans that the screwband fits easily.

Use flour to test the oven if you have no thermometer. If the flour placed on the bottom of the oven turns slightly yellow, the oven is right.

Use a bed of coals for even heat. Cans might not stand too high pressure, so be careful.

Fill cans only to the neck, but pack tightly.

Sterilize ground meat one hour.

Sterilize chunks and bony meat 1½ hours.

Keep from drafts while hot.

Store in dark to preserve color.

Skim Milk Vs. Tankage.

Hog feeders everywhere will be interested in a skim milk test on rationing hogs, completed recently at the Ohio experiment station. Hoard's Dairyman makes the following report on the experiment:

The superiority of skim milk over tankage as a supplement to corn for feeding pigs has been brought out in experiments at the Ohio experiment station. A test completed some time ago compares corn alone; corn, 9 parts, tankage 1 part; corn 1 part, skim milk, 3 parts; corn 1 part, skim milk 5 parts and corn and skim milk ad libitum.

Corn and skim milk at the rate of 3 pounds of milk to 1 pound of corn made the most economical gains. The experiment was conducted with pigs whose average initial weight was 43 lbs., in practically all cases. The average daily gain when corn alone was fed was only .35 lb.; when corn was supplemented with tankage at the rate of 9 parts corn to one of tankage, the gain was .89 lb., daily, and where the ration consisted of corn 1 part, skim milk 3 parts, the average daily gain was 1.3 lbs. With corn and skim milk, 1 and 1, the daily gain was .95 lbs.; corn and skim milk, 1 and 5, 1.4 lbs. Where the pigs were given all the corn and skim milk they would consume the daily gain was 1.6 lbs. With corn and skim milk ad libitum, the daily gain was higher than any other proportion of skim milk, but the cost of feed per 100 lbs., gain was too high to make this lot the most profitable.

It is interesting to note the amount of feed consumed under these different combinations of supplements. Where no supplement was fed, 685 lbs. of corn were required for 100 lbs. of gain. Contrasted with this is the comparison for corn 9, tankage 1, which required 350 lbs. of corn and 39 lbs. of tankage for 100 lbs. of gain. When the ration consisted of skim milk 1, corn 1, 330 lbs. of corn were required for 100 lbs. of gain; corn 1, skim milk 3, 256 lbs. of corn and corn 1, skim milk 5, 233 lbs. Where the corn and skim milk were fed ad libitum, 200 lbs. of corn was required.

While the cost of feed and the price secured for the pigs per pound varies in many sections, the cost of feed per 100 lbs. gain in this experiment is interesting to note. The prices of feed used in this case were: Corn, $1.68 per bushel; tankage, $120 per ton; skim milk, 60 cents per 100 lbs., and hogs were valued at $16 per cwt.

The cost in producing 100 lbs. of gain when corn was fed alone was $20.85; a loss of $8.38 was recorded for the 5 pigs which were fed for 15 weeks, in valuing the total gains over the cost of feed. For corn 9, tankage 1, the cost per 100 lbs. gain was $12.84; the gain was $14.91 for the period. The costs and gains for the other proportions of corn and skim milk are as follows: Corn 1, skim milk 1, $11.89, resulting in the value of gain over the cost of feed of $20.62 for the feeding period; corn 1, skim milk 3, $12.41, the gain being $35.59; corn 1, skim milk 5, $14.02, a gain of $14.43 for the feeding period; corn and skim milk ad libitum, $13.77; this gain was $18.62.

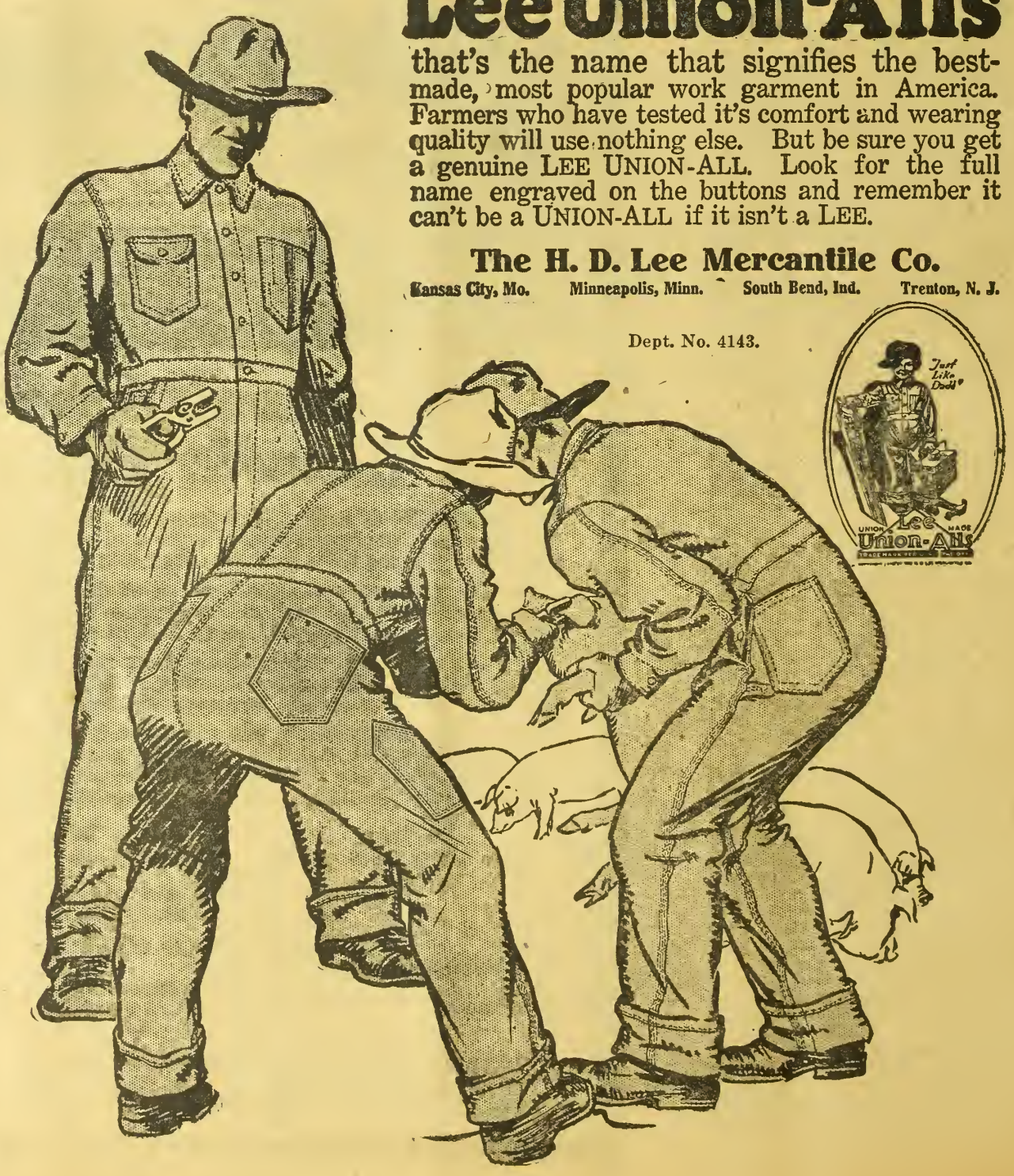
Conscientious Dentist.

The youth seated himself in the dentist's chair. He wore a wonderful striped silk shirt and an even more wonderful checked suit. He had the vacant stare that often goes with both.

"I am afraid to give him gas," the dentist said to his assistant.

"Why?"

"Well," replied the dentist, "how will I know when he is unconscious?"—The American Legion Weekly.



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Clark's Travel Letter.

Mr Thomas Jefferson Putnam,
Salem, Colorado:

Dear Tom—I have just got home after a series of meetings in the southern part of the state. I arrived at Rocky Ford the day after the corn meeting and show. The show was a great success and was attended by hundreds of people. Otero county is destined to become a great corn growing section. One farmer, I have forgotten his name, raised over a hundred bushels to the acre on 15 acres and a number of other farmers did nearly as well. Philo Blinn made a test of varieties last year and here are some of his yields per acre:

Golden Glow—87 bushels corn and 18 tons silage.

Finks Tribred—84 bushels corn and 18 tons silage.

Silver Mine—82 bushels corn and 18 tons silage.

Reid's Yellow Dent—80 bushels corn and 16 tons silage.

Minn. No. 13—35 bushels corn and 5 tons silage.

White Australian—43 bushels corn and 8 tons silage.

The Arkansas Valley soil is a little sandy and when it is well manured and tilled its productive capacity is unlimited. Dairying and the winter feeding of steers and sheep must go hand in hand down there. The fertility can not be maintained to a satisfactory point in any other way.

We held meetings at La Junta and Rocky Ford and while not many farmers attended they sent their sons and for four days we calculated rations and judged livestock. This work is helping the farmer some we think; at least they say so. One of them last year saved $3.50 a day on a small bunch of steers after taking the course. Another stated that it has saved him hundreds of dollars and that he is using it all the time.

At La Junta a young Mr. Dickson kept an accurate record of his cows during January and at one of the meetings he gave us the results. One cow produced 1359 lbs of milk and gave a net profit of $32.49; another produced 1536 pounds of milk and gave a net profit of $31.97. Mr. Dickson feeds corn silage, beet pulp, alfalfa, hay and grain. The feed cost per cow per month about $17.00. The milk was sold to the condensery at $3.60 per hundred.

After leaving Otero county I went to Prowers.

Dairying in that county is making rapid strides. There is a cow testing association and many farmers are patronizing it. It is the salvation of the industry and more farmers should be taking advantage of it. Through this association farmers are learning the cows that pay best. Joe Boetta had a profit of $23.87 per head during January on 16 cows. His average daily milk flow per cow was 32.5 pounds and the fat test was 3.2 per cent. The Leonard herd did about the same, but is composed entirely of cows with first and second calves.

Talk about milk checks Tom! Why, Jens Jensen had one that amounted to over $1,200 for January and Leonard with a bunch of heifers had one of nearly $600. Those people are certainly doing well with cows.

Last year we arranged a livestock shipping association at Holly and a shipment was made soon after. The saving to the farmers was enormous and they were highly elated. But what do you suppose happened? Some people who had supported the shipping association thought they saw profit for themselves and went in competition to it. The result was that they divided the farmers in their support of the association and injured it. What inconsistent mortals we are! Here is a case where the farmer tried to practice the thing that he condemned in the other fellow. The association will come back in time and be stronger than ever. I am unable to see, Tom, any difference between farmers and other people. They are all made on the same plan and react in the same way to the same conditions, be they farmer or merchant.

I have just returned from Morgan county, where I went to hold a few meetings but did not do so on account of sickness and the farmers being busy in the fields. Morgan county, like all other parts of the state, is going through a great land boom. Ben Pierson who lives 5 miles west of Ft. Morgan, informed me that he refused a rental of $70 an acre for 30 acres. He got a yield of 200 sacks of potatoes to the acre and sold them at $2.50 a hundred. From his 30 acres he netted $7,000. But Tom you know as well as I do that a favorable combination of conditions does not occur often enough to make such returns a certainty. I recently read a report to the effect that 20 per cent of the farmers in the United States did not make wages last year. That may be true but farmers bought more automobiles last year than in any preceding year and I cannot help but think they feel pretty independent.

While at Ft. Morgan I called upon Sergeant & Son. They are breeding Percherons and a finer lot of horses I never saw. They have the large, heavy muscled, up standing type that can compete with the tractor. Some of the two year olds weigh 1800 pounds and are as active as cow ponies. Mr. Sergeant has faith in the horse and he is showing it by buying all the good type mares he can find. Here's to his luck and may he fully realize the height of his ambition.

There are several farmers feeding steers and sheep near Ft. Morgan. The sheep feeders are feeling fine but the steer feeders are not so gay. R. L. Ripley is feeding a bunch of 60 Hereford calves and Fred Kufoner is feeding 80 head of steers. Both of these men are making records of their operations and in due time I will give you the results.

Well, Tom, I must not fail to mention the attitude of the people in the Arkansas Valley toward the Japanese who are coming in there and threaten to create another California condition. The white people down there are becoming bitter, but they are to blame for it all. The white man likes money, money, money and he invited the Jap to come and is encouraging him to stay so that he can make more money. If the white people would quit selling and renting land to the Jap he would go to other pastures and the trouble would be at an end. Tom, this is a fine point to decide, has any class of people in this big free country of ours a right to establish in our fair land the population of another nation whose standards and deals are far below our own and threatens to make serious trouble for future generations? I think not. Lawyers on the constitution may not agree with me, but it is only a question of foresight and common sense. I wish, Tom, more of our people had less greed and just common ordinary horse sense and there would be more human sincerity, righteousness and happiness in the world. We are getting farther away from the animal nature but we have some distance yet to travel before we reach perfection.

We hear the same question discussed in Larimer and Morgan counties but it is the Russo-German and not the Jap. I see no solution to this question other than not to do business with the people we object to inhabiting our portion of the globe. So long as we invite such people to come and capitalize them we must expect them to do just as they are doing.

Kind regards to Josephine and the children.—R. W. CLARK.

Children Make $57,904.61.

The 2889 Idaho boys and girls who completed their club work in 1919 reported a production amounting to $95,992.31. The cost of production was $38.087.70, leaving them a net profit of $57,904.61. The largest project was canning, in which there were 111 clubs, with 934 members reporting their work completed. They canned fruit, vegetables, and meat worth $34,909.67, at a cost of $17,181.95. Their net profit was $17,727.72.

Approximately twenty cows were tested for tuberculosis in one week in Fremont county, Idaho, through co-operation of the farm bureau, with Dr. J. C. Walker of the United States bureau of animal industry, and no reactors were found.

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Dairying and Hog Raising

H. A. LINDGREN

All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, WESTERN FARM LIFE, Denver, Colorado.

Prepotency in the Dairy Sire.

The success of the dairy business often depends on the power of the sire to transmit his dairy characteristics. If the bull is weak in this respect the time during which he is used is a loss to the business. It is often the case that the bull comes from ancestry that shows very little production. In most cases this kind of a bull will not improve the herd. What is wanted in the sire is a strong tendency toward higher production in the heifers of his get.

The question of registration comes in here. The fact that a bull is registered does not always prove that he will improve the herd. We should go further than this. He should have animals back of him that show that he is from a good producing strain. The surest way to get an animal that is known to be able to transmit the right kind of dairy characteristics is to select one that has daughters of producing age. This method, however, is usually more expensive, as the owner of a bull that has been proven is reluctant to sell him unless he gets what he knows the animal is worth.

In selecting the younger bull try to get one that has several generations in his pedigree which show good production. One will usually get something by this method that will be sure to improve the herd. Too many buy bulls simply because they are registered and do not take into account the fact that this is only a part of the story.

No other data we have shows so well the value of a prepotent sire as the figures gathered by Prof. Eckels of the University of Missouri. His experiments go a long way to prove the assertion that "like produces like."

Quoting from the report of Prof. Eckles: "In 1884 the Missouri Agricultural College bought four registered Jersey cows and the entire herd we have today are descendants from these cows. Of course, herd bulls have been purchased from the outside but no female has been bought. Since 1892 complete milk and butterfat records have been kept of every cow. Up until 1901 practically every female was retained in the herd regardless of her dairy qualities. These conditions give an opportunity to study the effect of sires which can hardly be duplicated anywhere. The first bull used was Missouri Roiter, a son of Bachelor of St. Lambert. There is no record indicating the dairy quality of his dam. In fact his sire is the only animal in his pedigree known to be a strong breeder. This bull was a very weak breeder. His daughters averaged 4336 pounds of milk per year while their dams averaged 5,380, a decline on the average of 1,044 pounds of milk per year each. The average fat production of the dams was 234, while the daughters averaged only 216 pounds, a decline of 18 pounds per cow from the dams to the daughters."

The test was continued for several years and the report shows all of the way through similar figures as the above when poor bulls without any backing were used.

In some cases good bulls were secured which brought up the average of the herd production. In summing up the results from the five sires used, two lessened the production, two increased it and the fifth held its own. These figures are accurate and go a long way to show the need for the proper attention in the selection of the bull to head the herd.

Conformation is another consideration that needs attention. No one should put a bull in the herd that will tend to bring out some inferior point in conformation. If the animal is strong in this respect, his calves will usually be the same. One of the most serious points is the lack of constitution. A sloping rump should also be avoided.

It is a common mistake made by many men in starting in the dairy business to consider that the only idea is to get the cow with calf in order that she may freshen and give a flow of milk. They do not stop to consider that a heifer from a good bull can be developed into a good cow, in fact a far better cow than it is possible to buy, under the ordinary circumstances. For this reason it is very important to use only the best possible sires and save the heifers.

In deciding what one can afford to pay for a sire he should consider the future of his particular business. Breeders who are making a success of developing breeding stock, decide that they must have a certain type of bull with a certain definite backing. They then pay what is necessary to get him. This is the plan that should be adopted by the smaller breeder, or the man who is developing a herd of grades. Of course he cannot pay up in the thousands for a bull, but he should decide between the $100 kind as compared with the kind that costs $250 or $500. The rapid progress to be made in the business hinges on that important point.

There is a way of getting the use of a real sire without a large outlay of money. This is through the co-operative purchase plan. A bull is hard to handle when moved from one farm to another. He remains more docile usually when kept at one farm all of the time. This point is a rather difficult one to work out often times in a co-operative ownership scheme. If there are several men in a community that are interested in the same breed, it is possible for them to go together in the purchase of a bull. Anyone will readily see the wisdom of such co-operation. Let each man put in his share of the cost of the bull and decide where he shall be kept. This is the plan of the co-operative bull associations that have proven so successful in many places.

Where bull associations have been formed the results in the community have been very gratifying. The quality of the young stock has been very much improved. The farmers who have co-operated have been able to use better bulls than they would have been able to purchase for themselves. Another valuable consideration of the association plan is that when a bull has been used to the limit of his usefulness in one block he can be traded for one of the bulls in another block. By that plan the first cost will be sufficient for several years to come. Of these plans either one should be applicable to nearly every locality that needs a bull.—H. A. L.

Beetroot is fattening, and good for people who want to put on flesh. So are potatoes.

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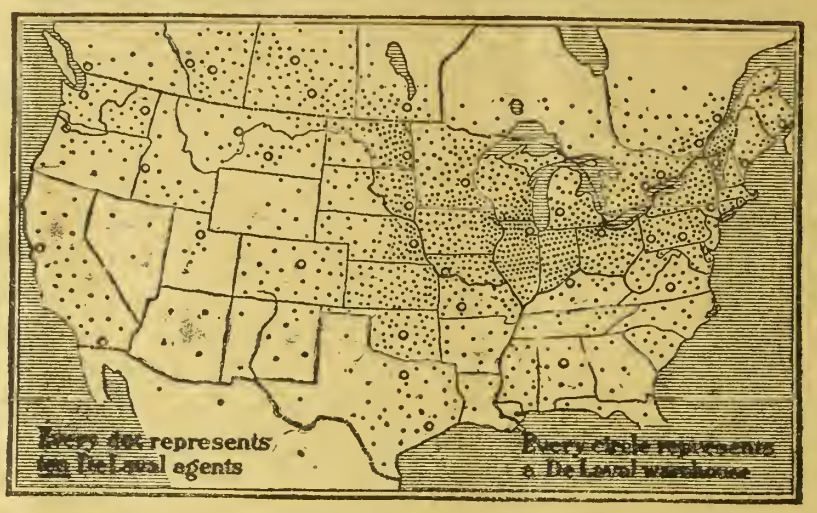

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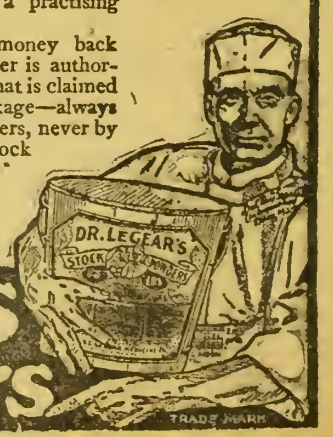

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TRADE MARK

Tuberculosis Eradication.

The federal government has set aside a fund to assist the states in compensating owners of livestock found to be tubercular. Where the state is wide awake enough to set aside a like sum this money will be available for this purpose. Under the plan set forth the state will pay one third, the federal government one third, and the owner himself stands one third of the appraised valuation of any farm animal found to be tubercular. This law is especially applicable to cattle as it is possible to apply the test and find out which of the animals are clean and which are not.

People generally know that it is important to be on the alert at all times to be able to detect the disease. It is readily spread from one animal to another within the herd. Infection may be carried in the milk to the human. This is sufficient reason why we should make an effort to get rid of all tubercular animals. As soon as one is found to be tubercular it should be condemned and disposed of either by burning the carcass, making it into tankage, or in case of animals only slightly affected, it can be held in storage and later sold for meat.

In order to take advantage of the offer of the federal government to assist owners of diseased animals it is necessary to have a law in Colorado to provide an equal amount from the state funds.

A bill was presented at the last session of the Colorado legislature but failed of passage. People who are interested in this matter and everyone should be, need to bring pressure to bear on their representatives urging that they support a similar measure in the next session. Anything that will tend to reduce the spread of tuberculosis is equally important to everyone.

We can never expect to reduce animal tuberculosis unless we provide compensation for the loss of the diseased animals. Now is the time to take this up with members of the legislature in your section and tell them that you are in favor of a law in Colorado to take care of this matter. Do not wait until the legislature meets, but get after it now.—H. A. L.

Economical Hog Production.

It has been repeatedly said that in order to produce hogs to the best advantage one should live in a corn producing state. We are fast coming to realize that we do not need to leave Colorado even to be classed as corn growers. The past few years' experience has brought out the fact that corn can be successfully grown in the state.

However the growing of hogs is not based wholly on the production of corn. There are other things that enter into the industry and which are used to make better and more economical gains than the corn-alone ration. We have another feed in Colorado which enables the farmer to make a more economical gain than is possible in many other sections. This important feed is alfalfa pasture.

The success of the hog business hinges on the fact that the most economical gains are made when the pig is in a growing condition. In other words start to make the hog with the pig at the time it is farrowed. This means that the sow should be given feeds that will produce milk for the litter. As soon as the pigs are large enough to eat grain they should be supplied with a creep, where they can get in and eat without being molested by the larger hogs. This tends to keep them growing. This creep should be supplied with grain at all times, so that the pigs can help themselves.

When the pigs are weaned, or even before, they should be given access to alfalfa pasture. This feed tends to make the grain go farther, as brought out by many successful field tests made under farm conditions. The writer has found repeatedly that hogs on alfalfa pasture will make the same gain on half the grain otherwise required. This points out the great importance of the combination.

Pasture should be managed to the best advantage. To accomplish this it is a good plan to divide it so that the hogs can be shifted from one to the other at intervals of a week or ten days. Everything should be done to keep the alfalfa growing, as the young, tender shoots are the best for the hogs. This makes it necessary often to clip the field when the stocks get too old. When this is done a new growth starts which the hogs are very fond of. It is often a good idea to have as many as four pastures and shift the hogs oftener. Do not allow them to remain in one division too long, as this tends to injure the growth. When properly managed it is possible to make as much as 1,200 to 2,500 lbs of pork from an acre of pasture in a season.

Some men practice the method of letting the hogs make their growth on pasture alone. This can be done with the hogs of the big type and fairly good results obtained. However it is of great help and it is money well spent to provide a little grain with the pasture. It is a question as to whether the self feeder should be provided for this. What one is after is to get as much gain from the pasture as possible. For this reason a limited ration is considered best. The amount to feed usually ranges from 1 to 3 pounds of grain to the 100 pounds of pork per day.

When grain alone is used to feed hogs, it requires from 450 to 550 lbs. to make 100 lbs. of gain. When the pasture is used with it, it will take from 250 to 300 lbs. to make the same gain. These figures are taken from actual tests made in the field where the hogs were run as any farmer would handle them by this method.

Some of the farmers feel that they can not fatten the hogs as cheaply in their locality as they could be fattened somewhere else. This, however, is true that they can raise the hogs to 100 or 125 pounds more cheaply than anyone else. There is a good market for the feeder hogs in the corn belt and they can be easily sold there. By inquiry through the county agriculturist these markets can be located and the hogs shipped direct to them.

One thing should be borne in mind by the hog grower that pork will be eaten and there are more people to eat it than formerly. The thing that they should do is to figure out just how to best produce it to make a satisfactory profit. The wastes of the farm can be utilized by hogs better than by any other class of animal and therefore a few should be kept on every farm. Thanks to the co-operative shipping methods one can now market hogs no matter how few they may have. There will always be money in the business if it is carefully carried on.—H. A. L.

Immunity to Hog Cholera Lasting.

A series of recent experiments on duration of immunity to hog cholera following simultaneous inoculation of young pigs supports the conclusion that the protection is lasting. The investigations were conducted at Ames, Iowa, by specialists of the United States Department of Agriculture.

Altogether 171 pigs, inoculated when a week to six weeks old and exposed to hog cholera, at times varying from 5 months to 9 months and 26 days, later were found without exception to be immune to that disease.

Three of the pigs, however, died during the period of exposure from causes other than hog cholera.

There was no apparent ill-effect from the simultaneous inoculation in any of the pigs.

There was no difference in the immunity of pigs from immune and non-immune sows.

Pigs that were approximately one week old received 10 cubic centimeters of anti-hog cholera serum and ½ c. c. of virus. Pigs that were three weeks old or more received from 15 to 20 c. c. of serum and from ½ to ¾ c. c. of virus.

Immunity was tested by injecting 5 c. c. of virus into the animals when they had attained weights exceeding, in many cases, 200 pounds. None of the hogs contracted cholera. The experiments appear to disprove assertions by some observers that simultaneous inoculation of young pigs is not lasting and that immunity disappears at stages of growth variously placed from weaning time up to 50 or 60 pounds in weight.

Instruction for the Young.

Yells from the nursery brought the mother, who found baby gleefully pulling Billy's curls.

"Never mind, darling," she comforted. "Baby doesn't know how it hurts."

Half an hour later wild shrieks from the baby made her run again to the nursery.

"Why, Billly," she cried, "what is the matter with baby?"

"Nothing, mother," said Billy, calmly; "only now he knows."—Tid-Bits.

Forget the faults of other people.

Tom Christensen, who had nerve enough to install the first Perfection in his community.

His Neighbors Laughed at Tom Christensen When He Bought His Milker. Now There Are Fifty in His Neighborhood.

THREE years ago no one in Tom Christensen's neighborhood had ever used a milking machine. Mr. Christensen wanted to make more money out of his farm. But he did not have hands enough and there weren't enough hours in the day.

It took nerve to resist the scoffs of his neighbors and to try something new.

"When I first put in my milker", says Mr. Christensen, "Everyone around here said, 'There's another boob who's going broke on machinery. He will ruin his cows and he will lose a lot of money.'

"But my hired men were going to leave and I had to do something. Today the Perfection Milker has changed this farm. We have an electric light plant, an electric washing machine, an electric vacuum cleaner and other improvements, but I was saying to my wife the other day that while all these things help us a great deal, it was the Perfection Milker that started us."

The Cows Lick The Perfection

"Instead of my cows being hurt by the milker, they like it. When I start the milker, I have often heard my cows bellow for it just like for their own calves and then turn around and lick the pail. You never heard of a cow licking the hand of a man who was doing the milking, did you?

"And the Perfection is better for my cows than hand milking. When a hired man thinks it's quitting time, he hurries and doesn't milk clean. This cuts down the amount of milk for weeks and makes no end of trouble. But my Perfection milks each cow just the same every night and it never gets mad no matter what happens.

"My wife and I both had to milk before we had the Perfection. Now my two little boys often do the milking alone and it only takes them forty minutes."

And The Neighbors Own Perfections, Too

"When my neighbors found out that my milk check was averaging over $500 a month, they began to have a new idea about the Perfection Milker. Today there are 50 Perfections within a few miles of my place and everybody is satisfied with them."

Mr. Christensen's story is the experience of one of thousands of practical dairymen.

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PERFECTION MILKER

Tingle Leaves College Work.

The accompanying portrait is that of Mr. J. T. Tingle, until recently Colorado State Pig Club organizer, who has been appointed director of Animal Husbandry for the American Guaranty Company and has taken charge of their big Duroc Jersey ranch at Hooper, Colorado. Mr. Tingle deserves credit for doing more than any other one man toward putting the purebred hog industry on a firm foundation in Colorado. He came to the state as a war emergency worker under the Bureau of

J. T. Tingle.

Animal Industry at Washington and worked in co-operation with the extension department of Colorado Agricultural College. Splendid results have been accomplished not only in getting farm boys interested in purebred hogs, but at the same time enlisting many adult farmers in improving their grade of hogs and backing up the good work being done by the boys. This could not have been accomplished without the constant and unselfish aid of established breeders, which was given Mr. Tingle throughout the two years he was active in Pig Club work.

The ranch at Hooper of which he has charge consists of 400 acres, all irrigated and practically all under cultivation with alfalfa as the principal crop. There are on hand at present 135 sows, 120 of which are bred for spring farrow. Of these 39 are registered with records kept right up to date. In fact every sow on the ranch is purebred, but records have not been kept up for the production of pedigree stock.

Mr. Tingle received his training at the Mississippi and Oklahoma Agricultural colleges being graduated from the Oklahoma college in June 1915 with the degree of Bachelor of Agricultural Sciences. He taught agriculture in the high schools in that state and was also engaged in county agent work and agricultural high school work in Mississippi prior to entering the employment of the Bureau of Animal Industry during the fall of 1917.

What Is Constitution?

We very often use the term constitution in connection with livestock judging. The question has been asked, "What does it mean?"

We often refer to a vigorous, robust person, or one that shows strength, as having a good constitution. Such a person is seldom sick, having the power to throw off disease. We all realize that plenty of fresh air is essential to health. We, therefore find that an animal that has strong lungs and heart is better able to perform the functions of life in an efficient manner.

Constitution as applied to animal life refers to the points in conformation that are associated with vigor and health. In farm animals we prefer a nostril that is large enough to take in plenty of air. Associated with this we need to look for a large windpipe to carry the air to the lungs. The lungs need to be well developed, as that is the chamber in which the blood is purified by the air taken in. The heart action which pumps the blood throughout the body should not be hampered in the least. For these reasons, we desire a broad chest floor and a wide spring of rib to allow room for the working of the heart and lungs. Plenty of depth from the floor of the chest to the point of the shoulder is desirable. These points indicate a strong vigorous animal and should not be overlooked when selecting for the herd.—H. A. L.

They Like Colorado Holsteins.

There have been numerous sales of registered Holsteins in Colorado and particularly in the vicinity of Denver since the first of the year and by a comparison of these sales and the sales over the United States we find the prices obtained have been much above the general average. This must mean but one thing and that is that the quality offered is above the general average. It is true that Colorado has what seems to be a superior quality of this breed. The fact that buyers come from adjoining states and often pay larger prices than for Holsteins from other sections seems to denote but one fact, namely, that Colorado bred and raised Holsteins have superior health and size and are great producers at the pail.—Carlos W. Hall, Western Holstein Farms, Denver.

Silage for All Stock.

(Continued from Page 3).

Pennsylvania, Michigan, Missouri and North Carolina Experiment Stations all found excellent results from feeding horses silage. Some of our large breeders and dealers in blooded horses have used silos for many years, and there is scarcely a farmer with a silo who does not feed silage in some form to his horses. Of course, it should be used much as grass is used, that is, in small rations and principally for horses not at heavy work. Only good silage should be used in the horse ration.

As a ration for sheep it has long met with success, and there are many feeders who use it on a large plan. Not long ago I visited a sheep feeding farm where 10,000 sheep received corn silage as a part of their ration. It has hardly come to its own in this capacity; but the sheep feeder will certainly use the silo more in the future, especially if he wishes to make economic gains.

For poultry, fowl, goats and swine, small rations of silage can be wisely used. Some poultrymen use what is known as a chicken silo, a small silo filled with various kinds of green fodder. Sunflowers, especially, are valuable, but a mixed ration has been considered the best. For fattening swine it should not be used as the principal ration, but can be used as a small or part ration. As the feed is rather bulky, do not force swine to eat too much, as their stomachs are small.

On the average farm where all kinds of livestock are kept, care should be taken to put up the very best quality of silage. This generally can be accomplished by cutting at the right period, giving care to bring as quickly from the field to the ensilage cutter as possible. Cut fine with sharp knives and pack well. These are the requirements for good silage.—A. L. Haecker.

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Ismay Belle Dekol, winner of Milk Contest 1918. Milk and butter quantity test 1920—495 pounds milk, 25 pounds butter, eight months after freshening. Ben F. Simpson, owner.

Duroc Jersey Sale.

A sale of registered Duroc Jersey hogs was held at Olathe, Colo., February 24, at which time some 50 animals were sold. It is to be regretted that Mr. Judson Solomon, the man who held the sale, is discontinuing the hog breeding business. Poor health in the family was the cause for this decision. Mr. Solomon has developed some of the best hogs to be found on the Western Slope, and it is a loss to the industry to have lost such a breeder.

The crowd was rather small at the sale, owing to health conditions of the valley, although they proved to be real buyers. The entire offering was retained in the valley. The biggest bargain of the day was when Orion Pal sold for $50 to Arrt Bros. of Austin, Colo. This boar, though 6 years old, is one of the best breeders in the state. The average price received for bred gilts was $60. This, though it might be considered low, was nevertheless good, as they were purchased by the farmers for herd improvement purposes.

Col. W. A. Davis, the enterprising salesman of Delta, wielded the hammer. A report of the sales follows:

Model Queen 2nd to L. S. Young, Olathe, $61.
Cherry Maid 862666 to H. M. Bishop, Montrose, $47.
Gilt, extra, to A. P. McKelvie, Olathe, $42.
Jane Critic to Louis Platte, Olathe, $39.
Gilt, extra, to E. A. Robertson, Montrose, $44.
Orioness 862668 to Elmer Carkhuff, Montrose, $80.
Gilt, to Loren Heckert, Olathe, $57.
Lena 862674 to Ernest Anderson, Olathe, $55.
Critic Orion Jane to Douglas Lytle, Montrose, $61.
Gilt, to A. P. McKelvie, $45.
Gilt, to H. M. Bishop, $45.
Sue 862672 to Ben Parrish, Olathe, $55.
Gilt, Critic Orion Lady, to E. Anderson, $75.
Gilt, to A. P. McKelvie, $44.
Orion May 795606 to E. Carkhuff, $60.
Gilt, to H. M. Bishop, $42.
Cherry Girl 862664 to Willis Alderman, Olathe, $51.
Crow's Lady 3rd to E. Anderson, $65.
Gilt, to A. P. McKelvie, $39.
Orion Lucy 795602 to R. A. Rawson, Olathe, $65.
Gilt, to L. C. Angel, Delta, $67.
Orion's Lady Colonel 862654 to L. C. Angel, $66.
Gilt, to Fred Wilson, Olathe, $56.
Model Queen's 3rd 862646 to E. G. Wilson, Delta, $60.
Gilt, to Roy Moser, Olathe, $63.
Lady Colonel 1st 535870 to E. E. Milligan, Montrose, $70.
Model Mary 662414 to A. P. McKelvie, $56.
Orion Colonel Again to L. C. Angel, $58.
Orion's Lady Colonel to A. H. Griffith, Montrose, $85.
Orion Colonel Miss to J. W. Manuel, Olathe, $61.

Boars.

Orion Pal 174629 to Artt Bros., Austin, $50.
Grand Model 8th Jr., to C. E. Hunt, Olathe, $39.
Orion Pal Prince to Louis Platte, $41.
Model Edna 662412 to Ben Parrish, $60.

Sunflowers Yield High.

What crop will produce more forage per acre than the Russian sunflower? In the plots put out by the Farm Bureau last summer the following yields were recorded:

J. F. Wilmarth, 40 tons per acre.
Geo. Benjamin, 32 tons per acre.
G. V. Rudd, 25 tons per acre.
J. E. Moore, 25 tons per acre.
R. A. Trout, 15 tons per acre.
Homer Holland, 8 tons per acre—(Altitude 8700 feet).

The food value of this for silage is as follows:

	Sunflowers	Corn
Dry matter	12.24	26.2
Crude protein	1.24	2.0
Fibre	2.86	6.2
Carbohydrates	7.87	16.2

The above represents 100 lbs. of silage of each. The corn represents a nutritive ratio of about 1 to 8.75 while the sunflowers are 1 to 7. Basing it on acres we can get at least 5 times as much food value from sunflowers as from corn.—Saguache County Farm Bureau Reporter.

A Boost from a Cow Tester.

Western Farm Life is a very progressive farm paper and is always ready to boost the things that count in these western states. A magazine that boosts us we should boost and patronize. I have noticed that the number of livestock ads in Westyear and it has become a stockman's ern Farm Life has grown in the past paper. This is what we need—to promote the livestock industry, and the more ads that are sent to Western Farm Life the more of a livestock paper it becomes, the more readers of outside states will become interested in our livestock. I believe in boosting the thing that boosts us and the thing that really belongs to us, and I feel that Western Farm Life really does belong to us and we owe it our support.—Roy M. Curtis, Cow Tester, Johnstown Association, Johnstown, Colo.

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Wyoming Club Results.

Good progress is being made by Boys' and Girls' Agricultural clubs in the state of Wyoming, according to a report compiled by the Extension Department of Wyoming University and sent out by Prof. A. E. Bowman, extension director. That the young people are turning their training to practical account is apparent from the figures which show just what has been accomplished in dollars and cents. The advantages of the work from the standpoint of the future usefulness of these young people as farmers and farm home women cannot be estimated. The following summary shows what was done during 1919 by the various clubs:

PORK CLUB—Of the 128 members who started pork club work in the spring, 97 completed it and submitted a report. These successful members managed 190 pigs that had been farrowed in the late spring and early summer. Because of late farrowing and the dry season they did not make the gains desired. Yet they made almost 20,000 pounds of pork. Fifty of the 190 pigs are purebreds ranging in value from $25 to $150 each.

SHEEP CLUB—In the sheep club 325 boys and girls enrolled and 254 completed the work and sent in records. This number owned 2,069 sheep. Of the 2,069 sheep about 1,800 were bum lambs which would all have perished had it not been for club members. The other 269 were ewes, which under the management of the boys and girls, raised about 125 per cent of lambs.

POTATO CLUB—With an enrollment of 30 members, 24 reported their work completed. Twenty and one-half acres of potatoes were grown and very satisfactory yields received. The potatoes raised by the boys from Park county were of very high quality as shown by the fact that they won most of the prizes at the State fair, the Park county fair and the Midland Empire fair held at Billings.

POULTRY CLUB—The 130 poultry members who reported, raised 3,801 chickens during the past season. A large percentage of these were purebred. In a number of communities the club members were the sole owners of purebred chickens. Members of the poultry club carried on a number of demonstrations on how to feed and cull chickens and also how to kill lice and mites.

DAIRY CATTLE CLUB—Although the past year is the first time the dairy work was undertaken, the results have been fine. Bred heifers and calves 4 to 6 months old were shipped from Wisconsin to boys and girls of several communities. All the heifers have freshened and are giving a good flow of milk. One boy in Sheridan county made 98 per cent on his investment in less than six months. The demand from boys and girls for heifers and calves is so great that the dairy specialist will have a real job on his hands to fill all orders.

CANNING CLUB—The members of the canning club during the past dry season which made suitable raw materials very scarce, canned 10,141 quarts of vegetables, fruits and meats; also 1,834 jars of jelly, jam, etc. Besides this they gave 39 public demonstrations on the cold pack method of canning. It will also be remembered that the demonstration team which represented Wyoming at the Interstate fair at Sioux City, Iowa, was in competition with teams from eight of the central states and yet they won the prize.

SEWING CLUB—In the sewing work, 260 girls were taught how to sew and to make their own clothes. These girls made a total of 665 garments for their wardrobes. Besides making these garments many of these girls helped with the general sewing, making garments and darning stockings for their younger brothers and sisters.

About Zang's Percherons.

"The horse industry has come to a weeding out of inferior animals on account of the truck and tractor. No invention can ever replace the horse on the farm. In the city the truck and horse have practically reached their equilibrium. The truck is only most favorable on the long haul and quick delivery, while on the short haul in the city, the horse will always have his place. On the farm tractors will continue to increase, but there is a certain limit; and on most of our irrigated farms in particular they are not highly practical and there will always be the work that cannot be done except by horses. You must convince yourself, however, that it is only good horses that will remain and that are worth raising. The good, big drafters are here to stay, and on account of the shortage in this country and Europe, as reconstruction continues, the demand will be greater than ever in the history of the world. We are convinced of these facts from extensive investigations of the subject."

The above statement comes from the Adolf. J. Zang Investment Co. and is worthy of careful consideration by all farmers who are interested in draft power of any kind. Zang's are proprietors of the famous Elmwood Stock Farm at Broomfield, Colo., where Percherons are bred under highly scientific conditions. This farm was established 35 years ago by the late Adolf Zang and his good work is being continued by his sons, Philip A. and Adolf F. The farm now contains approximately 4,000 acres, much of which is high class irrigated land with ample pasture for the outdoor development of purebred drafters of the big type.

In January, 1908, Mr. Zang placed at the head of his herd the internationally famous stallion Champagne, who has been declared by critics of both France and America to be absolutely perfect in type. He won great honors, starting with the grand prize at Paris, France, and taking many state championships in America, together with the grand championship at the Chicago International, American Royal, National Western Stock Show, Colorado State Fair, etc.

His greatest value to Elmwood Stock Farm was not in his wonderful show record so much as in his success as a breeder. In this he was declared to be worth his weight in gold. In his pedigree are found the names of the most noted of all sires and dams in Percheron lineage.

Among the important later acquisitions of Elmwood Farm is that wonderful stallion Negro, who took his first honors in Paris and has been similarly honored as champion at the International in 1917, and grand champion at the National Western in Denver. Many critics claim that he is equal in type and conformation to the great Champagne.

Among the splendid mares at the farm are such noted ones as Jalapa, Lacerie, Mattie Melba and others, who have winnings to their credit at the great fairs of this country and Europe. In addition to these outstanding show mares there are a number of brood mares, one striking example being Clariet, who is the dam of the great filly Elmwood Dutchess; another, Estelle, the dam of the great Mirabeau, champion colt at the National Western. Nothing like this in quality and number of outstanding offerings has been announced for any western horse sale. Farmers and horse breeders generally should carefully read the announcement on the advertising pages of this issue.

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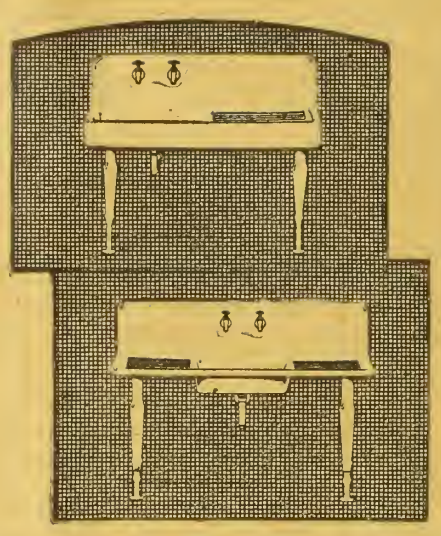

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GRAND JUNCTION SEED CO.
Grand Junction, Colorado

Iowa Station Develops Annual White Sweet Clover.

(Continued from Page 4).

soil conditions have much to do with the results. If the proper bacteria are not present in the soil it is necessary that the sweet clover seed be inoculated. Nearly, if not all, of the tests made with this clover have been without inoculation, and it is not surprising that unsatisfactory growths should result in some cases.

Probably From Alabama.

The fact that the annual white sweet clover plants were first observed in plantings made in the greenhouses at the Iowa Experiment Station does not mean that it originated there. A "sport" or mutation must suddenly have appeared somewhere, probably a number of years previously, and everything indicates that the location was somewhere in Alabama. It is quite certain that the "sport" did not occur in a cultivated field, for under these conditions the seed would have been lost. It evidently occurred on wild land several years, where it made its growth and produced its seed year after year without any one becoming aware of the fact that it was making its complete growth in a single season. Considerable sweet clover seed is harvested in certain sections of Alabama by negroes, who either stripped the seed off the standing plants or cut the plants down and threshed the seed out by hand. Under these conditions the seed of the two clovers became mixed.

Since seed of the annual white sweet clover was first distributed by the Iowa Experiment Station a number of reports have been received to the effect that occasional scattered plants had been observed to come into bloom the first year, and in nearly every instance where the sources of this seed could be traced it was found to have come from Alabama.

Seed of the annual white sweet clover, while resembling in many ways that of the biennial, can be identified, due to the fact that they are somewhat flatter and have quite a prominent crease extending diagonally across the seed from the hilum. This is regarded as of considerable importance, as it will discourage the substituting of the biennial seed for that of the annual.

Root Penetration Shows Why Deep Plowing Pays.

(Continued from Page 5).

way. The expense for seed would have been only one-half, and the wheat could have been harvested in about two-thirds of the time.

"This brings to my mind an incident when I was just a boy on the farm, but illustrates quite fully the value of deep plowing to conserve moisture and allow the roots to grow to a depth which will support the plant and also obtain more moisture for the plant. It is a pretty well established fact that the roots of some of our farm products will go to great depths seeking what moisture they can obtain. We had moved onto a farm in Indiana composed mostly of clay hills and washes. The first year our corn crop was, of course, a complete failure; aside from the stover furnished by the fodder there was very little feed to be had from the crop. I don't remember whether father was discouraged or not but I was, and it started me to thinking. So while looking into an implement house one day I saw a funny looking plow. I went in and asked what kind of a plow it was. The dealer said: 'Sonny, that is a subsoiler; how many do you want?' I asked a few more questions and became fully convinced that the peculiar looking implement would solve the problems on our clay hills.

"Of course, father could not see it the same as I did, but finally the next spring I prevailed upon him to buy a sub-soiler. He put the three horses on a 16-inch plow set as deep as it would go. Another three-horse team followed with the sub-soiler. In this way we loosened the soil to a depth of from 20 to 24 inches. The results were more than satisfactory and from that time on the sub-soiler had a place on the farm. I certainly am a firm believer and can hear no arguments against deep plowing and cultivation for the conserving the moisture. The deeper you can plow the greater the amount of moisture to be conserved."

Trees for Fence Posts.

Answer to W. L. B., Yuma county, Colo.

Your inquiry to Western Farm Life concerning the species of trees suitable for fence posts, which can be grown near Kirk, has been referred to me by the editor. You intimate that black locust is the best species to grow in eastern Colorado for posts, but wish to know how to protect that species from the black locust borer. Were it not for that borer the black locust would be the best species to grow for posts. For many years black locust was grown in Colorado before the black locust borer migrated so far west. In recent years the pest has made its appearance near the Nebraska and Kansas boundaries and in the vicinity of Denver and Boulder. The spread of the insect is sure, and deadly to the successful production of black locust. It is claimed that dense groves of black locust will not suffer materially from the borer and that the attack is localized to the marginal trees of a grove. On non-irrigated land, however, you cannot grow dense stands of trees. No successful method has been discovered to combat the black locust borer, consequently it would be unwise to plant this species. Hardy catalpa is also a desirable fence post tree which succeeds in the Arkansas valley east of Pueblo, but in the northeastern part of Colorado the climate is too severe, causing winter-killing in all cases which have come to my attention. Osage orange or hedge tree is also too tender for most parts of Colorado. Honey locust is hardy, relatively free from pests and perhaps the most durable of the species which do well in your locality. It is slower growing, however, than black locusts and its posts may last on an average without preservation treatment ten or eleven years, according to observations made in Iowa. Cottonwood, poplars, willow, elm and other non-durable wood may be grown to fence post size and treated by a simple process, the open tank, hot or cold, with coal tar creosote at an expense of from 12 to 15 cents each. Such posts are said to last between twenty and thirty years. The so-called "breaks" or rough land in your vicinity is capable of producing Rocky Mountain red cedar, a species nearly identical with the red cedar of the east, and just as valuable for posts. I have at present no data upon the rate of growth of red cedar in eastern Colorado. We must agree that the post problem is becoming critical. There is a good field for the cutting of fire-killed lodgepole pine posts in our mountains and even green lodgepole pine to be seasoned, and the dead and the seasoned posts treated with creosote and placed on the market in eastern Colorado.—W. J. Morrill, State Forester.

Warnock—Jay & Allan.

Sixty head of registered Shorthorn cattle, mostly of fashionable Scotch breeding, will be offered in combination by D. Warnock & Sons of Loveland and Jay & Allan of Boulder, in Denver Friday, April 9th, the sale to be held in the Stock Show stadium. This follows the sale of the Western Shorthorn Breeders' association, which is booked for the 8th. These two breeders are joining in an offering the like of which has not been put up in the Rocky Mountain country on any previous occasion. Their advertisement in this issue gives full particulars regarding the breeding of the cattle and it is well worth careful study by breeders, as well as farmers who intend to start herds with foundation stock of the highest merit.

Considerate Mule.

A negro was trying to saddle a fractious mule, when a bystander asked: "Does that mule ever kick you, Sam?"

"No, suh, but he sometimes kicks where I'se jes' been."—The American Legion Weekly.

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Everyone Enjoys Flowers

NORTHRUP, KING & CO., Seedsmen
Salt Lake City, Utah

Witch's Island.

(Continued from Page 8).

with needles and pins—as you're now discovering," said he drily, and halted for Dr. Abels to overtake us.

CHAPTER XVIII.

Old Louis.

In the end it fell out as I might have expected, though not perhaps as I might have feared.

So far as the social side—if so it may be termed—of life on Witch's Island was concerned, the old order promptly gave way to the new. In the matter of the wrecking operations of the Zenobia there was no interference with our plans, nor, indeed, appearance of desire to interfere.

Ashore Mrs. Vincent took charge of our destinies, quite as a matter of course. Abels was completely under her thumb. At her order he had caused baggage and material for tents to be landed, and was prepared to set up housekeeping while the Fair Lilian was under repairs. In this, however, the lady's will was also a sensible notion, for the yacht having been beached in a cove at the far end of the island, and being hove down to get at the leak, was hardly a comfortable abiding place.

Mrs. Vincent, though, didn't find shelter in a tent. Miss Perham had offered her a share of the hut, and the offer had been accepted. Abels camped near Grayson and me, and proved to be a good neighbor. He was a travelled, well-read chap, affable and responsive, ready, apparently, to accept what we desired to tell him about the wreck, and with merely a casual, if friendly, interest in the success of our venture. By day he roamed the woods of the island, equipped with a butterfly net and a wide-mouthed bottle or two to receive specimens, and by night he talked pleasantly and not too seriously of his mild adventures. Of course he came off to the wreck. That was the natural thing, and it was done in the most commonplace fashion imaginable. The doctor peered through his spectacles into the forehold, inspected the diving apparatus, asked a few general questions, and seemed to be quite content to return to his favorite pursuit ashore.

Mrs. Vincent was more inquisitive, and marked her progress about the half submerged deck with pretty little cries and dainty flutterings of skirts, and fetching exclamations of admiration of the courage which could venture into the gloomy depths of the hold. But she, too, ended her visit of inspection without betraying anything but interest entirely in keeping with the novelty of the whole situation.

As much by omission as by direct statement the newcomers had been given to understand that Miss Perham was the daughter of the late owner of the Zenobia, and that Grayson and I were collaborating with her in exploring the hulk. There was no need to go into confusing details or to waste time in describing the steps which had led to the modus vivendi.

As has been said, however, the plump little lady with the baby blue eyes queened it on the island with a completeness which well might have stirred her subjects to wonder at their own docility. Edith Perham, for instance, had given us full evidence of the independence that was in her, but Edith bowed almost submissively to Mrs. Vincent. Grayson had been for I don't know how many years out of touch with those who obey the social code, but he, too, set up no standard of rebellion. Hoban was like a well-drilled soldier, prepared to salute a commissioned officer on sight.

"Yes, she's the boss, fast enough," Grayson confided to me. "Still it might be a deal worse. If she's the boss, she's an easy boss, praise be!"

And this was going to the root of the question. Mrs. Vincent's despotism was of the benevolent type. She consolidated domestic effort. The cook of the Fair Lilian, a negro who knew his trade, took charge of a combined food supply. Hoban served a united mess.

"We're all on the same island, and that's amazingly like being all in the same vessel," the little lady purred. "It's perfect nonsense to stand on ceremony, and wouldn't do anybody a mite of good. And I for one don't propose to be a Robinson Crusoe, or a hermit, or——"

"When you can be part of a Swiss Family Robinson, eh?" chuckled her brother.

"Well, I always like the Family story better," she said with a laugh.

I must own that I also liked it. After a day on the deck of the Zenobia it was good to row ashore to a well-cooked meal, served by a trained butler under an awning of sail cloth, in a sort of glorified picnic fashion. Then came a smoke and talk, diverting, if not over clever, and music, simple but tuneful. Mrs. Vincent could pick a banjo or strum a guitar, and she could sing as well in a high soprano, a little thin, perhaps, but not jarring to the untrained ear. Sometimes, I confess, there was a bit of artificiality in our socialibility, but only a bit. Grayson bore his share in the talk, the doctor had a stock of innocuous anecdotes, and Miss Perham ably seconded the chaperon's efforts.

In the beginning—in our first interview on the beach—it had seemed to me that the plump little lady had a tendency to show the claws under the velvet of her touch, but once affairs had been arranged to her liking, there was less ground for criticism. And so, altogether, things went very smoothly for two days, in which we drew closer and closer to the secret of the forehold of the wreck.

It was late in the afternoon of the second of these days that Grayson reached the first of the great packing cases.

Up on deck we turned to with a will, and after a deal of hauling raised the huge box and dragged it over the combing of the hatch.

It had suffered somewhat from the explosion of the warship's torpedo, the heavy boards being rent and splintered at one end; but an inner metallic case was intact.

Grayson had scrambled out of his diving panoply, and with Jose fell to work upon the lid of the case, which fitted in [illegible] so accurately that hope was roused [illegible] no water had penetrated it. There was, no doubt, a lock of some sort, but hasty search failing to disclose it, hammer and chisel were resorted to with such effect that soon an opening was pierced and part of the metal cover pried back.

Within was something wrapped in folds of cloth, something gruesomely suggestive. The skipper paled and moved back, shrugging his shoulders uneasily. Jose, the stolid, grunted deep in his throat.

"Whew, Grayson!" said I. "It's as bad as I thought it'd be. It's disturbing the rest of the ages; it's invading a tomb; it's grave robbery!"

"And it's what we're here for," he answered crisply. "Get busy with that chisel, Jose; along this side. And, Scott, you've this comfort, at least: What we're trying to do now has been done before us. There's no original package, so to speak. This fellow has been packed and repacked times enough, I warrant you. Whatever he was in the beginning, he's been an article of commerce these many moons."

There was no gainsaying that, nor could there be denial that it was to recover the mummy and his fellows that we had gone to so much trouble. Still, it was with no great heart that I watched my friend and his helper until they had established that there was nothing except the mummy in the case. By that time the sun was close to the horizon.

"Nail on the wooden cover, Jose," Grayson directed. "Then we'll all lend a hand and shove the box out of the way to make room for No. 2. We ought to be able to come near clearing the hold by tomorrow night. Then it'll be a problem of transshipping." He moved to the rail, and peered over the side. "Save a heap of work if we could warp the Pera alongside—ought to be able to manage it—pretty heavy stuff to move in small boats."

I nudged him. "Then there's the safe,' said I. "Can't abandon that, you know, especially since its owner has practically turned its rescue over to us."

"We'll not fail her," he said, shortly.

For twenty-four hours neither Miss Perham nor Hoban had visited the wreck. The girl, having entered into the alliance, was depending upon her allies to keep their contract.

"Surely not!" I echoed

"It ought not to mean more than an extra day."

"In that event," I said, "we may be bidding farewell to Witch's Island before our friends of the Fair Lilian depart."

"Very probably," said he.

"There's this to be said for them," I remarked: 'If we had to be intruded upon, more harmless intruders couldn't have been selected.'

"Again you are within the limits of probability," said he. "They've been harmless, anyway, up to date."

There was something in his tone I didn't quite understand, though I must confess that the uncertainty did not weigh heavily upon me. I know I went ashore in high good humor, with hopes of an early and successful completion of our venture, a keen appetite, and pleasurable anticipation of a substantial supper and a mildly jolly evening. The meal was duly provided, but for some occult reason or other the talk dragged. Mrs. Vincent pleaded sudden distaste for guitar or banjo, the doctor's anecdotal well ran dry, Miss Perham declined to fill the gaps in the conversation, and we broke up half an hour earlier than usual, to everybody's relief, I suspect.

Grayson had planned an early start in the morning, but both of us must have overslept, for it was broad day when he woke me. I sat up in the hammock, rubbed my eyes, and yawned.

"Come on, lazybones!" he called. "No beauty nap for you this day. Come on! I'll find work enough for idle hands to do if——" He broke off, and stood, listening intently to sounds borne from seaward, sounds of which I had become vaguely aware in the last few seconds.

"What's that?" I asked, lazily. "Like the voices of men, eh? Wonder if the Fair Lilians are having a shindy among themselves before breakfast?"

But Grayson was already hurrying toward the beach and its view of the lagoon. I followed more slowly, not so wide awake as I might have been, but fated to behold a sight which banished everything from my mind but consternation.

As I stepped from the cover of the underbrush, a schooner was rounding to an anchorage just astern of the Pera. She was a big vessel of her class and full of men, some of whom were already tumbling into two boats towing alongside her.

"How the—what the devil brought her here?" I gasped.

Grayson had pulled up at beholding the craft, which he was scanning closely.

"She came in by the north channel, if that's your question," he said, coolly. "It's the 'how' of her coming, anyway. The 'what for' you'll see soon enough for yourself, for unless I'm mightily mistaken, my good gossip, Old Louis, has come back with a particularly lively flea in his ear and a man-sized intention to find out—ghosts or no ghosts—all that's worth knowing about the wreck of the Zenobia."

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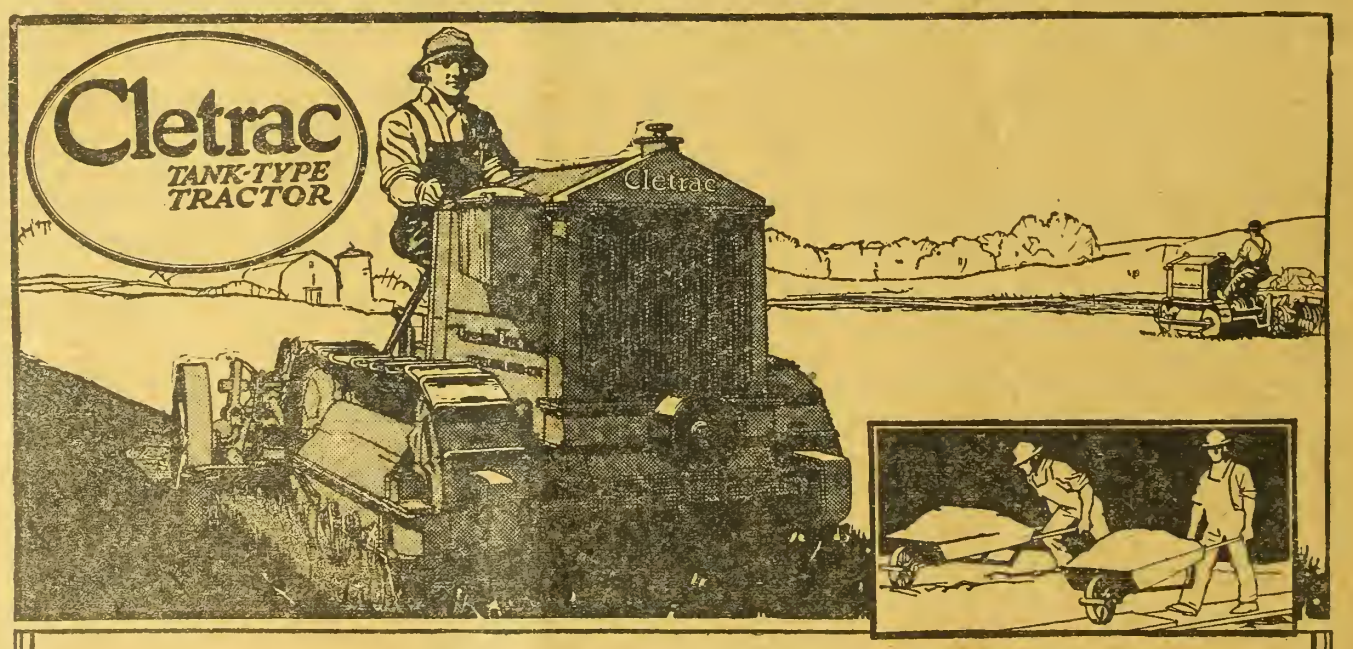

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CHAPTED XIX.

The Law of the Strong Hand.

The worst of it all was our utter helplessness.

Old Louis had stolen a march on us, though with his overwhelming numbers he had no need to exercise stratagems. What was more, chance had permitted him to seize a central position, close to the wreck, with the Pera within easy reach. Before the big schooner had altogether lost headway, the boats shot from her side and were pulling full speed for the Zenobia, making a race of it, in fact, and the men of both of them were swarming about her deck long before we could have reached her, had the attempt been worth the making.

As it was, we stood where we were, watching what we could not prevent. Presently Hoban joined us, and the cook of the Fair Lilian came up, rolling his eyes at sight of the invaders and wagging his head portentously. Then there ws a light step on the sand, and Edith Perham spoke.

"Another crew of invaders? Do you know who they are?"

"I'm forced to admit," Grayson told her, "that they are a gang I'm especially sorry to see there—a bad lot. The worst possible from our point of view."

"But you will order them off."

"It would be wasted effort."

"But the law——"

He interrupted her. "The only law they recognize is the law of the strong hand."

"Oh!" she said, with a sharp indrawing of the breath. I fancy his words had stirred some recent memories none too much to her liking.

Then Dr. Abels appeared, and with him came Mrs. Vincent, bubbling with curiosity and with her blue eyes very wide open indeed. She rained questions upon Grayson, which he answered curtly.

These strangers had not come by chance; they had come in force sufficient to overwhelm opposition; their leader was a man who had made an earlier visit to the wreck, but had departed without attempting extensive salvage operations.

Abels let his sister exhaust her stock of exclamations before he took part in the talk.

"What is your plan of campaign?" he asked with businesslike directness.

"It depends upon circumstances," Grayson answered.

The doctor took off his big spectacles, wiped them carefully, put them on again and studied the groups on the Zenobia.

"You're outheld," said he. "No doubt of that. Why not make terms with these fellows—buy them off?"

"I'm not in a position to negotiate."

"That is unfortunate," said the doctor, drily.

"Vastly!" Grayson agreed, quite in the other's manner.

Abels appeared to meditate. "I observe," he remarked, after a little, "that they seem to be in no mood for overtures."

Grayson smiled, grimly. "Your observation is scientifically accurate, Doctor. And, by the way, merely as a suggestion—it'll be worth while to look after the Fair Lilian."

"You think they'll molest her? That would be an act of piracy."

"Unquestionably. Still, we're out of the field of police protection. Given certain conditions, your boat will be safe enough. Given others, she'll have to take care of herself. Remember, those chaps aren't here for their health. If they don't meet expenses in one quarter, they're not above helping themselves in another. If you're ready to go to sea—"

"I'm not," cried Abels, sharply.

"In that case, I advise you to put your yacht in the best possible position for defense."

The doctor nodded. "The advice is good, sir. It shall not be wasted," said he. He strode away in the direction of the cove, in which the Fair Lilian was under repairs, and which was so far from our quarters that we had seen little or nothing of his crew. I began to wish we were better acquainted with them. We might have sore need of all the reserves we could summon.

There was scant comfort to be gained from watching the doings of Old Louis and his beauties, for there was every evidence that if our plans were uncertain, there's were fixed. A boat pulled over to the Pera and left three or four men aboard her, enough, at any rate, to keep the skipper and Jose in check; while on the wreck was the activity of a hive of bees. It centered naturally about the forehatch, but a squad also was busy aft. Grayson pointed out a stout figure bustling about with an air of command.

"Old Louis himself," he exclaimed. "As able a scoundrel in his line as I've chanced to come across. Keep your eye on him, Scott, if anything happens."

"I will," I promised, gloomily, and kept the promise, for lack of anything better to do.

The boat pulled back from the Pera, carrying Jose and the skipper. The crowd on the wreck toiled zealously. One of their men had donned the diver's suit and was below, proof of his activities being afforded by the appearance of one of the big packing cases, which with a deal of shouting and hauling was hoisted through the hatchway. In due course, too, a second case was brought to light, and then a third and a fourth.

All this took time, though, and it was mid-afternoon before, so much having been accomplished, there came a bunching of heads in consultation. It ended in a general movement aft, and a diver's disappearance through the companionway.

"Somebody leaked?" I queried. "Jose or the skipper?"

It chanced that Grayson and I were alone at the moment, in the shade of a tree overhanging the beach.

"It may be," he admitted.

"As between the two," said I, "count on the skipper to talk."

Grayson said nothing, but there were furrows in his forehead.

"He owes you one," I pursued, my mind going back to that sound dressing-down Grayson once had given the master of the Pera.

"Humph! In that case, why did he come back after he had to put to sea? He had merely to abandon us in order to leave us in the worst kind of a box."

"And, incidentally, to leave himself whistling for his pay."

Grayson thought this over for a moment. "There's ground for suspicion. Still, we'll give him the benefit of the doubt. And neither the skipper nor Jose could give Louis the precise information he'd prefer."

Dr. Abels came up, and dropped on the sand beside us. "Well," he said, "what tidings from the front?"

"None," answered Grayson. "How go things on the left flank?"

The doctor's face lengthened. "I've warned my sailing master, and he's driving his crew. Still, they're woefully shorthanded. I'm hoping, though, we'll not be molested. If those fellows out there mean active hostilities, why should they delay them at all?"

"Oh, Old Louis is no glutton for fighting, if he can get what he wants without it," said Grayson. "And you're not directly concerned, you know. Your yacht 'll figure, if at all, as a sort of by-product of the expedition."

"Ah!" quoth the doctor, enigmatically. Then he bent forward, with outstretched arm. "Look! A boat's coming ashore. The enemy is ready for a parley."

"Old Louis himself!" Grayson exclaimed.

Four oarsmen pulled vigorously, and the man in the stern of the boat steered from the wreck toward our post of observation. As the little craft touched the beach, and lost way, he stepped over the side and waded ashore, a performance accompanied by no discomfort, inasmuch as he was barefooted. He advanced a few paces, halted, and raised a hand in a sort of crude salute.

He was, by my reckoning, nearer sixty than fifty; grizzled of hair and of scanty beard; as dark as the average mulatto but with high-bridged nose and thin lips; a man of good height, heavy bodied, but active in spite of his years and his build; long armed and powerful about the shoulders. Apparently he was unarmed, without even a sheath-knife in his belt. There was nothing in his bearing or in that of his followers to indicate hostile purpose.

His glance ranged the three of us, resting for an instant on Dr. Abels and me, but lingering on Grayson.

"Aha!" he said, and grinned in recognition. "Aha! Eet is my o' friend. An' he will remember me, Ol' Louis?"

His voice was rather soft and by no means displeasing, His English was quite intelligible, its chief peculiarity being a tendency to clip a final consonant now and then. As for his grin, it gave less cause for liking, inasmuch as it showed teeth, broken, irregular and yellowed by time and tobacco.

"Yes, I remember you," said Grayson, coolly. "I don't forget an old shipmate so easily."

Louis' grin widened. "Ol' shipmate," he repeated. "Ah, eet was so. We came together—here——" he jerked his head in the direction of the wreck. "Ah again we are here.'

"But not together."

"No," Louis admitted. "But you come back, I come back, eet is strange. An' ze great box, eet is still here. I—I do not like zat box."

"Bad medicine, eh?"

The fellow nodded. "To me—yes. I sell to you—why not?"

Whatever else might be thought or said of it, the proposal was unexpected. I stole a glance at Grayson and inferred he was as unprepared for it as I had been. Yet he coolly met query with query.

"You'll sell, eh? How much?"

"What you give?"

Grayson deliberated, briefly. "No, set your price," he said.

Louis shook his grizzled head. "You talk with your frien's. I give you time—why not? Tomorrow? Zen I come again. Now I go, but firs—" he turned to his crew and sang out an order—"firs' I make ze gif', ze present. Oh, eet is nuzzing to me, to you perhaps eet is something."

Two of the lounging boatmen sprang to their feet, and raising a case from the bottom of the boat, bore it toward us. So far as I could see, it was a stout oak box, not large but weighty. At least, the pair made a to-do about carrying it. Where it had been found on the Zenobia I had no notion, though probably one of the staterooms had yielded it.

As the bearers came up to him, Louis took a step forward, and I followed his example, recklessly forgetting the peril of trust in these worse than Greeks bearing gifts. I heard Grayson's sharp cry of warning, but heard it too late, for I was bending down to seize a handle of the box, which Louis's men had lowered to the ground at my feet.

A sinewy hand clutched my collar. I was dragged forward, over the box and down the slope of the beach, was pitched struggling furiously, into the boat; heard the crack of a pistol and a yell of pain; was raised above the gunwale and held like a living shield against the bullets of my friends, as the craft gathered headway.

Two men were pulling their hardest, another was a groaning and huddled figure at my feet. The fourth sailor and Old Louis kept me in my place of dangerous prominence, and at the same time made shift to blaze away at the shore, where Grayson and Dr. Abels had taken cover. Both of them, as I knew, had revolvers. The wounded man at my feet bore testimony to Grayson's aim, but now, while I formed the center of the target presented by the boat, neither dared risk a shot.

The abduction had been shrewdly planned and cleverly carried out. That I had been the one for whom the plot was laid might be doubted, but doubt there could be none of the stupidity and

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folly which had sent me blundering into the trap, set, it may be, for a more valuable prize.

CHAPTER XX.

The Prisoners.

For a long time, not to be measured in hours, but in misery of mind and body, I had been locked in a tiny stateroom, incredibly dirty and well nigh stifling, on Old Louis' schooner. But now a change impended. That it could be for the better I had small cause to hope, yet when there was a tramp of feet outside, and the bolt shot back and the door swung, I lunged forward in haste and staggered into the main cabin.

In the black hole in which I had been penned the coming of night had made little difference, but in the cabin it had brought the lighting of a swinging lamp, which burned smokingly and flickeringly, casting tricky shadows upon a weird scene. Old Louis was sprawled in a chair at the head of a table, about which were grouped several of his followers, while a brace of husky ruffians lounged at the foot of the companionway. So far as faces went, the company might have passed as an oldtime pirate crew, made up of the scourings of three or four races and twice as many nations. But there was no swaggering display of arms and no gaudy finery such as pleased the buccaneering heart.

Imperfect as the light was, it was dazzling in contrast with the gloom from which I had come. For a moment I stood, blinking at the captain and his followers. Old Louis returned the attention. More, he smiled, and waved a hand in salutation.

"You are not my ol' frien'," he said in his soft voice, "but a new frien', perhaps. Why not, eh?"

There was certainty now where before had been suspicion. The trap I had sprung by the simple but sure method of stumbling into it, had been set for bigger game—for Grayson. Somehow the thought did me a world of good, and I stood straighter.

"You can answer your own question better than I," I growled.

He fell to rubbing his hands in a fashion not cheering to observe, for though the motion was slow and deliberate, the long fingers curved with a hint of talons. "You can tell mueh, my frien'. Oh, yes, ver' much," he purred.

"I tell nothing," said I, stubbornly.

He was still smiling, but the smile lost its warmth.

"Ah, you will think again. Ze great box—you will explain. Why you come, why he come back?"

"Guess!" said I.

"I will not guess. I fin' out—this time. Before I was trick'. It was a ruse."

"And it worked!"

The remnant of the smile vanished, and he ripped out a big oath. A stir ran through the group of followers. If ugly looks could stab, I'd have fallen bleeding from a dozen wounds. But Old Louis quickly got himself in hand.

"My new frien', you will tell. I will be frank. I conceal nozzing. Ze great box I open—one of heem—two—three. Eet is all ze same. Ze—ze what you call——?"

"The mummy," said I. "You're wondering what the lot's worth. I don't know."

At that he frowned. "Eet is a lie. You hire schooner, you hire men. Grayson has no money. And firs' of all he cheat me. He know, you know what you do."

"Blessed if that follows!" said I, a bit flippantly, it may be.

The frown darkened, and he said something in a dialect I didn't understand. One of the men at the foot of the ladder turned and mounted to the deck, returning in a moment to usher in the skipper of the Pera.

Captain Moses Brown, thrust upon the center of the stage, bore himself doggedly, rather than proudly. That is, he avoided my gaze and kept his eyes upon Old Louis, though there was nothing cringing in his bearing. And Old Louis, after studying him for a space, turned to me.

"You see?" he said, spreading his hands. "Zis man tell what he can. Why not? Eet is for revenge. Grayson, he insult, he he strike."

"So he turns informer?' said I. "He'll pay dearly, and I say it for his information as well as yours."

Old Louis leaned back in his chair. There was somewhat of leisurely enjoyment in his manner, in the deliberation with which he spoke.

"You make a bol' fron', but to be bol' is to be a fool. I know—he tell me—how many may be with Grayson. Four men you were, then five. Now there is Grayson and one, eh?"

The computation was all too easy to follow. The skipper, Jose and I were in the hands of the enemy; that left Hoban with Grayson. Still, there was Abels and his crew of the Fair Lilian. Old Louis must have read my thought, for he went on:

"Ze yacht you count on? Eet is for pleasure. Ze yachtmen fight? Poof! And I have thirty men—forty, maybe. Now what you say?"

"Nothing," I told him curtly.

There was an ugly gleam in his eye, but he kept his temper.

"Zis man tell what he can. You can tell more. It will save ze trouble. We put you in the hol'. Eet is black, eet stink. You want zat, my frien'?'

I made no reply. He contorted his features in a grin, which bared his teeth.

"You need more time to zink, eh? As you please! Tomorrow, perhaps? Ah, you will be more frien'ly then."

"If that's your bet, you lose!" said I.

Old Louis studied me for a full minute. Then he nodded to a man at my elbow, who caught my arm and very neatly swung me to the door of my stateroom cell and thrust me in. The bolt grated in its socket, and again I was alone in the darkness and the stifling closeness of the place. I groped my way to the bunk, and dropped upon it, to stare at nothing and review the circumstances of our flight.

The skipper had turned traitor; Jose, I reckoned, naturally would elect the easiest way to avoid trouble; I was safely caged. Old Louis plainly gave slight weight to any aid the yachtsmen might offer. Truly, the prospect for Grayson striving against such odds was as dark as the pitchy blackness of the tiny stateroom. Then there were the women to consider. Of course, Abels as a white man and a gentleman would do his best to see that Miss Perham as well as his sister came to no bodily harm; but Miss Perham's hope of salvage from the wreck had gone glimmering with ours. I lay in the bunk, thought over our distressful lot, and cursed Old Louis and the skipper and Fate, and did not forget myself in the list of excoriates.

There had been a deal of bustle on deck, following the scene in the cabin, and, as I judged, no less than three boats put off from the schooner in rapid succession. After their departure the vessel was very quiet. It was to be assumed that guards were left aboard her, but if they moved about the deck, their bare feet made no sound on the planks. Once or twice I thought I caught a murmur of voices, but of this I could not be certain; and again there were sounds too faint and distant to be identified.

There was a bullseye in the stateroom, but I could not open it, though I tried again and again, in the intervals between gloomy meditation upon our misfortunes and vain straining of my ears to get some clew to what might be doing aboard ship or ashore. At last, from sheer weariness, I fell into a doze, the lack of fresh air serving, it may be, as a sort of stupefying drug. From this I was roused with difficulty. Gradually and reluctantly I came back to consciousness that my head was aching villainously, that a light was shining through the open door, and that a fellow was doing his best to get me upon my feet. This he accomplished, presently, and I dully realized that I was half led, half carried through the cabin and up the ladder to the deck.

The night was not so dark that I could not make out several men, engaged in freighting a boat which lay alongside, toward which I was propelled, and into which I was lowered, after somebody had deftly tied my wrists behind my back and somebody else had bound a handkerchief about my eyes. The oars dipped, and the boat began to move through the water. Save for a gruff command or two not a word was spoken.

I have to confess that for a little I had no thought for anything but the relief from the misery of my cell and the physical joy of filling my lungs with the clean, clear air. Whither I was bound mattered nothing, so long as I widened the distance between me and that penitential hole. When the keel of the boat grated on the sand I had no notion upon which of the islands we were landing.

"Stand up!" said a voice in my ear.

I obeyed, and felt myself lifted over the gunwale. Somebody led me forward. Then the sand ended, and the footing grew firmer; now and again a branch brushed my head or shoulder; twice or thrice I heard the crackle of brush as men stepped aside to suffer us to pass; once there was a gutteral chuckle close to my ear. Then we came to a halt, and the guard removed the bandage from my eyes, stepping back as he did so.

There were walls about me and a roof overhead. I was in the hut on Witch's Island! A lantern clearly revealed the familiar interior as well as the figure of

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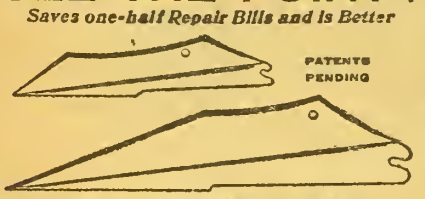

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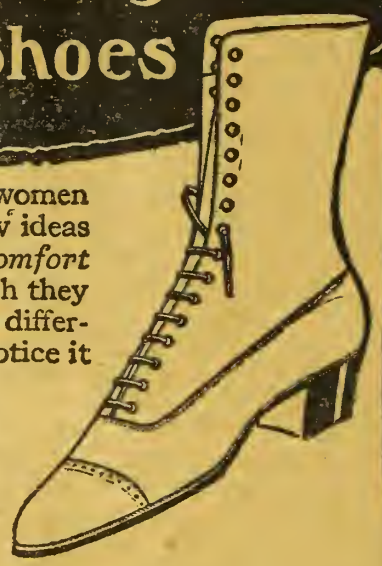

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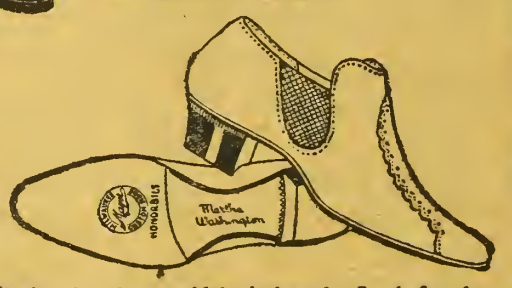

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a sentinel, gun in the hollow of his arm, lounging at the door.

I stared at him aghast. The enemy had captured and held the very citadel of the defence! But where were the defenders? Where was Grayson? Where was Hoban? What had befallen——

"Mr. Scott!"

I heard the words, and whipped about in all haste. If I was a prisoner, I was not alone in captivity. And my fellow prisoner was Edith Perham.

CHAPTER XXI.

Foes and Allies.

The girl came forward, and laid a hand on my shoulder. She was deadly pale, but there was no fear in the steady eyes.

"You're safe, unharmed?" she asked.

"They've trussed my arms," said I. "Otherwise, I've no great present plaint. And you?"

She disregarded the question, and stepping behind me, caught at the rope. The guard at the door straightened himself.

"No!" he said harshly. An instant she hesitated, then yielded to the inevitable, retreating to her former position.

"Don't risk a row," I counselled. "I'm well enough off, as it is. But how about the rest?"

"I don't know. I've seen none of them since the attack."

"There was a fight, of course? There must have been, though they took care to put me where I couldn't hear it."

"Yes, there was a fight. They came ashore in their boats, one landing near the Fair Lilian, another near the end of the path, the third off to the left—out of sight of the others."

"Flanking party?" I suggested.

She nodded "Yes. These men stole through the cover and cut off Mr Grayson and Hoban from the hut. But the first firing was near the yacht—a feint, possibly"

"The Fair Lilian showed fight, then?"

"I—I suppose so." She hesitated oddly; then added, "Dr. Abels was with them."

I peered into the shadowy corners of the hut. "Where's Mrs. Vincent?"

"She was with her brother, she wouldn't let him out of her sight."

"Panicky, eh?"

"She was—apprehensive."

"Umph!" said I. "Not that I blame her. Pity, though, there should have been a division of forces. Abels should have stayed here and brought his crowd over."

"Dr. Abels went with Mr. Grayson's consent and approval. Neither of them believed an attack in force likely, and the doctor was anxious to learn just what progress had been made in repairing the yacht."

"How about your adventures?"

"They told me to stay here, that it was the safest place. Yet it proved to be a trap, for the flanking party cut off my retreat."

The guard moved, but it was because of a disturbance from without, as Old Louis himself came up the path and stepped into the hut. Beholding his captives, he grinned broadly and doffed his hat with a flourish.

"You see, my frien'," he said, "eet is all over—finish'. I bring you here to know ze trut'. I have ze wreck; I have ze islan'; I have ze—" he paused an instant to show his teeth—"I have ze lady. Tomorrow you will make term'; you will agree; you will tell ze little secret Tomorrow, I say? Why not now? You will whisper in my ear an' you will be not tied with rope but be very good frien', an' in the morning we will seek ze treasure—yes, ze treasure—" he licked his lips as he repeated the word. "An' I will be generous to my good frien'. There shall be his share—oh yes, a ver' fine share. You say yes—now?"

"Louis," said I, "Captain Louis and whatever the rest of your names and titles may be, you've made a big blunder You've forgotten, or overlook, one Grayson."

"Oh, Grayson!" He snapped his fingers in fine scorn. "He is finish', wipe' out. He pay dear for ze trick he play me."

I have no reason to doubt that, on occasion, Old Louis was an able liar. The first requisite of the successful lie, however, is semblance of truth, and Louis's boast failed in this vital respect. Grayson might have to pay dearly for the old ruffian's enmity, but he was not wiped out—yet. He was neither dead nor a prisoner. So much I knew as by intuition. Grayson was at large, and Louis was bluffing. Also he was in haste, else he had not pressed his invasion of the island so vigorously, at risk of life and limb to himself and his followers.

"You will say yes—now?" he repeated. "A ver' fine share for you an' for ze lady.'

Somehow that gave the clue I'd been groping for. "Louis," said I, "I wonder if you've brains enough to know the blunder you've made. You or your gang have dared to lay dirty hands on this lady, deny her her liberty, put her under armed guard. A scrap with Grayson or me might be nobody's business to follow up but if you harm a hair of her head, there'll be no hiding place where the law won't reach you. There isn't a white man in the islands who won't make it his particular business to get you if he can, and there isn't a colonial governor who won't send a warship after you. Get that in your head and keep it there, will you? And if anything serious should happen to her—good Lord, man—you'd stretch hemp as sure as the sun'll rise tomorrow. Why didn't you let her alone? Why didn't you happen to think that when you interfered with her you were piling up heaps of trouble for yourself? Why didn't you? I'll tell you why—because you were a miserable fool."

His long arm shot out It was not a blow with clenched first in the manner of the Englishman or the American, but a tremendous shove—a straight-arm jolt—under which I dropped in my tracks

With a cry of horror Edith Perham sprang between, shielding me from further attack.

"You coward!" she blazed. "You monster! To strike a prisoner, bound and helpless!"

There was an instant in which the outcome trembled in the balance. The ugly face of Old Louis was contorted with rage, but his arms dropped to his side, and he fell back a pace. A glimmer of the truth I had tried to impress upon him was finding a way through his thick skull. This woman captive of his was likely to present difficult problems. Not that he was hampered by chivalrous scruples, but he was clever enough to know that harm to her might spell a day of bitter reckoning. At present we might be beyond the reach of the law, but some day he must make port with a crew of ruffians, half of whom were potential informers.

Cunning fought with rage for control of his expression, and won the fight. He backed to the door, spoke low and sharply to the sentinel, vanished from the hut.

The girl assisted me to rise, led me to a bench by the wall, and took her place beside me. The guard watched us closely, but did not interfere.

There was a long silence, which she ended.

"Mr. Scott, what are the chances of escape?" She put the question calmly, evenly, bravely.

"On the face of things, they're slender," said I. "The weight of numbers is all one way. When Old Louis landed his men and drove our friends back, he seized the heart of the island and the only water supply. He has posted pickets in a ring, no doubt. He wouldn't neglect such an evident precaution after his display of generalship in the attack. As for his next move—why, I'm as thoroughly in the dark as you can be."

She nodded thoughtfully. "We are equally in the dark, that is true. Yet I can't but have hopes. I feel that time is fighting for us, that every delay counts in our favor."

"The theory fits the facts, as we know them," I admitted. "The skipper tells all he knows about the work on the wreck, but he can't tell what Old Louis is most anxious to learn, and that is, not what we have done, but why we have done it and just what we are seeking. So Old Louis lays a trap for Grayson and catches me. So far I've resisted pressure, but I doubt if he's through with me. I expect that he has little ways of encouraging the reluctant tongue."

"But he would never dare——"

"We are wandering from the point," I interrupted, "and that's the part delay plays. I agree with you Old Louis is in a hurry, and just at present he's forced to mark time."

"Which Mr. Grayson won't do," she said with conviction.

"We can count on him, so far as lies in one man's power to block many men," said I.

"And Hoban is with him. And Hoban is true as steel."

"And there are Abel's yachtsmen," said I.

There was a pause, and when she spoke her voice was hardly raised above a whisper.

"I—I'm not sure of—well, of just what they'll do. I—I don't understand those people."

"Meaning Abels especially?" I queried. "He'll set the pace for them, naturally."

Out of the corner of an eye I could see that the fine line was showing in her forehead.

"It wasn't the doctor I had in mind so much as his sister," she told me. "I've not quite trusted her. There have been things——" she paused briefly. "I'm loath to speak of them—they seem so trifling to you—yet they've impressed me curiously. You'll remember how she was at first, when we met on the beach?"

"I recall very distinctly," said I, "that she contrived ingeniously to leave nothing as it had been in a—oh, in the social way, to put it bluntly."

"You could not put it more accurately. It was as if she cried aloud that there was a young woman, an unmarried woman, utterly unchaperoned, and that she had come, as from heaven, to fill the aching void."

In spite of the gravity of our situation I couldn't repress a chuckle at the recollection. "She did run affairs with a high hand. Took supreme command, by Jove! And you were like a lamb! And—and with us, you know, you'd been—well, call it magnificently unlamblike."

I had turned to look at her frankly and openly, but she shunned my eye.

"It wasn't until she came that independence was difficult. She made it impossible. And then her manner—to me, I mean—changed completely."

"Once boss, she was an easy boss," I suggested. "Grayson said something like that."

The girl shot a glance at me, but it was so swift that I failed to read its meaning.

"Mr. Grayson is a shrewd observer. She was good to me, tactful, considerate. And for a little she won me completely. She made me feel that it was vastly better that she should have come. And then, of a sudden, something warned me—I hardly know what, nothing, at any rate, I can put into words—warned me that she was gaining my confidence too far; that there was more art than heart in her tact and her sympathy."

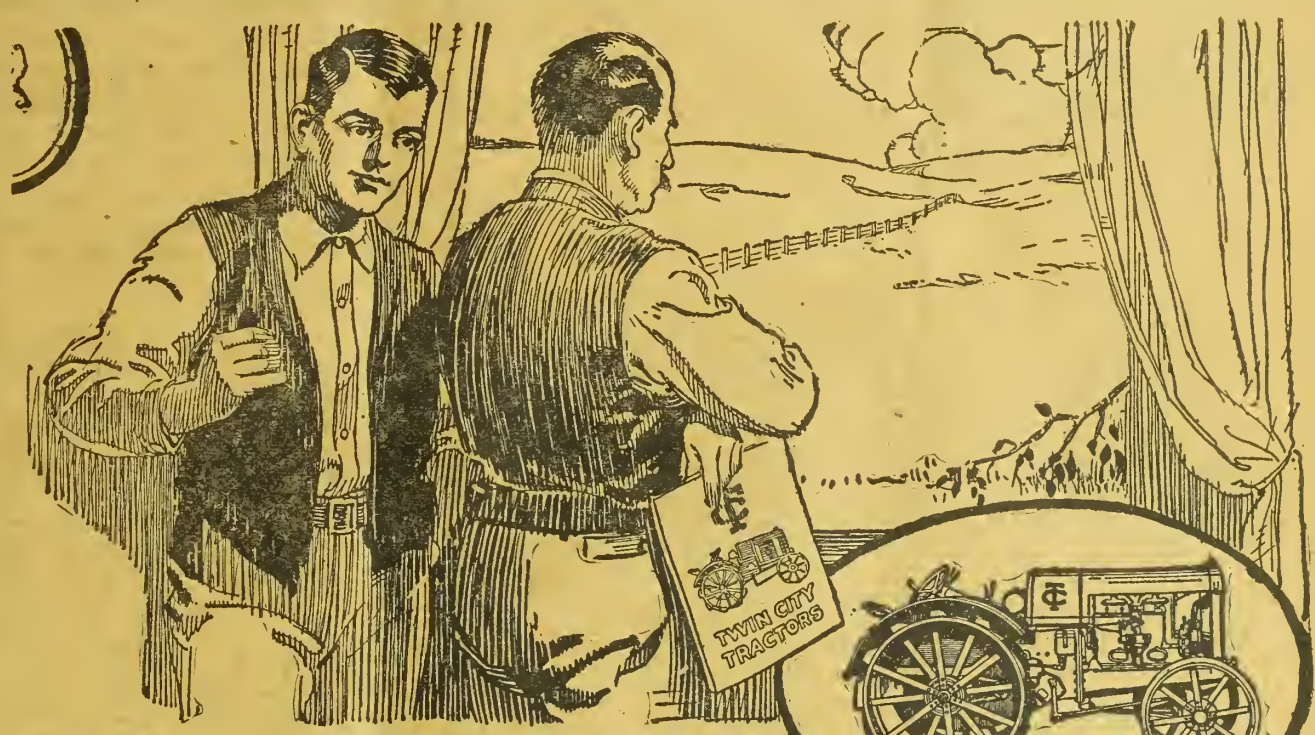
"And yet," I pointed out, "if she and her brother were trying to play the spy, they overlooked or neglected a lot of opportunities. To tell the truth, Abels has appeared to me to be chiefly interested in pottering about after bugs and butterflies and Mrs. Vincent in—well in flirting with Grayson."

"She is a flirt!" Miss Perham spoke quickly. "But she was flirting with me, too. To learn things, don't you understand?"

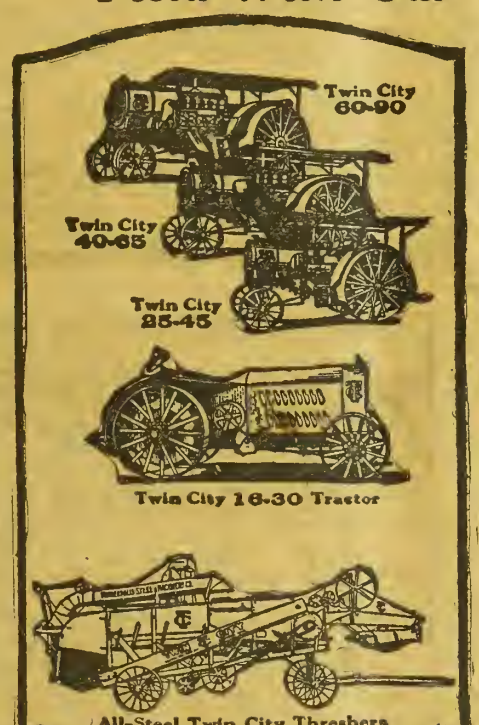
"Well," said I, "there's curiosity in most human breasts. And this situation, as she found it, was a bit uncommon."

"No, it wasn't mere curiosity," the girl said firmly: "It was more. It was planned, systematic, methodical. And

(Turn to Page 29).



"We Can Break That Old Alfalfa Field With Our Twin City"



THE toughest going in the old alfalfa field won't halt the Twin City 12-20, for it has built into it the surplus power to take the plows straight through and the surplus strength to stand up under continuous load.

Farmers everywhere know the performance of the Twin City 12-20 Tractor. Many of them know the engineering science—in design and construction—that makes this performance possible.

Sixteen (Valve-in-Head) Engine for perfect kerosene burning; removable cylinder head and cylinder walls, for easy access and quick adjustments; counterbalanced crankshaft for reduced vibration; transmission, direct on both forward speeds; mounted on Hyatt roller bearings; gears drop forged, steel cut and case hardened, running in a dust-proof oil bath.

The result is a surplus-powered tractor of great strength, light weight, low operating cost and thorough dependability—*built to do the work, not to meet a price.*

Write us today for full particulars of this Twin City 12-20. Also ask about the all-steel Twin City Threshers.

TWIN CITY COMPANY, Minneapolis, U. S. A.

Selling Products of

MINNEAPOLIS STEEL & MACHINERY CO.

Branches

Denver, Col. Des Moines, Ia. Fargo, N. D. Great Falls, Mont. Salt Lake City, Utah Spokane, Wash. Wichita, Kan. Indianapolis, Ind. Peoria, Ill. St. Louis, Mo. Kansas City, Mo. Lincoln, Neb.

Distributors

Frank O. Renstrom Co.—San Francisco, Los Angeles, Stockton, Oakland and Sacramento, Calif. Baskerville & Dahl Co.—Watertown, S. D. Southern Machinery Co.—Atlanta, Ga. R. B. George Machinery Co.,—Dallas, Houston, Amarillo, San Antonio, Texas; and Crowley, La.

Eastern and Export Offices

Minneapolis Steel & Machinery Co.—154 Nassau Street, New York City

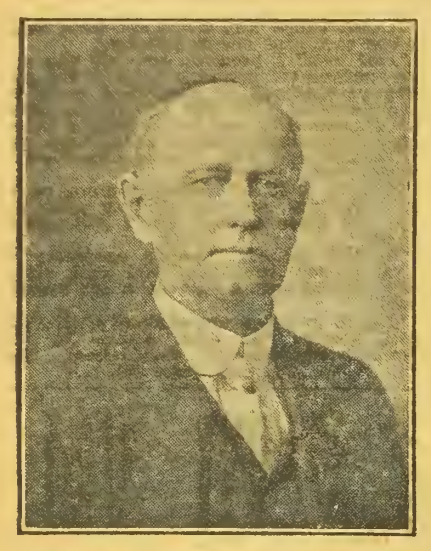
Canadian Distributors: Minneapolis Steel & Machinery Co. of Canada, Ltd. Winnipeg, Man.; Regina, Sask.; Calgary, Alberta

TWIN CITY

12-20 Kerosene Tractor with 16-valve engine

Early Start for Fairs.

An early start is being made this year toward putting the various county fairs of Colorado strictly on an educational basis. The Colorado state fair commissioners are taking the lead in this work, having set the pace by making the State Fair at Pueblo one of the best in the west from the educational standpoint. Everything possible is being done to foster better farming and enhance interest in purebred livestock of all classes. In line with this policy the Colorado state fair commissioners recently called together the managers and secretaries of county fairs from various sections of Colorado. There was a splendid representation



J. L. Beaman, Manager, Colorado State Fair.

and the program of addresses and discussions included such subjects as the following:

Are Fairs Drifting to Amusements?—Geo. R Smith, secretary, Adams County Fair, Brighton.

Publicity and How to Handle It.—J. L. Beaman, manager, State Fair, Pueblo.

Gate and Grand Stand Admissions; what they should be and the Effect of Raising Them.—J. L. Miller, secretary, Arkansas Valley Fair, Rocky Ford.

County Fairs and Livestock Standards in Colorado.—R. R. Lancaster, Animal Husbandry, Ft. Collins.

Games and Concessions.—G. J. Funk, secretary, Logan County Fair, Sterling.

Expressions were heard from every county represented and these were uniformly in favor of emphasizing the things that would benefit agriculture and cutting out excess amusements. Of course, it was realized that there must be strong attractive features of entertainment but the concensus of opinion was that these were not the main reasons for holding fairs and therefore must be held in the background, while the educational features should be stressed.

The counties represented included Morgan, Logan, Larimer, Boulder, Adams, Pueblo, Otero, Prowers, Routt, Conejos, Yuma and Montrose.

It is expected to hold conventions of this kind annually for the purpose of making Colorado's county fairs the best in the country and improving the State fair from year to year. Out of this conference has grown a movement for standardization of classification, uniform judging systems, discouragement of different breeds of stock competing against each other and discouragement of premiums for grade sires of any kind.

Mr. J. L. Beaman, manager of the State fair was assisted in handling the program by President Martin Walter, Jr., Secretary John J. Tobin and Treasurer Wyatt Boger of the Colorado State fair commission. It was decided to hold the next convention at Sterling Feb. 2, 1921.

Fair dates so far announced for Colorado are as follows:

Colorado State Fair, Pueblo, Sept. 19-25, J. L. Beaman, manager.

Arkansas Valley Fair, Rocky Ford, Sept. 14-17, J. L. Miller, secretary.

Boulder County Fair, Longmont, Sept. 7-11, H. C. Nevin, secretary.

Conejos County Fair, Manassa, Sept. 15-17, G. Wayne Roberts, secretary.

El Paso County Fair Calhan, Sept. 30, Oct. 1-2, D. E. Nance, secretary.

Larimer County Fair, Loveland, Aug. 30, Sept 1, 2, 3, J. W. Thompson, secretary.

Logan County Fair, Sterling, Sept. 14-17, C. J. Funk, secretary.

Routt County Fair, Hayden, Sept. 14-17, B. T. Shelton, secretary.

Representatives present from the various counties were the following named: H. B. Dye, Manzanola; C. F. Hampton, Holly; Harry C. Nevin, Longmont; R. L. Ripley, Ft. Morgan; W. E. Henning, Peetz; R. R. Lancaster, Ft. Collins; Dr. J. W. Thompson, Loveland; Ralph Rhoades, representing F. M. Barnes, Chicago; Geo. R. Smith, Brighton; Martin Walter, Jr., Pueblo; John J. Tobin, Montrose; N. R. McCreery, Longmont; Charles Ballreich, Pueblo; H. W. James, Brighton; Wyatt Boger, Burlington; W. W. Williams, Yuma; C. M. Morris, Fleming; B. T. Shelton, Hayden; G. Wayne Robers, Manassa; Hugh Scilley, Loveland; Chas. Mullvay, representing Kemper-Thomas, Cincinnati, O.; C. J. Funk, Sterling; Chas. W. Pace, Longmont; W. J. Brown, Rocky Ford; Lloyd C. Harris, Longmont; D. W. Thomas, Denver Civic and Commercial Association.

National Master Visits Grange.

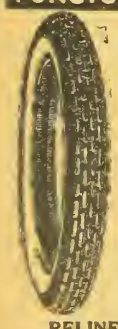
Darden-Pomona Grange meeting at Maple Grove hall, near Golden, received a pleasant surprise on March 6, when National Master S. J. Lowell of New York state paid the Grangers a visit on his western tour. He was accompanied by State Master John Morris and delivered an address which was inspiring and helpful. He had many things to say regarding progress of the Grange all over the Unitd States, and his words of advice and suggestion were especially heartening to the Grangers. He felt that there was no reason for depression or pessimism regarding the future of agriculture.

Others who addressed the session during the afternoon were County Agent McCaslin of Jefferson county, Representative C. W. Hall, the well-known Holstein breeder. In the evening Mr. R. L. Crosman, Editor of Publications for the Agricultural College, provided an educational entertainment comprising the showing of moving pictures of Agricultural college activities. The movies were very much appreciated. There was music and other features of entertainment, the meeting as a whole being one of the best held in many months.

Shorthorn Sale At Farnam.

Shorthorns from blue-blooded Scotch families are to be offered in a combination sale at Farnam, Neb., April 14th by two well known breeders, Godfrey & Godfrey of Cozad and E. W. Crossgrove & Sons of Farnam. The announcement of the sale which appears in the advertising columns of the present issue shows that this will give farmers and ranchmen an opportunity to select bulls and cows in breeding shape, and from splendid ancestry. The offering will include 24 bulls and 28 females. These sires are ready for service and of the cows some are with calf at foot and others bred to noted herd sires in use by the two consignors. The advertisement on another page of this issue gives full particulars.

Save 65% Tires
5000 Mile Gtd
PUNCTURE PROOF TUBE FREE



The genuine satisfaction Durable Tires have given car owners year after year is responsible for this year's enormous demand. Durable Tires are reconstructed tires, reinforced with four extra layers of stoutest fabric Every tire is entirely wrapped and protected. We include FREE with each tire 1 puncture proof inner tube which we guarantee against punctures for one year Written guarantee enclosed with every tire.

Prices Include Tire and Free Tube

30 x 3	$ 7.85	32 x 4½	$11.90
30 x 3½	8.45	33 x 4½	12.45
32 x 3½ S. S. only	9.05	34 x 4½	13.10
31 x 4	10.30	35 x 4½	13.35
32 x 4	10.65	36 x 4½	13.85
33 x 4	11.10	35 x 5	14.85
34 x 4	11.45	36 x 5	14.95

RELINER FREE WITH EVERY TIRE

State whether you want straight side or clincher, plain or non-skid. Send $2.00 deposit for each tire ordered, balance C. O. D., subject to examination, or 5 per cent discount if full amount is sent with order.

DURABLE TIRE & RUBBER COMPANY
2406 W. Chicago Ave., Dept. D, CHICAGO, ILL.

Big Money Boring Wells

One Man One Team

Have water on your own farm. In spare time make wells for your neighbors. It means $1000 extra in ordinary years, double that in dry years. No risk—no experience needed.

Outfits for Getting Water Anywhere

Earth augers, rock drills and combined machines. Engine or horse power. *Write for easy terms and free catalog.*

LISLE MFG. CO.,
Box 743 Clarinda, Iowa

PHOTO SUPPLY HOUSE

KODAKS—FILMS and Professional Photo Supplies

FORD'S, 1029 16th Street Denver

Develops Films. Print Pictures. Mail Orders Solicited. Catalog Free on Request.

SEE that beautiful field of tasseled corn? Hear the cool rustle and swish of the blade-like leaves and the sturdy stalks as the breeze roves through the even-standing forest of green and gold?

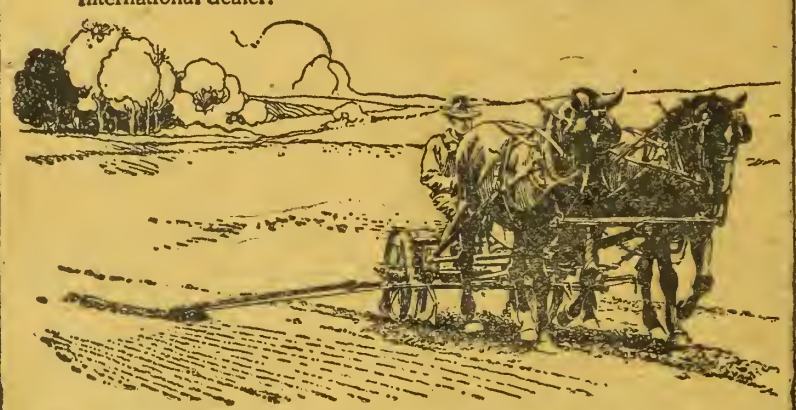
Bright prospects for some one! That field of corn may belong to you. If the stand is regular and heavy it is just the kind that grows where an **International Corn Planter** has been at work earlier in the season. Bright crop prospects go hand in hand with these planters because—

The variable drop clutch will deposit 2, 3, or 4 kernels to the hill, as desired, and it works with a high degree of accuracy. Correct planting is an essential to good crops.

The tongue is adjustable to height of team and, together with the quick action check spring, results in an evenly checked field that can be cross cultivated without digging up any of the hills. Insures healthy, even stand of corn.

A foot drop lever is provided for planting head rows or dropping hills without wire. Makes a nicely completed, full field when used the first way and enables you to make use of every foot of ground in "patchy" fields.

If you are interested in bright corn prospects it will pay you to scribble your name and address along the margin of this advertisement and mail to us so that we can send you an illustrated pamphlet telling all about **International Corn Planters.** Later—see the International dealer.

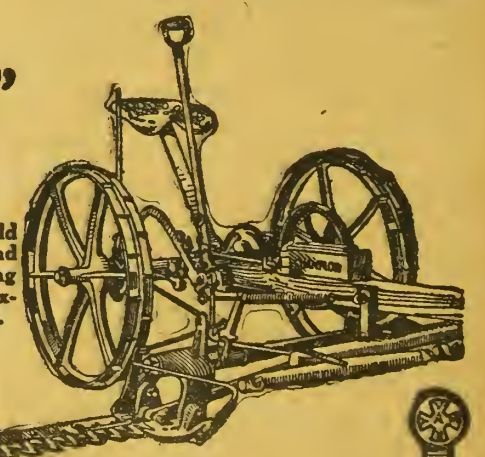


INTERNATIONAL HARVESTER COMPANY
OF AMERICA
(INCORPORATED)

Billings, Mont. Cheyenne, Wyo. Denver, Colo. Helena, Mon.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

"Champion" Mowers

enjoy a reputation the world over for doing fine work and doing it for a long time, with little expense for repairs.



This year thousands of farmers will use "Champion" machines that have been on the job for upwards of twenty years.

"CHAMPION" Features You Will Like

The knife head is unusually long, giving extra strength just where many cutter bars break.

Pitman connection to knife head has a self-adjusting device that automatically takes up wear.

Outer end of pitman crank box is closed and an oil chamber is provided which holds enough oil to keep the box lubricated for several hours.

The flywheel shield is made of malleable iron, rendering breakage very unlikely. In case of breakage the shield can easily be removed and replaced at small cost because it is a separate piece—not a part of the main frame.

Call on the B. F. Avery dealer and give the "Champion" Mower a thorough "going over."

FOUNDED 1825 **B. F. AVERY** AND SONS INCORPORATED 1877

LOUISVILLE, KENTUCKY

What Will the Farm Bureau Do For the Farmer?

ALFRED M. WILSON.

In view of the rapid growth of the Farm Bureau movement in the last three years, it is not at all strange that farmers in communities where the Farm Bureau is still something of an innovation should be asking some close and searching questions. One of the questions frequently asked is: What will the Farm Bureau do for the farmer? The question is natural, and the answer is not far afield: The Farm Bureau will do for the farmers of the country what they want it to do for them, no more, no less.

The Farm Bureau is an organization of farmers, by farmers, and for farmers. They, and they only, are the ones who shall determine what shall be the nature and scope of the work that they want the Farm Bureau to do for them. They know what as farmers their problems are, and out of a knowledge of those problems they will construct their program of work. No program of work, however, is self-executing. But if the Farm Bureau and its work are to be vital factors in making farmers more efficient and more independent and in making farming, the basic industry of the country, more productive and more remunerative, the farmers themselves must supply the driving force and the motive power.

The sooner, moreover, that farmers realize that their industrial and economic salvation depends, not upon others, but upon themselves, the better it will be for all concerned. That is a problem which they must squarely face and by intelligent co-operation solve, if the problem is ever to be solved. I do not, therefore, quite like the form in which the question is put: What will the Farm Bureau do for the farmer? It implies something that we want to get away from. One may properly ask in regard, for example, to a life insurance company, what will it do for me? Well, the company will pay the insured or his heirs the face value of the policy at date of maturity. All that the insured has to do is to keep up his premiums; the company will do the rest; all the rest. I can imagine a farmers' organization conducted on that principle; an organization in which those at the top should say: "You farmers, keep up your dues. That's all you need to do. We'll do the rest—the thinking, the planning, the executing." That, however, is not the Farm Bureau idea. On the contrary, the Farm Bureau will be, and the Farm Bureau will do, what the farmers themselves will it to be and will it to do. And that to me is the great encouraging fact in connection with the Farm Bureau movement; for "who wills greatly, conquers greatly." According as farmers shall will, and act, the Farm Bureau will be either a toy pistol, having the form but not the force of an effective weapon, or a Big Bertha that shall carry the farmer's thought and purpose even from the most remote rural community, as far even as Washington itself.

Witch's Island.

(Continued from Page 27).

then at last—tonight—when Dr. Abels was starting for the yacht, she ran after him, calling upon him to wait for her, saying she wouldn't be parted from him."

"That was because she was frightened," said I. "And no wonder!"

"But even if she were frightened," quoth Miss Perham dryly, "why should she have called him George?"

"Eh?" said I.

"His given name having previously been Howard, at least during our acquaintance."

I whistled. "That's a fact! But it must have been a slip of the tongue, due to excitement."

"I think it was just that. For an instant she forgot."

"Forgot?" I repeated. "Mixed him up with somebody else; her late husband, for instance?"

Miss Perham's lip curled. "Not she! She called him George because his name is George, and because for just a fatal second she forgot her role and his."

"It was an odd incident," I agreed. "Still, you may be attaching too great importance to it."

She shook her head. "I don't trust those people, I can't;" she said stubbornly.

"But Old Louis has put them in the same boat with us."

"Nevertheless, I can't quite trust them," she said again.

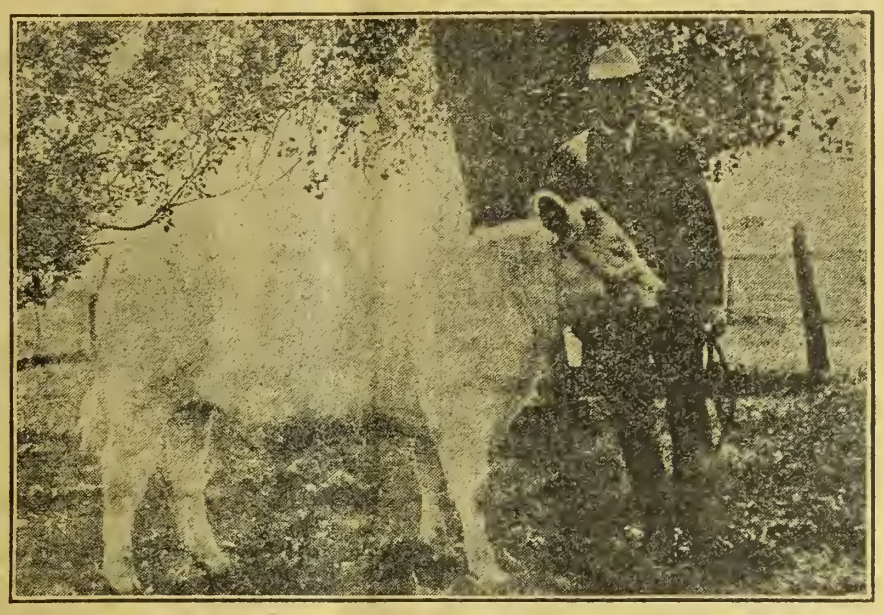
There was a stir at the door, and the sentry gave place to two men, one of whom stepped into the hut and laid hand upon my shoulder.

"You come!" he said gruffly.

(To be continued.)

Beet Price $12 A Ton.

Announcement of a settlement of the Colorado sugar beet price controversy was made March 9th, when the Mountain States Growers decided to leave the matter of signing contracts up to the individual growers. The price offered by the Great Western Sugar company, which will no doubt be followed by other companies, is $12 per ton flat, with $1 per ton bonus for each cent per pound in excess of 11 cents for sugar at seaboard. The growers sent a committee to Washington, where they obtained a promise from the Department of Justice to investigate alleged exorbitant profits of the manufacturers.



A SPLENDID SHORTHORN SIRE.

Royal Type, owned by H. F. Harmon, Boulder, Colo., at 8 months of age, purchased from D. Warnock & Sons in dam; winning third at the National Western Stock Show in Denver in the senior bull calf class, and first in the Western Futurity. He was shown by D. Warnock & Sons. This bull now heads Mr. Harmon's herd and is an outstanding good one and ought to sire high class show cattle.

No More Corn Imports.

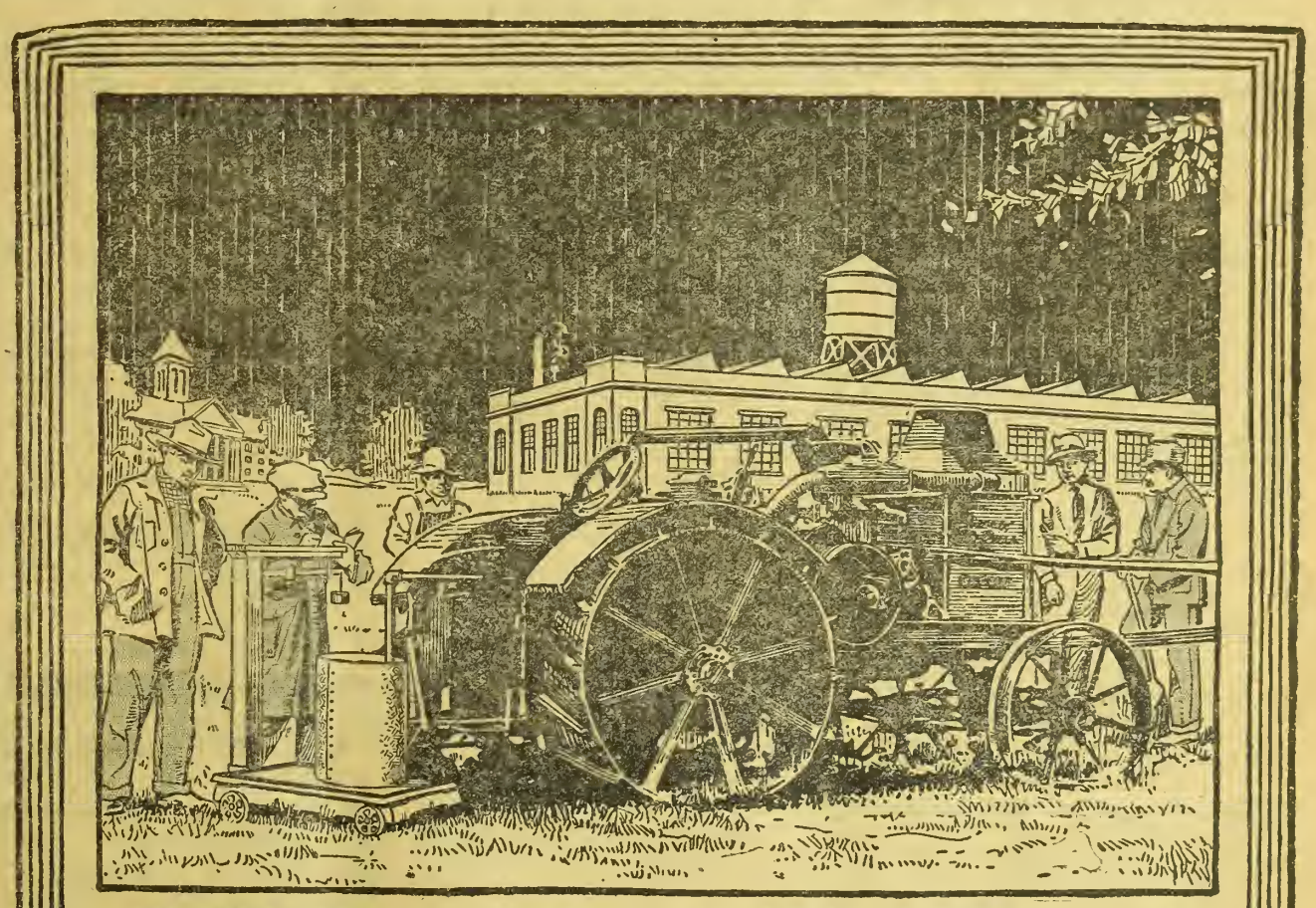
Broom corn for manufacturing purposes may be imported hereafter only under permit and when its condition is such that it can be satisfactorily disinfected at port of entry, under a quarantine placed by the Secretary of Agriculture, effective February 21, 1920. Indian corn and certain related plants from all foreign countries are denied entry into the United States in the raw or unmanufactured state, except sorghum hay from Canada and the shelled or thrashed grain, from any country, of the plants included in the quarantine. The quarantine applies, in addition to broom corn and Indian corn, to such related plants as sweet sorghums, grain sorghums, sugar cane, Sudan grass, Johnson grass, pearl millet, Napier grass, Teosinte, and Job's tears.

The necessity for such a quarantine was demonstrated a week or so ago by the discovery of living larvae of the corn borer in some 97 bales of broom corn shipped from Italy to New York, the first considerable shipment of foreign broom corn since the war period. It has been definitely determined that the European corn borer, now known to exist in Massachusetts, New Hampshire, New York, and Pennsylvania, originally reached this country through the medium of imported broom corn.

Also Hopeless.

"I can remember when people thought the telephone was something impossible."

"Well, ours is."—Washington Star.



OilPull again breaks World Record

At the Winnipeg tractor contest in 1912 the OilPull established a world's record for fuel economy in tractor motors by using only .7 pound of fuel per horse-power hour.

For eight years this record stood unequaled. But in January, 1920, it was again broken by another OilPull. At the tractor fuel economy tests held by the Ohio State University at Columbus, a 12-20 OilPull established a new world's record—for either kerosene or gasoline burning tractor motors—of .606 pounds of kerosene fuel per horse-power hour. This lowered the old OilPull record by over 13%.

Thus, again, in public test has the OilPull tractor demonstrated its remarkable economy. OilPull economy, dependability and durability are even better proved by the unequaled record of OilPull performance in the hands of thousands of farmers since the birth of the tractor industry.

OilPulls are built in four sizes—12-20, 16-30, 20-40 and 30-60 H. P. It is only fair to mention that but few 1920 OilPulls remain unsold.

RUMELY OILPULL TRACTOR

Write for the OilPull Catalog

ADVANCE-RUMELY THRESHER COMPANY, Inc.

LaPorte, Indiana

Kansas City, Mo. Portland, Ore.

ADVANCE-RUMELY

On Handling Dynamite.

Among people generally, there seems to be an idea that the slightest shock or jar, such as dropping a stick of dynamite on the ground, will cause it to explode. This is not true. In fact, it is practically impossible to explode ordinary 20 to 40 per cent ammonia dynamite without a cap. The writer saw one carload in a railroad wreck in which there were 280 boxes mashed up so they had to be repacked. No explosion occurred. However, this statement should not be taken as a license to mistreat the explosive. It is desired merely to emphasize the fact that dynamite, if handled carefully, is as safe to use as any commodity on the farm.

On the other hand, caps are much more sensitive and should be handled as carefully as possible, and always kept away from any place where their accidental explosion might put off a quantity of dynamite.

The writer has time after time heard farmers say, "Why, dynamite won't explode from heat!" "You can burn it without its exploding." This is true in probably 95 per cent of cases, but in the other five it does explode from heat or fire. You never know when your case may be one of the five per cent. Therefore, never thaw dynamite in front of a fire, in the bake oven, or on a boiler. You say you know of hundreds of cases where it has been done safely. I know of dozens of cases where death and destruction have been the result.

Another bad method of thawing, commonly used, is to place the dynamite directly in hot water. This causes the nitro-glycerin in the dynamite to come out into the water. You lose strength on the dynamite and may have an accident from the nitro-glycerin sticking to the pail.

There is no necessity or excuse for a farmer taking chances on any of the above methods. On the average farm there is a pile of horse manure in which the box may be buried over night, and when you desire to use the explosive in the morning it will be thoroughly and safely thawed. If this method is not practicable, a wash tub may be half filled with water (not too warm to place your hand in it), and the dynamite placed in a dry pail or pan which may be set in the water and covered with an old piece of carpet. Always remember that the rules in the box are based on a thorough investigation of all accidents, and it pays to observe "Safety First." I know a man who brought several boxes of dynamite home, placed them in the kitchen by the stove with the caps. He went to put his horses in the barn. Before he got back, his house, his wife and seven children were gone. Dynamite resents the implication that it is "fool proof."

As to caps: The greatest number of accidents come from carelessly leaving them around the house or barn where children get hold of them. I have known of many accidents from this cause. Your hurry may cause your child the loss of an eye or a hand. Put the caps where the children cannot get them. The old hardened blaster often crimps the caps into the fuse with his teeth—yet, there is no better way to loose your head or a piece of your jaw. A knife or pinchers is equally dangerous. Use a crimper! It does not cost much and is absolutely safe.

Do not ever carry the caps in your pocket. I know a man who put a box in his overalls' pocket. He forgot them and shoved his hot pipe down on top of the box. He stayed in the hospital nearly a year. Always carry them in a box or basket in which there is some soft material.

Finally, in taking your explosives out to the field, it is best to carry the caps and dynamite in separate boxes. Use a dynamite case or similar box fitted with a handle. On the outside of it nail a thick strip slotted to hold your knife and crimpers. Carry the caps in a separate box with a tight lid. Then don't smoke while blasting.

If you observe the above precautions you will avoid the only accidents of which I have heard in four years of daily contact with dynamite on the farm.—Guy G. Means.

A Celery Trencher.

A machine invented by Carl P. Wallace of Wheatridge, Colo., performs the novel function of trenching celery plants. Heretofore this work has been performed by hand, which has been a slow process. With a machine it is quickly accomplished. The machine

Celery Trencher Invented by a Colorado Farmer.

comprises a main frame mounted on wheels and an auxiliary frame mounted on the main frame adjustably and carrying a casing adapted to enter a trench while the ground wheels occupy a position on opposite sides of the trench. A follower reciprocates in the casing. Bars connected with the follower extend forward and provide a journal for a rock spindle. The rock spindle carries a lever arm and also arms fast on the rock spindle at the forward ends. These arms are adjustable to cause them to enter the ground and in part resist the force applied to the follower, the reaction of which causes the machine to travel forwardly when in use.

The celery is brought to the machine in boxes made especially to fit it, the celery being placed in the boxes in a straight pile, the tops of the celery plants facing toward the trench. The hinged bottom of the hopper is lifted up quickly to keep the celery from slipping out of place and then the whole bunch is put down in the trench together and it ready to be packed. A plunger catches the celery close to the roots and pulls it forward into the space where it is deposited. After one celery plant has been fed into the trench the machine is moved forward by the operation of the main lever, causing it to take a step ahead ready for a new operation.—Lester L. Sargent.

Carbide For Prairie Dogs.

Mrs. A. Williamson of Sligo, Colo., forwards a clipping from a New Mexico newspaper containing a suggestion for killing prairie dogs that looks good and was found to do the work perfectly on the Williamson ranch. The only thing added by Mrs. Williamson is a note of caution not to inhale the fumes while handling the gas. Let the prairie dogs do the inhaling. Here is the suggestion:

"Tex" Pickard is exterminating prairie dogs by the thousands by gassing the pests, by a method he devised himself. He uses acetylene gas which is generated in the burrows several feet under ground. He puts a small quantity of the carbide in a can which is fastened to a stick. A little water is poured on the carbide and the can pushed down into the hole. The mouth of the burrow is covered with a piece of paper and earth packed down on top of the paper to prevent the gas escaping. The carbide generates the gas rapidly and within a short time the burrow is full of gas and the prairie dogs die. Ten pounds of carbide will generate enough to kill a thousand prairie dogs. The method of ridding the country of one of its most destructive pests is very simple and costs but little compared with some of the other methods in use. No special apparatus is necessary, any rancher can do the work and in a little while can kill every prairie dog on his ranch. Mr. Pickard has tried this method very successfully on his ranch south of town."

The First National Bank of Rupert, Idaho, has decided to furnish $10,000 at 5 per cent interest for the purchase of calves to be used by boys in the calf club of Minidoka county. A Shorthorn and Holstein club will be organized and it is expected by farm bureau workers that 20 or 25 reliable boys will become owners of purebred livestock through this arrangement.

Lettuce has a soothing effect on the nerves, and is excellent for sufferers from insomnia.

Rider Agents Wanted

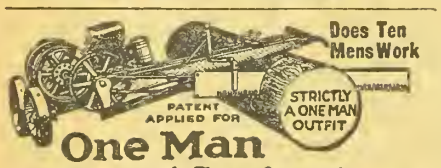
Everywhere to ride and exhibit the new **Ranger "Motor-bike"** completely equipped with electric light and horn, carrier, stand, tool tank, coaster-brake, mud guards and anti-skid tires. **Choice of 44 other styles,** colors and sizes in the **"Ranger"** line of bicycles.

EASY PAYMENTS if desired at a small advance over our Special wholesale cash prices.

DELIVERED FREE on approval and **30 DAYS TRIAL.**

TIRES Lamps, Wheels, Sundries, and parts—at half usual prices. **SEND NO MONEY** but tell us exactly what you need. Do not buy until you get our prices, terms and the big FREE catalog.

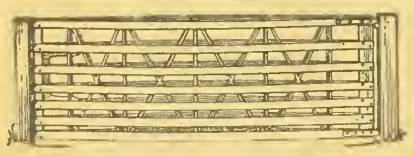
MEAD CYCLE COMPANY Dept. S-304 Chicago



One Man Saws 25 Cords a Day

The Ottawa Log Saw falls trees or cuts off stumps level with ground, Saws up logs, cuts up branches, ice cutter, runs pump jack and other belt machinery. Mounted on wheels. Easy to move anywhere. 10 Year Guarantee. 30 Days Trial. Write for Free Book and Cash or Easy Terms.

OTTAWA MFG. CO., 2511 Wood St., Ottawa, Kans.



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Double bow; aeroplane construction. Light weight; can't sag, bend, twist or warp. Agents wanted everywhere. Write for particulars.

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"Why don't you let dynamite do your digging? Man alive, the energy you waste would plant twenty times your acreage if you used explosives. And think of the money you're paying out for help. You don't have to pay any wages to dynamite. Try it and see how easy it is. One blast and the hole is ready for the tree and, say, how those trees will grow when you plant 'em in holes dug with

HERCULES DYNAMITE

"Send for a copy of 'Progressive Cultivation'. This book will give you detailed information, with pictures and diagrams, about tree planting, ditching, stump blasting, subsoiling and doing many other things with the help of explosives. Every rancher and orchardist should have this book—*and they can have it for the asking.*"

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Experts predict continued high prices for corn. All the more reason to plant good seed and be assured a big crop yield. Labor costs too much, time and land are too valuable to waste with uncertain seed. Barteldes Seed Corn positively gets satisfactory results.

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Rural Education Abroad.

DR. L. S. DIJKSTRA, Holland

Comparing the rural education system in different foreign countries that are foremost in thrift, economy and knowledge, with American rural education, it may be said that there is still a wide field for improvement in America. On the other hand, some of the old countries would be benefited by adopting features of American rural education systems. In the following I hope to explain to the reader the system of rural education abroad, and then the deficiencies of that system, in comparison with ours, and finally give some hints on improving our system.

The laws in the old countries prescribe that every child that has reached the age of five years has to follow the grade or elementary school to its thirteenth year. The elementary school is an eight class school, with maximum of 40 and minimum of 12 children in each class. Contrary to what we find in America in many instances only the first class of the elementary school stands under the leadership of a lady teacher. The other classes all have a male teacher. The law requires that the teacher must take a six-year course in a governmnt teacher school. Their wages vary from $300 to $1,000 a year, depending on the number of courses they have finished. If the teacher, for instance, passes the examination for agricultural teacher he receives $50 extra a year. The course at the elementary school lasts the full year with the exception of a summer vacation of 21 days, a Christmas vacation of 14 days and an Easter vacation of 12 days. The school hours are 8:30 to 12 a. m., and 1:30 to 4 p. m. No child is excused from attendance unless the reason is a serious one, such as sickness, in which case the doctor's certificate must be shown. Other excuses such as helping father or mother at home, are not accepted, fines of $5 to $10 being provided against the parents. If the farm boy and girl has finished the elementary course there are many ways open for further development in knowledge. The great majority stay on the farm and the ones who want further study go to the high school, the gymnasium, the lyceum or the vocational institutions. The latter may be called continuation schools.

There are two kinds of high schools, one with a three-year course and one with a five-year course. These high schools lead up to different departments of social life; whereas the gymnasium and lyceum are designed for doctors, preachers, lawyers and other professions. The vocational institutions lead up to some special branch; for instance, architecture or agriculture. Many of the boys and girls who stay on the farm after their thirteenth year later enter vocational institutions for agriculture.

These institutions for elementary agriculture are indeed worth while. Sessions are held during two succeeding winter seasons from October till May, every Wednesday and Saturday from 1 to 5 p. m. The instructor teaches the principles of agriculture, dairying, chemistry, etc., and last but not least, many interesting experiments are performed and they generally hit the mark, for everybody knows there is no better lesson than showing exprimentally the theory in practice. The pupils are sometimes obliged to walk hours through mud, snow, etc., but they come, which is surely a sign that the lessons are appreciatd. During the summer the pupils make trips from time to time, to demonstration fields and farms to see the working of machines, etc., bulletins showing the kind of demonstration often being nailed up on trees, school houses, etc., in the district. The attendance is generally good. Local newspapers do their part in advertising this demonstration work.

Our American schools might do a good work along similar lines, with the aid of the county agents.

In Europe two kinds of rural high schools are found. The first are for the farmer boys and girls, who want to know something more on general farming and dairying and whose purse often does not allow them to follow the other rural high school. This rural high school holds sessions during two winter seasons from October to May, with summer demonstrations. They are open every day with the exception of Saturday afternoon. To be admitted to this rural high school the pupil must pass a competitive examination. This school serves a useful purpose and is yearly attended by hundreds. The other rural high school is generally attended by well-to-do farmer boys and girls, and only those are admitted who have passed the examination of the three-year city high school, or the fourth class of the gymnasium, or lyceum. The course of this school lasts three years. It instructs along the usual high school subjects, and, in addition agricultural topics, home economics, and manual training.

The number of rural universities is rather small with a limited enrollment. The rural universities train people for high official rural positions, professorships in the rural high schools, doctors in agriculture, professors in dairying, animal husbandry, agricultural chemistry, nature study, technology, etc. To this school only those are admitted who have a diploma from the five-year city high school. The school has a six years' course.

If I am allowed to criticise here a little, I believe that our American professors in agriculture are of more general benefit to the peoples' welfare than the old country professors. The reason for this is that though the old country professors may have a thorough knowledge of agriculture and many other subjects, many of them lack the practical training which is typical of our American professors. The fact is that though theory and practice are both of enormous value, this value is appreciated only where they are combined.

Among the deficiencies in the old country system of rural education may be mentioned the law that every child from 5 to 13 years has to attend school every day.

The school is excellent from the standpoint of the curriculum and it certainly lays a foundation for future citizenship, but I believe it is inferior to the American system in some respects. People in Europe consider Americans as a wondrous people, a substantial self-made people, and Americans really deserve this reputation. Take for instance the farm boy or girl. In the old countries the summer vacation is only 21 days and here it is from three to four months. Now we ask, what does the country boy do in those 21 days? Some of them work perhaps a little on on the farm, but from my own youth I remember very well how we fixed a program to spend those 21 days in the most enjoyable way. Such a program was fishing, ball playing, family visits, trips, and on each boy's program I think the item "naughty tricks" might be found. The doing of any work on the farm was rather considered as drudgery. In America, however, the farm boy and girl spend much of their vacation time on the farm, helping father and mother and getting in that way much farm and household experience. Another excellent thing that trains the American farm boy or girl for future farming is certainly this: That on many a farm the boy or girl acquires ownership of a calf or a pig, or a piece of farm land, etc., which they have to take care of and from which they draw their own profits.

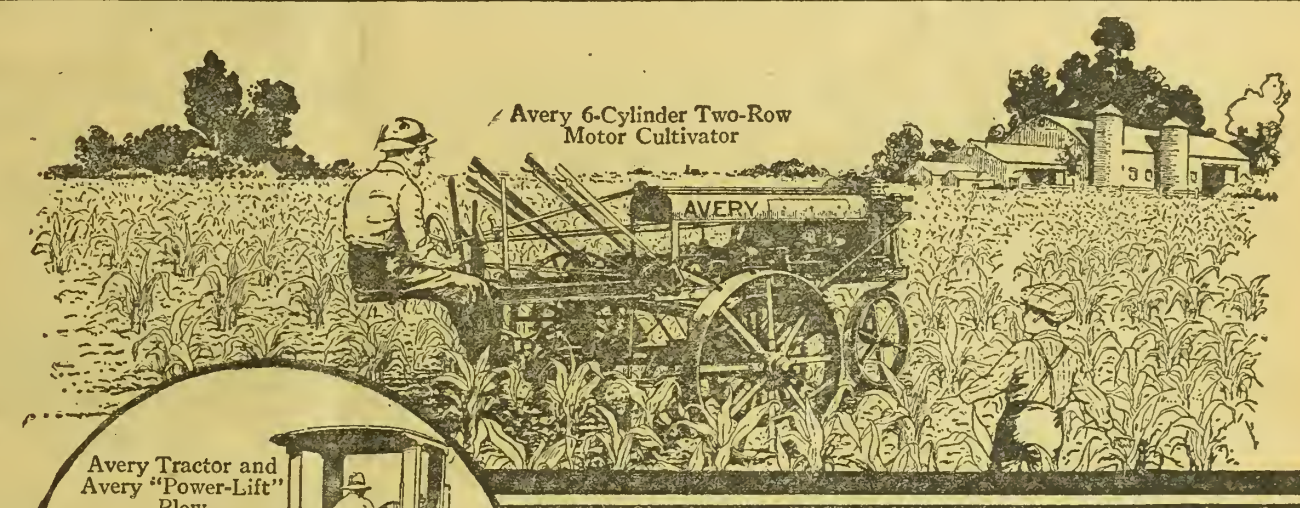
To return once more to the professors: I have already stated that our American professors are not only theoretical but also practical personages, which is of more importance than social standing. The European professor is considered a high personage hard to approach, contrary to the American idea. This is of importance, for no American farmer hesitates to apply to a professor and discuss agricultural problems with him.

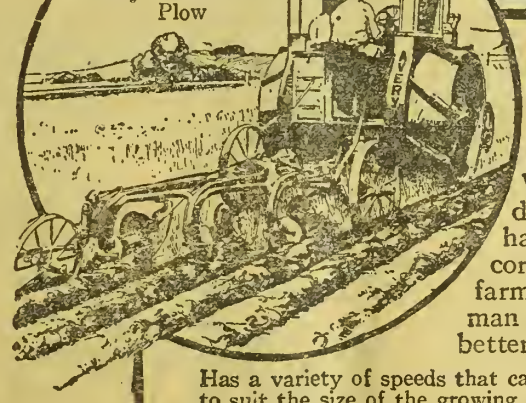
It might be well for America to follow the European plan of rural continuation schools where the young people and even the adult farmers and their wives, can get the practical training needed for successful farming. Such schools on the European plan require a small faculty and only limited funds, as they are able to use established school buildings and equipment. I have seen in such schools in northern Europe farmers' wives and daughters, middle-aged farmers, as well as the young people sitting side by side and listening to lectures or viewing demonstrations and experiments. This is one thing which I believe we in America can learn from the European rural education.

Our Rainfall Requirements.

The amount of rainfall needed for various crops is told by Dr. R. H. Whitbeck, professor of geography at the University of Wisconsin, in a pamphlet on "Irrigation in the United States," recently published as a reprint of an article in The London Geographical Journal.

"The cereal and meat food for the average American requires the services of 4,000 tons of soil water annually. This means that the air currents must bring to a region from 5,000 to 10,000 tons of rain yearly for every person whom that region feeds. The U. S. Reclamation service plans to supply for irrigation 5,000 to 6,000 tons of water for each individual on irrigated lands."





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With an Avery Motor Cultivator you can cultivate double or more acreage than one man can ordinarily handle with horses. You can cultivate 18 to 20 acres of corn, cotton or other row crops a day—make a 160-acre farm a one-man job. It is also easy to operate—a boy or man can handle it without previous experience, and can do better work than with a horse-drawn cultivator.

Has a variety of speeds that can be controlled to suit the size of the growing crop. You can creep along slowly when the crop is small and tender, or you can go as fast as you like when the crop is large. Hot weather and flies can't stop or bother it.

Cultivates Any Row Crop

Avery Motor Cultivators are built in two sizes—a six-cylinder two-row and four-cylinder one-row machines. The two-row size is built in widths for crops planted in any width rows. Can also be furnished with various styles of front wheels so that all row crops, such as corn, listed corn, cotton, peas, beans, beets, potatoes, asparagus, tomatoes, etc., can be handled successfully. Can also be furnished with planting attachment for planting such row crops as corn, cotton, peas, beans, etc.

A Proven Success

Avery Motor Cultivators are a proven success—their design is right and they are built right. They lead in power, durability and simplicity. As many as 6 to 25 of these machines are being used by the same men who are farming on a large scale. *In one locality within a radius of 18 miles, over 100 Avery Motor Cultivators are in use.*

Besides cultivating and planting row crops, the Avery Motor Cultivator is also being successfully used for many other kinds of light field and belt work. It is adapted to more kinds of work than any other machine, and is one of the best motor farming machinery investments you can make.

The Avery Line

Also includes tractors for every size farm. Six sizes, 8-16 to 40-80 H. P. with "Draft-Horse" Motors and "Direct-Drive" Transmissions. Two small tractors, Six-Cylinder Model "C" and 5-10 H. P. Model "B." "Self-Lift" Moldboard and Disc Plows, Listers and Grain Drills, "Self-Adjusting" Tractor Disc Harrows. Also, roller bearing Threshers, Silo Fillers, etc.

Write for the Avery Catalog and interesting Tractor "Hitch Book." Both books free.

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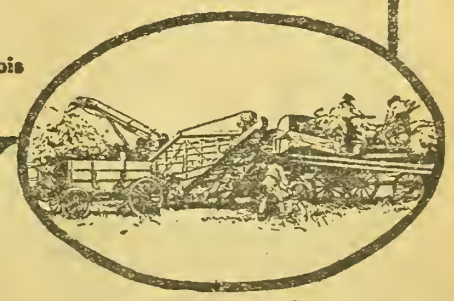


Avery "Grain Saver"
"Yellow-Fellow" Thresher

Penrose Sale Breaks Record

DENVER HOLSTEINS BRING HIGH FIGURES.

H. A. LINDGREN.

WITH $5,000 as top figure for bulls and $4,500 for cows a new record for Colorado Holsteins was established at the sale of M. E. Penrose at Denver March 8 and 9, at which about $65,000 worth of registered dairy stock was disposed of. The record price was on Johan Duchess De Kol Lad, a National Western grand champion, who had been the Penrose herd sire and was purchased by Mrs. R. G. Douglas, president of the Colorado Holstein Club, for her ranch at Rush. She also paid the top on cows, $4,500, for Lilu Segis Pontiac 248241, one of the heavy producers who, as a three year old, made a seven-day record of 34 pounds of butter, besides being a show cow. Mr. Penrose's estimate of her was that she was "the most valuable cow in the state," and the bidding for her indicted that other breeders agreed with him.

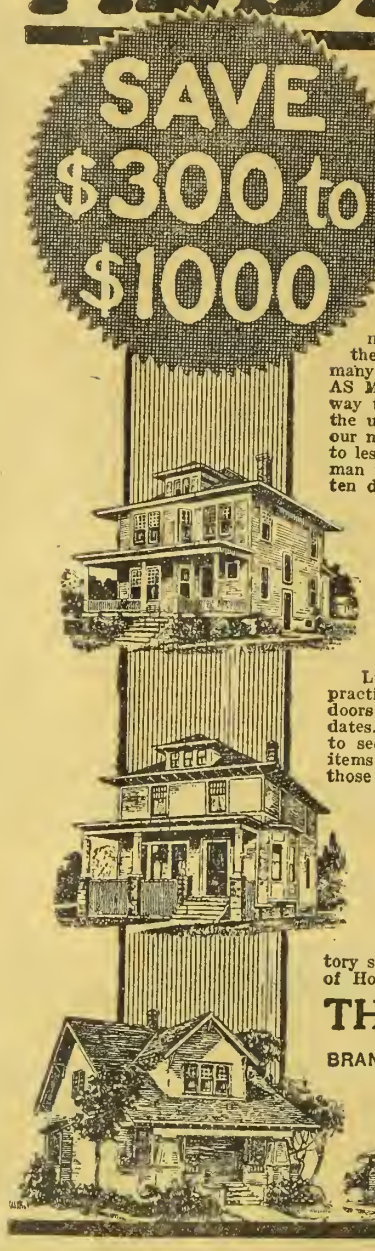
Mrs. Douglas was not only the top buyer, but also one of the heaviest buyers at the sale, leaving with a good dozen of the best offerings. She knew what she wanted and went after it, backing her judgment with figures such as have not heretofore been paid in Colorado, but are on a par with prices in the eastern Holstein centers, where the cows are no better but appreciation of good quality is more evident.

Carnation Stock Farms of Seattle, Washington., who have set the pace on Holstein prices at many a sale, were represented by S. J. Hammerquist, who made several purchases of outstanding females that will be shipped to the Pacific coast. By far the greater number of the animals, however, will remain in Colorado, to continue production of milk and calves. Col. Haeger was the auctioneer in charge, assisted by Col. Mack and Col. H. C. Jennings. The average on cows was well above $600, the total sales amounting to $62,605. Following is a list of the sales:

Cows.

Princess Johanna Hope 328431, to E. J. Lindquist, Denver, $550.
Maud Pontiac Hamilton 331,386, to P. O. Dobson, $275.
Nancy Johan Wayne 377442, to Mrs. R. G. Douglas, Rush, $1,000.
Heifer Calf, to Geo. S. Turner, $250.
Avoca Lodge Barbara Vale 337376, to Mrs. R. G. Douglas, $575.
Heifer Calf, to Geo. S. Turner, $245.
Sunnyside Thora De Kol Mechthilde 2d 484682, to Arthur Ponsford, Mt. Morrison, $600.
Woodbine Queen Korndyke 326419, to Arthur Ponsford, $450.
Heifer Calf, to Geo. S. Turner, $200.
Female 490308, to Geo. S. Turner, $225.
De Kol Nancy Wayne 79638, to Mrs. R. G. Douglas, $575.
Boness Burke Rag Korndyke 326581, to Arthur S. Ponsford, $450.
Male clf, to Geo. Reed, $450.
Heifer Calf, to John Pierce, Stockyards, $200.
Ida Walker Beets De Kol 215278, to August G. Kramer, $400.
Heifer 490302, to Cruse & Son, Mt. Morrison, $250.
Heifer, to Cruse & Son, $185.
Village Side Beets Korndyke 327061, to Arthur S. Ponsford, $600.
Heifer Calf, to J. J. Kalberer, Broomfield, $225.
Towline Princess Clothilde 3d 328223, to H. A. Niles, Orchard, $375.
Iowana Geneva 235523, to Mrs. R. G. Douglas, $1,550.
Jennie Leon 216228, to E. J. Lindquist, Denver, $500.
Alvera Homestead 329147, to Cruse & Son, $725.
Heifer 490299, to John Kramer, $220.
Towanda Sarcastic Alwina 302918, to E. J. Lindquist, $850.
Highland Hengerveld Pietertje 261015, to H. A. Niles, $300.
Aggie Wayne Cottage Knoll 2d 275654, to Carnation Stock Farm, Seattle, Wash., $1,650.
Female 490300, to Mrs. R. G. Douglas, $400.
Fanny Lilu Segis 199465, to Walter H. Wilson, Boulder, $425.
Heifer 490303, to Carnation Stock Farm, $675.
Duchess Wayne Cottage Knoll 3d 295100, to Cruse & Son, $875.
Female, to Cruse & Son, $400.
Lilu Segis Pontiac 248241, to Mrs. R. G. Douglas, $4,500.
Hartog Pontiac Walker 325049, to P. O. Dobson, $400.
Heifer 504922, to Arthur Ponsford, $275.
Butter King Pietertje De Kol 316277, to P. E. Leonard, $460.
Bull Calf, to L. S. Thill, $85.
Parthenea Butter King 316280, to Cruse & Son, $750.
Heifer Calf, to E. W. Emery, $265.
Calf, to Mrs. R. G. Douglas, $90.
Alexina Pontiac 2d 248239, to Alex Lehl, Brighton, $550.
Heifer Calf, to Geo. S. Turner, $190.
Calf, to S. W. Pressy, Pueblo, $55.
Fudge Clothilde Aaggie De Kol 3d, 316282, to P. O. Dobson, $475.
Heifer Calf, to R. Eggleston, $205.
Windsor Segis Karen 323568, to S. W. Pressy, $380.
Ever Green Never Again 334471, to E. J. Lindquist, $450.
Lieuwkje Pontiac Korndyke 357117, to Arthur S. Ponsford, $800.
Heifer 490301, to J. H. Zimbelman, $280.
Milanhurst Vista 320565, to P. O. Dobson, $525.
Female 490306, to Mrs. R. G. Douglas, $220.
Male, to John O. Lerch, $45.
Countess Inka Walker 326268, to J. J. Zimbelman, $410.
Heifer Calf, to Geo S. Turner, $235.
Village Side Josephine Walker 327062, to Walter H. Wilson; $525.
Heifer 504921, to J. J. Kalberer, $300.
Segis Butter Girl Walker 325051, to J. J. Zimbelman, $350.
Eva Creamelle Vale 320414, to P. O. Dobson, $450.
Johan Alexina Windsor, to R. P. Lamont, Jr., Larkspur, $800.
Cold Spring De Kol Pet 484681, to Arthur Ponsford, $400.
Bertha Colantha Pauline 2d 320017, to P. E. Leonard, $675.
Alma Tiffany 2d 322815, to P. O. Dobson, $625.
Female, to Lee Gaiser, Denver, $290.
Tiffany Qui Vive De Kol Pietertje 322820, to A. Ponsford, $1,300.
Heifer 490297, to Mrs. R. G. Douglas, $750.
Bull Calf, to Geo. S. Turner, Canon City, $345.
Ruysdale Segis Beets Tiffany 2d 322818, to P. O. Dobson, $225.
Pauline Merdu Beauty 320022, to August G. Kramer, Brighton, $400.
Heifer Calf, to Cruse & Son, $160.
Martha Beauty 320021, to Jacob Lehl, $525.
Staunch Mermaid Beets 3d 320024, to Donley & Hansen, $400.
Nettie Jenks Korndyke Tiffany 2d 322817, to J. J. Zimbleman, $425.
Elnora Beets Rag Apple Korndyke 326617, to Geo. S. Turner, $500.
Female, to Mrs. Lee Gaiser, $200.
Arapahoe Jewel Pietertje 2d 308549, to Carnation Stock Farm, $800.
Inka Mercedes Homestead 329148, to R. G. Douglas, $900.
Heifer Calf, to Mrs. R. G. Douglas, $400.
Goldie Karen Pontiac 352397 ,to Alex Lehl, $400.
Male, to J. A. McCabe, $75.
Katie Karen Aaggie Wayne 352399, to W. G. Foster, Englewood, $750.
Heifer, to W. G. Foster, $170.
Townline Princess Pontiac 328224, to H. A. Niles, $425.
Heifer, to J. J. Kalberer, $200.
Nellie Ormsby Hope 328430, to J. H. Zimbelman, $420.
Heifer, to Cruse & Son, $180.
Posch Concordia Veeman 320023, to R. Eggleston, Mt. Morrison, $550.
Bess Pietertje Beauty 320018, to R. P. Lamont, Jr., $575.
Bull, to Carl O. Johnson, $55.
Jarie Lily Hartog 346184, to F. W. Pressy, Pueblo, $425.
Heifer, to Geo. Renner, Bennett, $120.
Male 271317, to E. G. Clark, $90.
Bobbet Clothilde Hartog 346186, to William F. Maul, $425.
Butter Girl Walker 399617, to S. W. Pressy, $400.
Heifer 504896, to S. W. Pressy, $310.
Peerless Hengerveld De Kol Walker 327060, to B. F. Simpson, Denver, $700.
Female, to J. J. Kalberer, $260.
Elnora Mechthilde Korndyke 327683, to J. A. McCoy, Aurora, $700.
Bull Calf, to J. J. Kalberer, $85.
Tot Calypso Pontiac 350217, to H. A. Niles, $400.
Highland Anna Korndyke 2d 312111, to J. J. Kalberer, $800.
Denver Patience 510822, to J. J. Kalberer, $300.
Denver Fleta Korndyke 490304, to A. Ponsford, $700.
Female, to Mrs. R. G. Douglas, $400.
Denver Alexina Pontiac 490305, to Spencer Penrose, Colorado Springs, $1,500.
Denver It 435365, to Carl Johnson, $300.
Eva Segis Pontiac Rag Apple 473288, to J. J. Kalberer, $275.
Grace Rag Apple Nemea Korndyke 473283, to J. H. Zimbleman, $160.

ALADDIN Readi-Cut Homes



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Writing in the New York Herald, John C. Howell, says: "Even a normal building program in 1920 will experience difficulty in having orders for building material filled on demand. The building material scarcity will have a serious effect in retarding the development of a program at all commensurate with the building requirements."

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Lumber stocks were never so low as at present. Nails are practically impossible to secure in most communities. Orders for doors and other mill work are six to twelve months behind delivery dates. Many towns have a glass famine. Lath are about impossible to secure and going up in price regularly. And nearly all other items are difficult to obtain. This will cost millions of dollars to those who build this year in delays on the job. The man who plans to build will probably suffer, unless he secures a guarantee of delivery of complete materials.

Aladdin Shipments Overcome All Difficulty—You Are Protected by a Guarantee—Every Order Will Be Shipped Complete.

Upon receipt of your order you will receive a bonafide guarantee of complete shipment of all materials required to build the Aladdin Home you purchase. Where else can you get such a guarantee of prompt, complete and satisfactory shipment of all materials? Send for 100-Page Aladdin Book of Homes No. 1881.

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Fayettesville, N. Y., Dec 31, 1917.

Gehl Bros. Co.—I have fed ground alfalfa to horses, milch cows, sheep and swine every winter since 1889, and believe it is the most economical source of protein I have ever used. I am thoroly impressed with the idea of home grinding, and am pleased with the 17 inch cutter with grinder attachment which I purchased from you. I have ground 150 tons with it, grinding the third cutting as needed and at such times as the farm help is available for the work. With our 10-20 power we have little trouble in running through close to a ton an hour.
F. E. Dawley.

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The Gehl Cutter will enable you to save 25% to 35% on your feed bills by mealing your alfalfa on your own place at little expense. Feeding alfalfa hay to your stock means loss because of waste. By cutting alfalfa into meal or chop, you produce a feed equal to bran in feeding value. It can be fed to your stock, horses, sheep, hogs and poultry without waste. The chop requires less storage space, and can be cut for less than the cost of baling.

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The GEHL No. 17 is admirably suited to the Fordson, Samson or any 8-16 tractor. Farmers are delighted with this combination. A two-in-one machine that cuts Ensilage or Alfalfa. You cannot afford to be without this all-purpose GEHL Cutter.

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Female, to ———— $430.
Female, to J. J. Kalberer, $175.
Chicago Dairy Maid 342707, to J. H. Zimbelman, $350.
Bull, to B. F. Fernald, $160.
Leeuwarder Day Karen 198040, to J. H. Zimbleman, $305.
Gypsie Rag Apple 289393, to J. H. Zimbelman, $350.
Bull Calf, to Frank W. Mason, $85.

Bulls.

Johan Duchess De Kol Lad 86302, to Mrs. R. G. Douglas, Rush, $5,000.
Towanda Spring Farm Judge 204632, to J. H. Zimbelman, $275.
Bull, to Donley & Hansen, Mt. Morrison, $410.

Donley—Hansen Sale.

The Donley and Hansen dispersal sale of Holsteins at the L. C. Donley farm southwest of Denver, was conducted March 10. Some 65 head of excellent individuals were sold to Colorado breeders. The sale offered some rare bargains in quality-bred Holsteins. A large part of the animals sold carried excellent pedigrees. Mr. Donley is well posted on the family lines of the breed and much of the stuff sold had been selected by him. The climax of the sale was reached when a young bull, King Johanna Cedarside Pontiac, sold for $6,500. This bull was owned jointly by Messrs. Donley, Hansen and W. G. Foster. On account of the large number of cows these gentlemen had to breed, it was impossible to handle them with one bull, so it was decided to put him in the sale. A breeder came from Los Angeles with the express purpose of buying this bull and he bid up to $6,000 on him. He was outbid by Mr. W. G. Foster of Englewood, and the bull remains in the state. What makes this calf so attractive is the fact that he is sired by King Segis Pontiac Count, who is the youngest bull in the world to have five daughters with over 1,000 lbs. of butter in a year. Mr. Foster, a new breeder in the state, is to be congratulated on his purchase.

There were five bulls sold at an average price of $1,537. The 56 females averaged nearly $350. There were some very well bred individuals sold at far below their value. Most of the buyers present had been well stocked up at the sales of the week. Col. G. M. Banks was the auctioneer in charge. The sales report follows:

Cows.

Sunny Flats Mildred 370375, to L. T. Rogers, Boulder, $250.
Alta Pontiac Tehee 401141, to Ed. Krough, Denver, $200.
Frances Tritomia Mechthilde 424876, to L. A. Markwood, Morrison, $130.
Jeff Pauline Ormsby De Kol 455051, to J. C. F. Clarke, Edgewater, $175.
Lady Clothilde of Myerdale 227256, to J. Sherman Brown, Englewood, $350.
Superb Aabbie May 543583, to O. H. Chambers, Edgewater, $410.
Aaggie Cornucopia Duchess 543584, to O. H. Chambers, $310.
Chloie De Kol Carter 3d 437618, to John Kramer, Brighton, $275.
Anna De Kol Canary 4th 429618, to John Kramer, $545.
Anna Alcartra Champion 429619, to J. Kramer, $450.
Mary Colantha Whitefoot 429628, to J. Kramer, $400.
Olive De Cola Champion 429617, to J. J. Kalberer, Broomfield, $1,200.
Canary Belle Colantha 429622, to R. Eggleston, Mt. Morrison, $500.
Gem Polkadot De Kol 457420, to L. M. Boston, Ft. Logan, $425.
Daisy Polkadot Colantha 457426, to J. Sherman Brown, $460.
Hortondale Colantha Pietertje 205522, to Jesse Cruse, Mt. Morrison, $850.
Stella Ringwood Fobes Korndyke 431294, to J. Kramer, $275.
Daisy Pontiac Gerben Korndyke 431734 to J. Kramer, $590.
Smithfields Segis Paul De Kol 477978, to J. J. Kalberer, $310.
Lady Johanna Roe 230451, to W. G. Foster, $350.
Neko Rag Apple Korndyke 440864, to J. Kramer, $200.
Venloe Abbekerk 152206, to C. Hatteson, Denver, $160.
Chloie De Kol Carter 278559, to O. H. Chambers, $300.
Princess Pontiac Venloe 430063, to J. A. Rymer, Edgewater, $450.
Chloie De Kol Abbekerk 402978, to J. Sherman Brown, $160.
Venloe De Kol Abbekerk, 447390, to J. A. Ryner, $350.
Chloie De Kol Aaggie 537798, to J. Kramer, $200.
Vasaline Mae Mechthilde 136041, to Linn Wood, Boulder, $370.
Jane Cholie De Kol Segis 447391, to J. Kramer, $300.
Jewel Lyons Pauline 460695, to R. Eggleston $650.
Heifer Calf to J. J. Kalberer, $115.
Lot 39, to J. W. Hall, Golden, $200.
Lady Walker Fobes Homestead, to J. Sherman Brown, $490.
Alice Mated De Kol 2d, to J. Kramer, $160.
Van Beers Segis Pontiac, to R. Eggleston, $475.
Lot 44½ Heifer, to J. C. F. Clarke, $145.
Segis Maid of Myerdale, to J. Kramer, $525.
Elane Onyx De Kol, to H. Bartle, Arvada, $160.
Pearl Netherland Hengerveld 172290, to J. A. Rymer, $300.
Maple Clothilde Johanna 108918, to J. Kramer, $300.
Bessie Champion, to J. C. F. Clarke, $150.
Never Again Jewelfield 425642, to L. T. Rogers, $280.
Aaggie Sarcastic Bessie, to J. Kramer, $410.
Duchess Ida, to J. Kramer, $300.
Females (Twins), to J. C. F. Clarke, (each), $175.
Female, to J. W. Van Gordon, Morrison, $110.
Female, to J. J. Kalberer, $200.
Ormsby Segis May 474834, to L. M. Boston, $750.
Lot 58½ Heifer, to J. J. Kalberer, $200.
De Kol Veronica Ormsby, to L. M. Boston, $625.
Countess Dirkje Beryl Pontiac 492884, to W. G. Foster, $220.
Daisy Brookside Fobes Mooie 460508, to J. Sherman Brown, $300.
Female, to J. Kramer, $225.

Bulls.

King Beryl Veeman Pontiac, to M. Parker, Boulder, $600.
King Johanna Cedarside Pontiac, to W. G. Foster, Englewood, $6,500.
Avoca Lodge Pledge Rag Apple 276527, to J. Sherman Brown, Englewood, $300.
Male, to Ed. Krough, Denver, $185.
Male, to J. C. F. Clarke, $100.

A Hint to Meredith.

A splendid suggestion comes to us from The Washington Farmer regarding the need for regional direction of agricultural experiment work and the growing danger of bureaucratic administration of departmental effort at the national capital. There is, as The Washington Farmer points out, a decided need for agricultural statesmanship but an imminent hope that the new secretary, Mr. Meredith, possesses the breadth of vision to infuse life and business practice where these are lacking. Quoting Dr. Liberty H. Bailey, who foresaw the danger of bureaucracy:

"Whether there is any danger in the organization of our new nationalized extension work (extension act of May 8, 1914) and the other public rural agencies I suppose not one of us knows. But for myself I have apprehension of the tendency to take some of the agricultural work into 'projects' at Washington and elsewhere. If we are not careful we shall not only too much centralize the work, but we shall tie it up in perplexing red tape, official obstacles and bookkeeping. The merit of the projects themselves and the intentions of the officers concerned in them are not involved in what I say; I speak only of tendency of all government to formality and crystallization, to machine work and to armchair regulations; and even at the risk of a somewhat lower so-called 'efficiency' I should prefer for such work as investigating and teaching in agriculture, a dispersion of the inititive and responsibility, letting the co-ordination and standardizing arise very much from conference and very little from arbitrary regulation."

The Washington Farmer then comments thereon as follows:

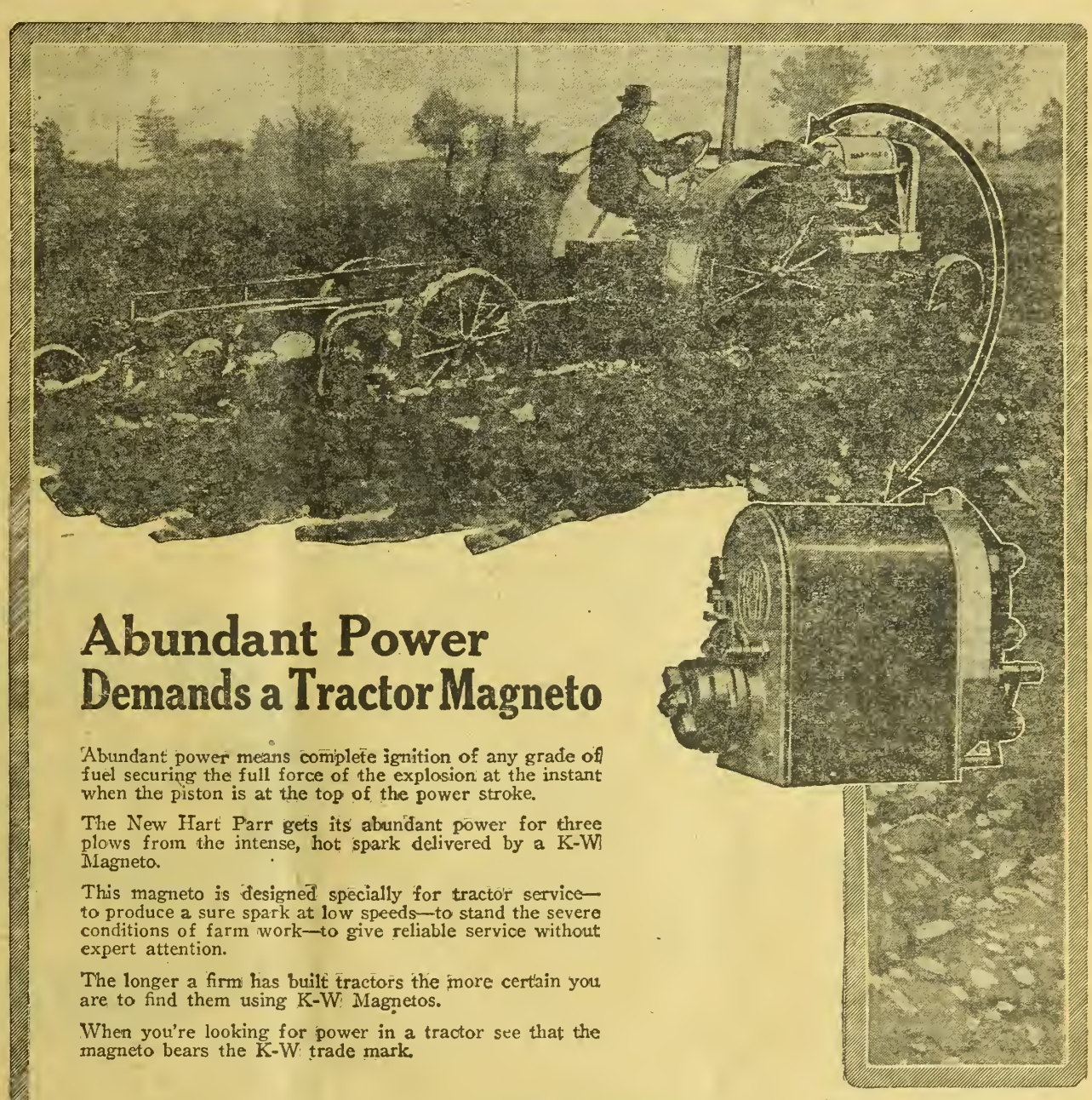
"In the recent past there has been a noticeable effort to strengthen the sway of armchair regulations by concentrating the efforts of the national department of agriculture in the various state colleges of agriculture. It has become more and more difficult to obtain the prompt and authoritative treatment of regional farm problems. For example, the Inland Empire of the Pacific northwest reaches into northern Montana, takes in northern Idaho, goes down into northern Oregon and embraces all of eastern Washington—a region where common agricultural problems are present.

"With his keen sense of business affairs Secretary Meredith must see that the Inland Empire is a 'region' and should have regional direction over regional problems. The resources of the agricultural colleges and experiment stations of Montana, Idaho, Washington and Oregon should be marshaled under regional direction to meet and solve these problems. While a sort of gentlemen's agreement and a soft co-operation may be obtained through negotiations for the colleges and experiment stations of the four states to unite in attacking these common problems, these efforts are mostly ineffective when it gets down to doing things.

"What reason is there for scattering the research work demanded by common problems in a region in several different institutions included in the region and trying to co-ordinate them through a gentlemen's agreement? It is difficult to obtain one master mind along a single line of research; how much more difficult to obtain and coordinate and bring into a happy family four Ph. Ds.

"While regional districts, for obvious reasons, should not contain fractional parts of states, yet the regional director could easily segregate portions of one or more states where common farm problems are presented and carry on united work for their solution.

"This problem of regional direction is only one of the many problems which will present themselves to Secretary Meredith. While it may take years to work out this needed redirection of the efforts of the United States department of agriculture, yet the lines along which that redirection must be worked out are within the compass of Secretary Meredith's administration."



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When you're looking for power in a tractor see that the magneto bears the K-W trade mark.

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TRADE K-W MARK magneto

Fires Any Fuel—Gets Maximum Power Out of Every Drop

Co-Operative Shippers Meet.

H. A. LINDGREN.

The U. S. Bureau of Markets through Mr. Stuart L. Sweet and W. F. Heppe of the Denver office arranged for a most interesting school for the co-operative shippers at Denver, March 1, 2 and 3. There were but few of the 29 associations in the state represented. The session, however, was a most instructive one for those present and will be of assistance to the movement in the state. Co-operative shipping of livestock in the state is the outgrowth of the need for more efficient marketing for small owners. It has done a great deal to put livestock on a firm basis among such men. The idea of the school was to acquaint the managers of the locals with the selling methods on the Denver stockyards and other points that tends toward a standardization of the methods of handling. The first day was taken up at the yards when various grades of livestock were examined and their merits explained by the packer buyers. At noon the Armour Packing company gave a luncheon to the party, after which they were taken to the Armour plant and shown some of the animals examined on foot in the yards, after they had been slaughtered. Thus the party had an opportunity to see how the dressed carcass appears and what kind of animal sells to the best advantage.

In this is was pointed out that the various classes of carcasses are graded and sold according to grade. This in a measure explains the reason for the cheaper meats offered to the public at the various meat shops. It was stated in this connection that the public generally, is asking for the better grades of meats such as loins, and ribs and the cheaper grades which are just as palatable when properly prepared, are overlooked. Here is a point in relation to the high cost of living.

The consumer would find it an advantage to consider meats that cost a great deal less per pound, but of equal quality of the cuts that are costing more. This was an instructive session throughout and brought out many things of value to the shippers.

The forenoon of the second day was spent at the yards where Mr. Ben Kemper, president Denver Livestock Exchange, gave some valued suggestions regarding the attitude of the exchange toward co-operative shipping. Mr. W. A. Snyder of the W. A. Snyder Commission company gave a talk on the market grades of sheep and pointed out the kind that bring the best returns on the market. One of the important things that came about during this conference was the formation of a state federation of the Co-operative Livestock shipping interests. E. J. Trosper, who is the organizer for the National Federation was present and assisted in this matter.

Temporary officers were chosen as follows:

President, Paul Mead, Berthoud; President Berthoud Co-operative Livestock Shipping Association.

Vice President, P. A. Bauer, Holly; Manager Holly Association.

Acting Secretary, Stuart L. Sweet, Denver.

A board of directors was chosen as follows:

Northeastern Colorado: Mr. John Fehringer, Peetz.

San Luis Valley: John Shultz, Hooper.

San Juan Basin: W. L. Glenn, Cortez.

Eastern Colorado: P. A. Bauer, Holly.

Northern Colorado: Paul Mead, Berthoud.

Western Slope: Judson Solomon, Olathe.

Central Colorado: Frank Steinmier, Canon City.

We like your paper fine and enjoy reading it. We enclose $1.50, so please send it two more years. Also the four other magazines in the big offer. The children enjoy having us read Farmer Putnam's page and we also enjoy reading it.—H. L. Morgan and wife, Eckley, Colo.

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Reading Matter For All the Family.

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With Pathfinder	1 yr.,	1.80
With Current Opinion	1 yr.,	3.05
With Popular Science Monthly	1 yr.,	2.50
With Delineator	1 yr.,	2.50
With Modern Priscilla	1 yr.,	1.75
With Everybody's	1 yr.,	2.50
With Literary Digest	1 yr.,	4.90
With Etude, Music Magazine	1 yr.,	2.25
With Illustrated World	1 yr.,	2.30
With American Magazine	1 yr.,	2.55
With Hunter-Trader-Trapper	1 yr.,	2.00
With Woman's Home Companion	1 yr.,	2.55
With Little Folks	1 yr.,	1.90
With Illustrated Review	1 yr.,	1.25
With Youth's Companion	1 yr.,	3.05

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WESTERN FARM LIFE

Denver, Colorado.

On Co-Operative Insurance.

Though the value of farmers' mutual fire insurance companies is demonstrated conclusively by the record of approximately 2,000 such organizations in the United States, there are many states, whose laws make no suitable provision for forming and operating such companies. Consequently at the request of various representatives of farm interests, the United States Department of Agriculture, in co-operation with the National Association of Mutual Insurance Companies, has prepared suggestions for a state law providing for the organization of farmers' mutual fire insurance companies.

These suggestions have just been issued in the form of a department circular, which can be used to advantage by anyone concerned in promoting legislation relating to this question. In some cases, of course, the provisions may need modification to meet constitutional requirements. In general, the suggested law is designed to make it easy for 20 or more qualified individuals to organize a farmers' mutual fire insurance company. At the same time provisions, are included which adequately safeguard the financial integrity of such companies.

Figures compiled by the Office of Farm Management, show that the companies now in existence carry a total insurance exceeding $6,000,000,000 on property valued at over $7,500,000,000, which is more than two-fifths of the value of all insurance farm property in the 48 states. In a number of states where this form of protection has been highly developed, the average cost falls below one-half the rates quoted by commercial concerns or the so-called bureau rates.

Since about 15 per cent of all the farmers' mutuals in the country write policies that give protection against windstorms, as well as fire and lightning, the average rate for the country as a whole is higher than it otherwise would be. Notwithstanding this fact, the average for the country as a whole is only 26 cents per $100. The writing of windstorm insurance is not permitted to local mutuals under the suggested law, however, since only companies that operate over wide areas can assume this risk with safety.

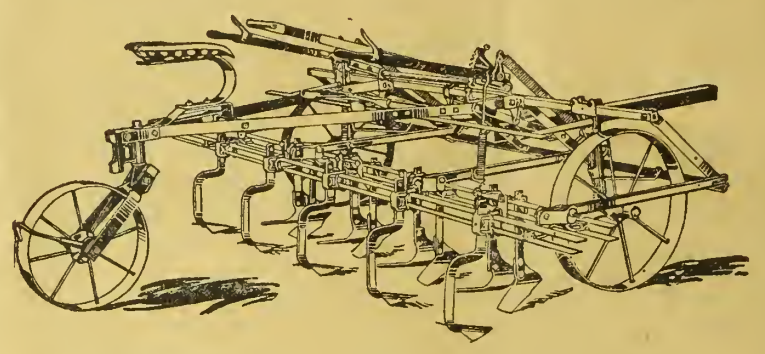
Copies of the new circular, No. 77, can be had by addressing the United States Department of Agriculture, Washington, D. C.

Good Farming Pays.

A great and successful farmer who had been farming for seventy years, when asked what was the greatest farming lesson he had learned, replied: "The lesson that good farming pays better than any other business in the world; pays not only in money, but in health and contentment of mind. It is one business in which a man can live the Golden Rule every day, in all his dealings; and the longer he lives the more his satisfaction with it grows; and at the sunset of life he can look back over the years without a single regret, knowing that they have been well spent and that he has contributed his best to the sum of human happiness and lived closest to the scriptural injunction as to how a man should live."—Kansas City Weekly Journal.

Apples, carrots and Brazil nuts are excellent for sufferers from constipation.

A Spoonful of Sugar Saved With Every Bruise Avoided



CULTIVATING sugar beets — without damage or loss — is largely a question of the implements used. The P&O Beet Cultivator will come nearer filling the bill than any similar implement. It is easy running and the operator can instantly angle the gangs with the foot stirrups, allowing close cultivation without bruising or cutting the growing beets.

Every Bruise on a Sugar Beet Reduces Production

The P&O Beet Cultivator is made in two sizes, two-row and four-row. Either one can be equipped with a variety of appliances, including Irrigating Shovels, Duck Feet, Deer Tongues, Knife Weeders or Disk Weeders.

Use P&O Cultivators, and produce a full crop. Ask the International dealer.

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A Letter From Dad.

Dear Children:

I'll admit that I ought to have written to you three or four days ago to let you know that I arrived at your Uncle William's home safe and sound. I haven't been neglectful of you but I've been pretty much dazed by the changes I've found out here.

We always thought that Bill had some farm, even in the old days, but you ought to see it now. This isn't a farm any more. It's a regular little city, all except the movie shows and the policemen. And Bill isn't a farmer either. He's a loafer compared with what the average farmer was twenty years ago. But even if he is doing less work, he's making more money than he ever did. He's making electricity work for him.

Electricity "Lightens" the Evening Chores.

I arrived here about 9 o'clock last Monday night. Bill met me at the station and brought me out in his car. When we got within sight of the house I declare I thought it was afire. Every window was blazing with light and winking welcomes at us from a mile away. Bill tooted his horn when we reached his place and someone in the house switched on a couple of lights over the gate at the driveway. When we piled out, your Aunt Mary and all the kids were there to meet us. In a few minutes Bill turned a little switch which lighted an electric lamp in the garage and he put the Lizzie away, while I went into the house to thaw out. Right then I began to see uses for electricity that I never had dreamed of.

The house was fairly warm but I was pretty cold, so your Aunt Mary turned on the electric heater. Inside

Sharpening Up By Motor.

a few seconds I was flooded with a soft, radiant heat that beat any stove that I ever pulled my chair up to. And while I sat there enjoying the warmth I began to notice that I was mighty hungry. I didn't know why until Mary called us into the dining room and then a polished electric percolator filling the air full of a fragrance that would make the rose ashamed of itself—making coffee right on the supper table.

And that wasn't all. Along side of the percolator were slices of Mary's good home made bread with their sides turning a golden brown in an electric toaster. Say, folks, how I did enjoy that meal.

When we got up from the table it was bedtime so Bill showed me to my room. And there's when I got another jolt. Bill's got a bathroom. Yes, sir, a regular, sure enough city bathroom with a big, shiny porcelain tub, wash stand—and everything. I had a dandy bath and a good night's sleep.

Then, after breakfast, I had a look around the place. In the barn I found the hired man just finishing up the milking. I suppose you think he was sitting on a three-legged stool with his head jammed into some old bossy's flank. Well, he wasn't. When I got there that feller was sitting on a bale of hay watching an electric milker do his work. And he was watching it by electric light. Can you beat that for kid-glove farmin'?

I followed the milk to the springhouse and saw it fed into a separator driven by electricity and a little later I saw an electrically-driven churn turn some cream into butter. Your cousin, Katy, laughed when she saw my astonishment and called me into another little building longside the spring-house. She called it "our workshop." And it sure is.

There's an electric washing machine and an electric ironer in that "workshop" that make Monday a regular holiday for the women folks in Bill's family. Even the wringer runs by electricity. Then there were two electric irons to take the drudgery out of the rest of the work. An electric vacuum cleaner does Mary's sweeping, too, and Katy even curls her hair with an electric iron.

In Bill's workshop his grindstone, emery wheel, little forge and several other pieces of light machinery are belted to a line-shaft that is driven by an electric motor.

I missed the windmill and when I asked Bill what had become of it, he pointed to an electrically-driven pump and said: "There's a mill that don't wait on wind. It keeps the water at about the same level in the tank all the time and a cyclone can't blow it over."

"You certainly have shown me some wonders today, Bill," I said, "and I wish I could fix up my farm the same way, but I certainly can't afford any such expense as this."

"What expense?" asked Bill.

"Why, for all this electricity," I answered.

"Come along with me," he replied. Then he led me up to a little piece of machinery with shiny paint and brass work, so small that it looked as though a couple of husky men could run away with it. "That's where my electricity comes from," he said.

And that's all there was to it. In a row of batteries enough current was stored up to last several hours, even with the plant standing idle. While we were looking at the little plant I heard a click, then a buzz. Without anybody laying a finger on it, that little engine started itself and hummed along like your mother's sewing machine. Bill saw my jaw drop and grinned.

"The current was getting a little low in the storage batteries," he said, "so the engine started the generator which is now replenishing the supply."

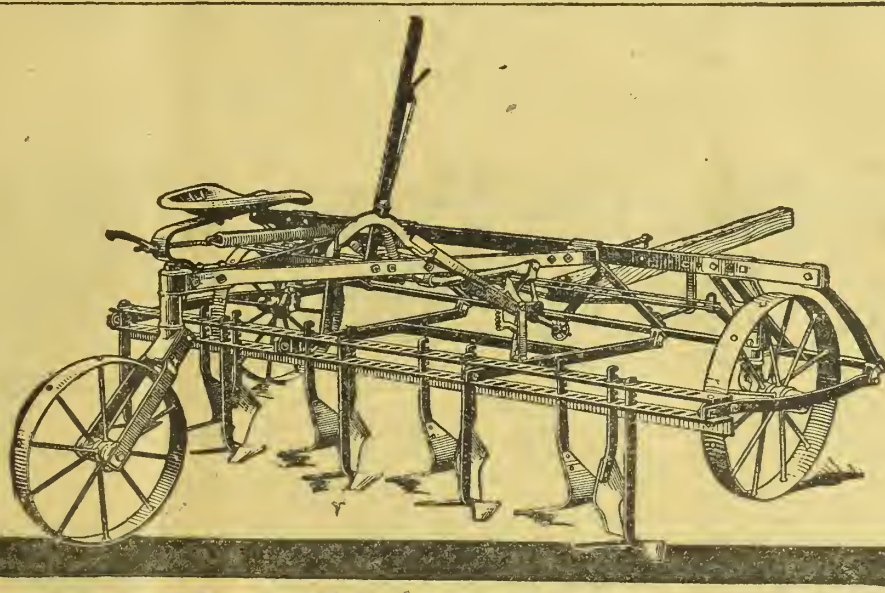
"How did the engine know the current was low?" I asked.

"That's what it's there for," said Bill. "And when the batteries are full again it will know that, too, and it will stop of it's own accord. That's a smart engine. Why if I put too heavy a load on the batteries and they are in danger of being damaged, that wise little plant will start itself up and take all the load on itself until it has all it can carry. Then it'll call the batteries back on the job again and they'll both do it." He pointed to a small switchboard with two dials on the plant.

"That's the thing that furnishes the brains for the engine," he said. "All I do is to keep my plant supplied with fuel and oil. Night and day it stands here, sometimes working, sometimes idle, but every minute of the 24 hours it provides me with the power to do all these things that have surprised you so. I shell my corn and grind it, run my fanning mill, saw my wood, cut my silage and fill my silo, all with the current that I get from this little plant. Too expensive? Why, man, it's the most economical thing I've got on the farm. And since I've put this plant in, Jim's quit his job in town and come back home. Katy and Annie have stopped talking about what a nice time their city friends have. Mary is taking life easy and the roses that made me love her years ago are coming back into her cheeks. I've worked hard, John, and I can afford to take a rest now. If it wasn't for these conveniences, I suppose I'd move into town to do my resting. But now what's the use? This farm's my home and it's the only place where I'd be contented. There are mighty few things in town that I haven't got right here and if I want even those few things, the little gas buggy will take me to them in half a jiffy. Then there's a lot of things we've got on the farm that the city folks haven't got and never will have. I tell you it means something to me now when that feller on the phonograph begins to sing, "There's No Place Like the Dear Old Farm," and by the way, your Uncle's phonograph runs by electricity.

This has been a great trip for me, children, and it will have great results for all of us because the first thing I do when I land back there will be to send in an order for one of these electric plants just like Bill's.

Yours affectionately, DAD.



For Both Beans and Sugar Beets

TWO important crops can be cultivated with this implement—no need of buying one cultivator for your sugar beets and another for your beans—that's one big advantage of the John Deere Four-Row Beet Cultivator. It is easily converted into a three-row bean cultivator.

JOHN DEERE

BEET AND BEAN TOOLS

John Deere Four-Row Beet Planter—easily converted into a three-row bean planter. Equipped with John Deere "Natural Cell Fill", Edge Delivery Seed Plates — the accurate seed-dropping mechanism that plants seeds at equal distances apart over the entire field.

John Deere Four-Row Beet Cultivator can quickly be converted into a three-row bean cultivator. Equipped with quick adjusting tool bars, the most simple construction ever devised for enabling operator to change styles of tools to suit field conditions.

John Deere No. 20 Beet Lifter is the riding two-wheel lifter with special shaped lifting blades that do not damage the beets. Instead they pulverize the soil, loosen the beets, lift them a short distance and leave them upright and easy to handle.

Only two wheels—as easy to turn and back as a two-wheel cart—no tongue truck required.

The John Deere Line of Sugar Beet Tools also includes plows and harrows, all standard sizes and types; two row beet cultivators; two row bean planters; walking beet pullers; sugar beet gear and elevators.

Free Book—"Beans and Sugar Beets—Two Profitable Crops—How to Raise Them." Write today for a copy—Address John Deere, Moline, Ill., and ask for Booklet SB-654.

JOHN DEERE

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THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

Kills Chicken Lice.

One application of sodium fluorid will kill all lice of chickens, entomologists of the Department of Agriculture have discovered. This inexpensive white powder, they find, will rid a flock of all the seven common species of chicken lice in a few days. One pound, costing only 40 or 50 cents at the time of this writing, is enough to treat 100 fowls, if dusted on. If dissolved in water and used as a dip, the same amount will go three times as far. It is easily applied, economical, gives immediate results, and does not injure the fowls or the poultryman.

The complete effectiveness of the sodium fluorid remedy and methods of using it are discussed in Farmers' Bulletin 801 of the U. S. Department of Agriculture, "Mites and Lice on Poultry," by F. C. Bishopp and H. P. Wood. The bulletin deals also with mites, the night pests of chickens, which requires a different treatment. Lice are the biting insects that work by day and are a serious foe in neglected small flocks.

Sodium fluorid—say it plainly to the druggist or you may get sodium chlorid, common salt, which it not only resembles in name but in appearance—may be obtained at most large drug stores. Until its recent use against cockroaches, and still more recently against poultry, this substance had not been employed as an insecticide. The demand for it, therefore, has been quite limited, and it is not ordinarily found in the stock of the small drug store. Druggists, however, can obtain it readily from manufacturing chemists, and with demand, it likely will be carried by local dealers.

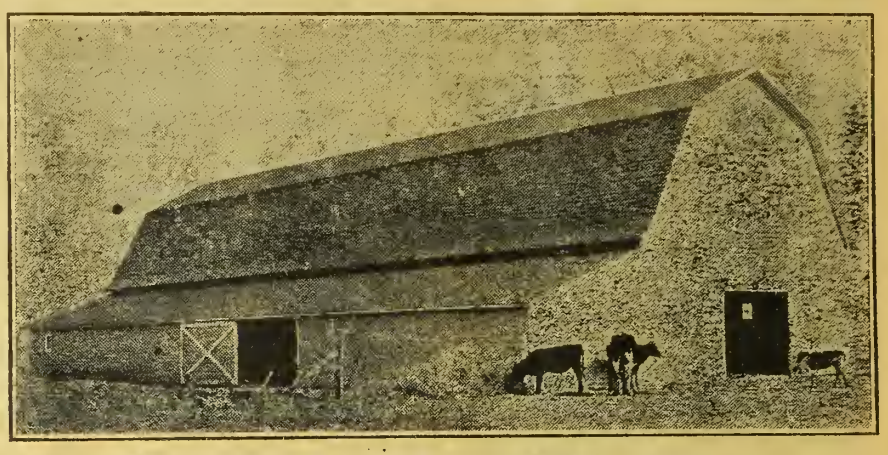
To apply the material in dust form, place it in an open vessel on a table and with one hand hold the fowl by the legs or wings. With the other hand place small pinches of the chemical among the feathers next to the skin, according to what is known as the "pinch" method, which proceeds as follows: One pinch on the head, one on the neck, two on the back, one on the breast, one below the vent, one on the tail, one on either thigh, and one scattered on the under side of each wing when spread. Each pinch can be distributed by pushing the thumb and fingers among the feathers as the material is released. If the chicken is held over the vessel, the material which falls from the fowl during the operation is recovered.

The material also may be applied by means of a shaker, but this method has some disadvantages as compared with the "pinch" method. When this method is used the amount of sodium fluorid may be reduced by adding four parts of some finely powdered material, such as road dust or flour, to each part of the fluorid. The dust, while not poisonous, is somewhat irritating to the nose and throat. If allowed to remain on the skin in any quantity for any length of time, it may cause slight local irritation. For these reasons, those dusting a large number of chickens would do well to cover nose and mouth with a dust guard or damp cloth and to wash their hands occasionally.

The dipping method is more economical but among many poultry raisers there is a general sentiment against the practice of dipping fowls, largely because most of the dips contain materials which discolor the feathers. The sodium fluorid dip, however, is harmless and as compared with dusting is more easily done. As it is necessary that the fowls dry quickly, dipping is most applicable in the southern states and to summer treatments in the north. For lice on young chickens, young turkeys, and in fact all newly hatched or sick fowls, the application of sodium fluorid in dust form is recommeneded.

This is the way the dip is prepared: In a tub of tepid water dissolve the poison at the rate of ¾ to 1 ounce of the commercial powder, or two-thirds of an ounce of the chemically pure material, to each gallon of water. The fowls should be held by the wings over the back with the left hand and quickly submerged in the solution, keeping the head out, while the feathers are ruffled with the other hand to allow the dip to penetrate to the skin. The head then should be dipped once or twice and the bird lifted and allowed to drain a few seconds. A fowl may be treated in 30 to 45 seconds. The sodium fluorid solution should not be allowed to remain long in galvanized vessels as its action on this metal is injurious. The solution does not injure the hands unless it comes in contact with sores, when it may cause slight irritation.

In experiments conducted by the Department's specialists more than 800 fowls have been dipped at one time, using on the average 5.2 ounces of sodium fluorid to 100 birds, at a cost of 13 cents. Labor is also reduced by dipping, the cost is 58c for 100 fowls.



A good type of barn on ranch of Dan Straight, Purcell, Colo.

Here's a Practical Barn.

This practical barn is on the farm of Dan Straight, north of Purcell in Weld County, Colo. The dimensions are: Length, 100 feet, width 42 feet, height 29 feet. Cost of material was as follows: Lumber, $1,945; building labor, $450; painting labor, $100; oil, lead and paint supplies, $185, making a total cost of $2,680, which, however, does not include cost of hauling and the owner's time and labor. The figures are at last spring's prices.

There is a 14x35 foot pit silo in the barn and directly opposite there are stanchions for five cows, also calf pens and stalls for the work stock, using 36x32 feet of space. There is also a machine shed and grain bin occupying space 100x12 feet, with a continuous roof, making a very neat appearing building.

Mr. Straight has since put up two 18x50 foot above ground silos, which enables him to take care of a large number of the right kind of livestock to fit into the plan of farming carried on on non-irrigated land in Weld county. Mr. Straight says that livestock must be the foundation of successful farming in the plains country. His success proves it.

How I Make Big Money Out of "Ornery" Horses

By J. A. BUTLER

ABOUT two years ago I witnessed up in New York State an exhibition of horse-training that opened my eyes. A man by the name of Mackley took a devil of a mean, vicious mare that hadn't been harnessed for seven months and in a few days had her gentle enough for a school girl to drive. Mackley had taken the mare off the owner's hands for $50 and just ten days after sold her for $175.00. A clear profit of $125.00 in ten days!

That started me investigating. I learned that Mackley had simply used the methods introduced by the famous horse trainer, Jesse Beery. Beery, I learned, used to go about the country giving wonderful exhibitions in colt-breaking and horse-training; but realizing that he could accomplish more by teaching his methods by mail, had given up his exhibition work to spread his horse-training secrets by mail-instruction. Mackley had studied Beery's Course in his spare time and in a few months was able to accomplish magical results with green colts and horses with bad habits.

Other Successes

Mackley's work showed me a way to make some nice money and I determined to take Prof. Beery's Course in horse-training—but before doing so I made further inquiries. Here are what a few of Beery's students said. I'll let them tell of their success in their own words.

Mr. S. L. Arrant writes: "Just to test Beery's methods, I bought the worst balky, kicking, fighting horse I could find. Paid $65.00 for him. After handling him only a few hours according to Beery's system I sold him for $135.00.

Mr. Dell Nicholson, Portland, Mich., writes: I have trained a four year old mare that was given up by everybody. Bought her for $35.00, and now have her so gentle, my little boy handles her. Wouldn't take $200.00 for her.

Dean L. Smith, Findley, Ohio, writes: By following Beery's instructions have changed a worthless, dangerous balker into a horse worth $225.00.

Everett McBlock, Elkhart, Ill., writes: Have just broken a pony to drive and taught it some tricks. Owner bought it for $17.50. Paid me $40 to train it. He just sold it to a show company for $150.00.

How I Work

The big source of my income is in buying up "ornery" colts and horses at bargain prices, and after training the animals, selling them at a good profit. However, I also pick up good money handling colts and training horses for others on a fee basis. For instance, a farmer had a beautiful driving bay that had the bad habit of shying. A piece of paper blowing across the road would set the horse crazy. The owner thought a great deal of the animal, but couldn't take chances on the shying habit. A friend of his for whom I had done some work put this man in touch with me and in a few hours I had the horse completely cured of the habit—for which job I received $50.

Curing Bad Habits

You can see from this that my work consists not only in breaking colts and "gentling" vicious horses, but in curing the various bad habits a horse can have—such as shying, balking, fear of automobiles, etc., pulling at hitching strap, pawing in the stall, etc. etc., Beery's methods of colt breaking are particularly amazing. Under the old way of handling green colts one usually had to half kill the horse as well as himself to accomplish anything—and then the colt was usually spoiled or hurt in some way or other. But, when you apply Beery's principles, there is no hard, long work or injury to the colt.

No one should have a biting, kicking or balky horse when it is so easy to cure these vicious habits. No one should attempt to break in a colt the old fashioned way when Beery's methods make the task so easy. To every horse owner, to every lover of horseflesh, my advice is to get acquainted with the Beery principles. You can not only make money for yourself, but you can do a world of good, particularly at this day when war-demands have placed a premium on horses.

Wonderful Book Free

I have been requested to state that Prof. Jesse Beery will send his remarkable booklet, "How to Break and Train Horses" free to those interested. It is a booklet well worth having as it reveals some startling information on horse-training. I have heard men who considered themselves expert horsemen say that the booklet was a revelation to them. There is no use in my going into details on the booklet when you can get it free for the asking.

Just drop a line to Prof. Jesse Beery, Dept. 503 Pleasant Hill, Ohio, and the booklet will be sent free by return mail. A postcard will do as well as a letter.

It's dollars to doughnuts—

no man ever smoked a better cigarette at any price!

CAMELS quality, and their expert blend of choice Turkish and choice Domestic tobaccos hand you a cigarette that will satisfy every smoke desire you ever expressed. You will prefer this Camel blend to either kind smoked straight!

Camels mellow-mildness will certainly appeal to you. The "body" is all there, *but that smoothness!* It's a delight!

Go the limit with Camels! They will not tire your taste. And, they leave no unpleasant cigaretty aftertaste or unpleasant cigaretty odor!

Just compare Camels with any cigarette in the world at any price!

Camel CIGARETTES

Camels are sold everywhere in scientifically sealed packages of 20 cigarettes for 20 cents; or ten packages (200 cigarettes) in a glassine-paper-covered carton. We strongly recommend this carton for the home or office supply or when you travel.

R. J. REYNOLDS TOBACCO CO.
Winston-Salem, N. C.

Eat More Lamb.

It was unfortunate for the lamb industry during the war, to have had to experience the wrong impression that the eating of lamb was unpatriotic, when as a matter of fact, the greatest efficiency in producing lamb is during the first four months of its life. After that the cost of putting on gain steadily increases. The most profit to the raiser results when the lamb can be marketed early.

Another consideration as pointed out by Mr. W. H. Baireau, of the sheep and lamb grading department of Swift & Co., is that in buying a leg of lamb, the average consumer does not want one that will weigh from 10 to 12 pounds, but a smaller one weighing from 6 to 8 pounds. A mistaken policy on the part of killers, has been to place all mutton in the lamb class, which has turned the public against it. It is a well known fact that lamb does not carry the peculiar flavor that is characteristic of mutton. In order to eliminate this peculiar flavor, it is important to remove the "fell" or the thin papery membranes which cover the carcass. This can be peeled off easily and should always be done before cooking. This membrane is the source of the so-called "muttony" taste. It is the intermediate skin between the fleece and carcass.

Lamb meat is considered among the cleanest if not the cleanest that can be obtained. It is freer from the communicable diseases sometimes found in other meats. There are various uses for all the cuts. Among the cheaper grades is found the breast. This is used for broth and stew. Ranging from this to the loin or leg, all of the meat is very palatable and can be prepared in many appetizing ways. Look some of the recipes over and see if they do not appeal to your craving for good dishes.

Roast Leg With Mushrooms.

Have the butcher remove the bone from a leg of lamb, stuff the cavity with fresh mushrooms, chopped and mixed with a cupful of buttered crumbs and 3 tablespoons of cream. Roast in a hot oven and serve with caper sauce and currant jelly.

Braised Leg of Lamb:

1 leg lamb
½ medium sized onion
1 carrot
1 turnip
12 pepper corns
1 sprig each thyme and parsley
¼ cup drippings or butter
1½ teaspoon salt
3 cups hot water
½ bay leaf

Have leg of lamb boned, wipe, stuff with the mixture described below, sew and place in a deep pan. Cook the onion (sliced), carrot and turnip (cut into dice), bay leaf, thyme and parsley five minutes in the butter or drippings. Add the hot water, salt and peppercorns, and pour the mixture over the meat. Cook slowly for three hours, with the dish covered except for the last half hour. Make a brown gravy out of the strained broth in which the meat has been cooked. The stuffing for the braised leg is made as follows:

1 cup cracker crumbs
2 tablespoons melted butter
¼ cup boiling water
⅛ teaspoon pepper
¼ teaspoon salt
¼ teaspoon poultry seasoning.

Breast of Lamb.

Put the breast in a pan containing just enough water to cover it, salt, and simmer it until the bones break from the flesh. Draw the bones out and spread a forcemeat of crumbs, egg, thyme, sage and butter over the breast. Season with tomato catsup or sauce. Place in oven until brown and serve on a bed of steamed spinach, or if you use onions, with a garnish of them.

Stuffed Chops With Spinach.

Lamb chops
1 cup stale bread-crumbs
1 quart fresh spinach
2 tablespoons minced parsley
½ cup milk
1 tablespoon butter, salt, pepper

Soak the bread crumbs in the milk and add the spinach (drained and chopped) after it has been boiled until tender in slightly salted water. Add the minced parsley and other seasoning to taste. Trim off the chops and make a pocket in each chop close to the bone and stuff with the above mixture. Place the chops in a baking-pan or dish and bake until tender, basting frequently. The chops should be sprinkled with salt and pepper when about half done, and a little butter added if there is not enough fat around them.

Oven Pot Roast.

3 pounds meat from the shoulder
1 cup potatoes cut in small pieces
2 tablespoons flour
¼ cup sliced onion, salt to taste
1 cup carrots cut in small pieces

Put the meat into an earthenware bean pot and cover with boiling water. Place the cover on the pot and let the meat cook in a moderate oven for two hours. Add the vegetables and the salt, cover again, and cook for one hour. Reduce the liquid in which the meat and vegetables have been cooked to one cup and thicken with the flour.

Lamb Croquettes.

Four pounds of cold cooked lamb and two cupfuls of cooked rice (fresh boiled and still hot when mixed with the lamb), one teacupful of suet chopped fine; two sprigs of parsley, chopped; one nutmeg grated; an even tablespoonful of onion, after it is chopped as fine as possible; the juice and grated rind of one lemon, salt and black and red pepper, to taste. Chop the meat very fine; mix all well together; add cream until it is quite moist, or just right for molding. Mold them in the form of pears; dip them into beaten egg, and roll them in pounded cracker or bread crumbs; fry in boiling hot lard. A little stem of parsley may be stuck into each pear after it is cooked, to represent the stem.

Stephens Holstein Sale.

The Stephens sale at Longmont held March 5 was very successful so far as the Holsteins were concerned. Prices were considered reasonable to both buyer and seller. The top price of the sale was received for Queen Mercedes Creamelle Lady, an excellent young cow that sold to E. L. Sloan of Keenesburg, Colorado, for $800. The average for 37 females including the young calves was $314. The average for four bulls was $193. The interest was keen throughout the sale. Out of state buyers were R. H. Woolverton of Santa Fe, New Mexico and M. N. Johnson of Douglas, Wyoming. The greater part of the offering was retained in Colorado.

There were 14 grade cows and heifers offered. These were tried cows, all of them showing good production. They were sold to the local dairymen at prices ranging from $150 to $300. The demand for these was strong. List of sales follows:

Bulls.

Crewsdale Bosma Pontiac 123139 to ——— $200.

Longmont Colantha Cornucopia Paul 104549, to W. N. Johnston, Douglas, Wyo., $250.

Cherwall Mercedes Paul 293204 to John Hastings, Longmont, $250.

Bull, to Claude Clements, Boulder, $75.

Cows.

Fenicia 3d De Kol Belle 108236 to M. N. Johnston, Douglas, Wyo., $375.

Bion De Kol Houwtje 180399 to Harry Tallman, Brighton, Colo., $525.

Bion De Ko lHouwtje 2d 288990 to W. E. Forsythe, Longmont, Colo., $400.

Breezy Point Houwtje Segis 238485 to Walter H. Wilson, Boulder, Colo., $400.

Houwtje Segis Creamelle 371283, to L. C. Donley, Morrison, $425.

Canary Nonesuch 3d 286993 to R. H. Woolverton, Santa Fe, New Mexico, $425.

Canary Nonesuch Creamelle 371282 to E. L. Sloan, Keenesburg, Colo., $450.

Bion Clothilde Hengerveld Segis 218449 to Fred Tracy, Longmont, Colo., $525

Clothilde Hengerveld Creamelle 371285 to J. H. Yeager, Longmont, $525.

Korndyke Fenicia De Kol Belle 2d 251397 to R H. Woolverton, Santa Fe, New Mexico, $100.

Gerda Dutchland Creamelle 252309 to Harry Tallman, $525.

Queen Mercedes Creamelle 371284 to E. L. Sloan, $800

Butter Maid Creamelle Lady 328679 to M. N. Johnston, $600.

Bertha Canary De Kol 2d 332789 to J H. Yeager, $450.

Bertha Canary Creamelle 371286 to E. L. Sloan, $700.

Ritta Niobe Pietertje Paul 279395 to W. P. Forsythe, Longmont, $250.

Cherwall Cornucopia Canary 550741 to Geo. Yeager, Longmont, $150.

Female, ——— to E. L. Sloan, $275.

Cherwall Colantha Queen 550730 to E. L. Sloan, $300.

Lady Pontiac Boom 550738 to F. L. Powers, Ft. Lupton, $150.

Houwtje De Kol Creamelle 550735 to Earl Hodson, Lafayette, $375.

Longmont Houwtje Pontiac 550737 to E. D. House, Ft. Lupton, $150.

Breezy Creamelle Segis 550736 to R. H. Woolverton, Santa Fe, $375.

Pride Nonesuch Creamelle 550739, to R. H. Woolverton, $375.

Cherwall Pontiac Nonesuch 550740 to W. Pilcher, Longmont, $150.

Cherwall Bertha Creamelle 550731, to Geo. Yeager, $250.

Cherwall Canary 550732, to E. L. Sloan, $125.

Gerda Longmont Creamelle 550743 to Lee Johnston, Longmont, $300.

Gerda Pontiac Creamelle 550744 to E. D. House, Ft. Lupton, $150.

Cherwall Pontiac Clothilde 550734 to E. D. House, $150.

Longmont Hengerveld Segis 550733, to R. H. Woolverton, $375.

Longmont Korndyke Fenicia 550745 to F. L. Powers, Ft. Lupton, $150.

Female———to Lee Johnston, Longmont, $300.

Female ———to Harry Yeager, Longmont, $300.

Female ———to W. H. Wilson, Boulder, $250.

Longmont Colantha Creamelle 550742 to Walter Heivelson, Boulder, $225.

Curtis Holstein Sale.

The sale of Holsteins at the C. W. Curtis and Sons farm at Sedalia was held March 2. The crowd attending was rather small and comparatively few were buyers. It was an opportunity for those who desired to buy cows and heifers to get them worth the money. Much of the stock was sold to speculators. Quite a number were purchased by the Carlson & Frink Creamery company and will be distributed to the dairymen desiring them, in the vicinity of Castle Rock and Fountain. Those purchased by the speculators will be sent to New Mexico and other places where there is demand for them. Besides some 4 head of cows and 9 bulls registered, the remainder of the offering of 70 head were grade cows and heifers. The registered bulls several of which were calves, sold at a very low price. It was an excellent opportunity for some of those present to get a registered bull for their herd.

The grade cows and heifers ranged in price from $27.50 to $225. The latter price was paid for an excellent producing cow and the lower figure was paid for some heifers. One of the real bargains of the sale was on 9 head of excellent young heifers from one year to 15 months old. They were easily worth $100 each but sold to a speculator for $50 each. They will be shipped to New Mexico. Those kind are a loss to Colorado and should have been kept here. Some very good two and three-year-old milkers sold for $100 to $125 each. The registered cows sold as follows:

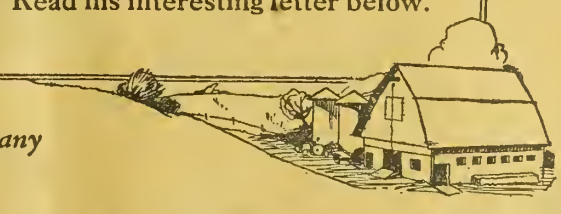
Merena 2nd, to Carlson & Frink Creamery company $280
Merena to Norman D'Arcy of Parker 150
Cow to Carlson & Frink Creamery company 200
Cow to Carlson & Frink Creamery company 175

The prices were just a little low for some of the quality offered. Some of the plainer grades sold as well as could be expected.

Mr. Curtis and the sons are now all sold out of grades and will devote their efforts to the breeding of registered stock. They have some excellent cows of the kind that are heavy producers of milk and butterfat and they will be in position to supply some breeding bulls in the future to those in the market for them.—H. A. L.

"No, this Outfit isn't perfect— but it's pretty darn near it"

That's the kind of testimonial we like. It is part of a letter written us by Willis Cornell, of Baldwinsville, N. Y. Mr. Cornell bought one of our Power and Light Outfits about a year ago and writes some plain facts about it. Read his interesting letter below.



Willis Cornell.

Western Electric Company

Dear Sirs:

"The only place where I know that perfection exists is in heaven and in patent medicine claims. I will say though that most of the many farm light plants admit they're the best. Maybe I'm foolish, but I didn't buy any of these *'best'* ones—I bought a Western Electric.

"I don't believe a sane man would point to any one automobile made in America and call it *'best.'* And doesn't that apply to power plants too? Price enters, so do looks, pride and the purpose you want the plant for.

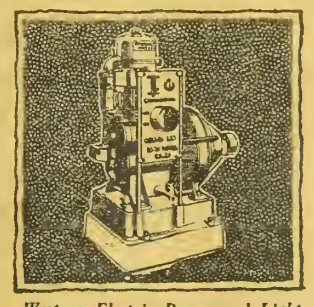
"It seems to me that a farmer's main purpose in getting a plant ought to be power, plenty of power. Any man knows what excess power in a motor car means on hills—but that isn't half as important as ample power in a farm plant. You can go up a hill on second, but your farm work goes down hill unless you have enough power to run the machinery.

"So when you think of electricity don't think of light and stop there. Of course, the light is mighty handy, but it is

The extra powerful outfit that saves time and money

"With its extra capacity engine and ample generator the Western Electric Outfit is an economy because it will do all the big and little chores around the place.

"If you have a gas or kerosene engine on your place you know what a valve-in-head motor does to give more power, and how important it is to have an oiling system that works for sure. (That last is the difference between 20c a quart and burned out bearings at $2.00 a pound.)



Western Electric Power and Light Outfit—A Strong Arm on the Farm

"With your Western Electric Power and Light Outfit you get an engine that runs smooth when you want it to run—and develops power a-plenty to operate all the machinery you've had to turn by hand.

But an outfit is only as strong as the batteries

"Nobody knows just how a battery works. We don't any more know what goes on inside a human being, but we do know what's good for us and what hurts. It's the same with cows or with batteries. If a battery takes current too fast it stalls on its food—a kind of electrical indigestion, I argue—and it's a pretty expensive dyspepsia when you have to buy a new battery.

"So I think the Western Electric method of *regulating* the charge is great. I should say I know it is, because my battery is standing up in fine shape.

"I wouldn't say anybody's plant is the best, but I will say that if any man thinks he can find on my farm a better piece of machinery than the Western Electric Power and Light Outfit, why I'll help him hunt. No this outfit isn't perfect — but it's pretty darn near it."

Western Electric Power & Light

Are you interested in Power and Light that can handle your heaviest work? Just write a postcard to the Western Electric Company at Denver or Salt Lake City, and be sure you ask for booklet WL-2.

Some good territory still available for live-wire representatives.

Makes the Battery last longer

The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Spring.

I guess the pussy-willows now
Are creeping out on every bough
Along the brook; and robins look
For early worms behind the plough.

The thistle-birds have changed their dun
For yellow coats, to match the sun;
And in the same array of flame
The dandelion show's begun.

The flocks of young anemones
Are dancing round the budding trees
Who can help wishing to go a-fishing
In days as full of joy as these?
—Henry Van Dyke.

March.

Whither doth now this fellow flee
With outstretched arms at such mad pace?
Can the young rascal thinking be
To catch a glimpse of April's face?
—Robert Loveman.

Do We Need Rural Libraries?

Do the women of the farms in Colorado, Wyoming, Utah, Idaho and New Mexico want more and better books for home reading? Is there a demand for county libraries? We hope all will read the article in this issue headed "Our Farmers Need Books," and then comment on it, if it seems to fill a need. The American Library Association is behind the movement for establishing libraries for rural people, just as they have been established almost everywhere in towns and cities. Farm people are entitled to the same facilities and there is a way of providing them. Let us hear from our readers on this subject.—E. D.

My Way With School Lunches.

It would seem that the subject of "Lunch Pails and Their Contents" had been exhausted, but they are continually before us, and if we wish our children to get the most out of a cold lunch, some time and thought must be given to the contents of the pail.

By all means, if your school can do it, serve a hot lunch or at least, in part. It can be done so easily by a little co-operation from teacher and parent; but if this is impossible, then the cold lunch is the only solution.

This may be made very palatable, however, by using a variety of fillings in sandwiches.

Peanut butter, cream cheese, the kind that spreads, sardines mashed fine, and any cold sliced meat, furnish enough changes that one need not tire.

Brown (graham) bread spread with peanut butter and sprinkled with brown sugar makes an unusual, but very good sandwich. The jelly sandwich does not appeal to me, as it gets so mussy in a few hours. A small glass filled with rice pudding, baked beans, jello, chocolate pudding (which is just a plain cornstarch custard with a little cocoa added to give it color and flavor), and served with a teaspoonful of cream, any of these, with two or three sandwiches, and an apple, or some other fruit preferred, ought to satisfy any appetite. A sweet may be added. My children like a handful of raisins, two or three pieces of candy, couple of cookies, or small cakes baked in muffin pans are better than slices of cake.

And when possible, always pack the lunch yourself. It tastes better to your child if someone else has packed it than when they already know what they are going to eat.—Mrs. John August, Sterling, Colo.

Water Filter for School.

In a great many rural schools, especially in the dry land sections, the question of an adequate water supply is a difficult one to solve. A school in such a section in Colorado sent an account of the following difficulties encountered there, and asked for some special information.

They had no well except one of very strong alkali water and the distance and difficulty of hauling potable water were entirely too great. Neither were they satisfied to have the children carry water in tin pails. They wanted to try filtering the rain and snow water off the roof into a cistern, for they believed that a cistern properly taken care of would be an adequate supply. It would in ordinary good years certainly.

We found a man who had made filters in a tin shop for this purpose, and he sent them the following directions, which we are also passing on to the readers of this page:

The filter consists of a galvanized iron cylinder, three and one-half feet high and eighteen inches in diameter, with an intake and outlet each three inches in diameter. The suggestion was made that a 40-gallon tank, such as is used for household purposes, would make a very good size.

The lower part of the filter up to one-third or one-half the length is filled with sand and gravel. Above that to within ten inches of the top is placed charcoal in pieces the size of a small marble. About twice a year this charcoal and gravel must be cleaned out and replaced with fresh material.

This filter is of a size for ordinary family use. A larger one, or two of this size, on each side of the building would probably be necessary for a school of twenty pupils. This filter with a good clean cistern would provide water where otherwise a supply would be very hard to get.

Our Farmers Need Books.

F. ELLISON ADAMS.

The United States Bureau of Education recently compiled statistics which show that 2,170 of the 2,964 counties in the United States do not contain a public library of 5,000 volumes or more. But an active movement is on foot for the establishing of county libraries throughout the entire country—the opening up of a complete library system to the sixty million or more Americans who live on farms or outside of the big cities. Then every farmer and his family, no matter in how remote a place he makes his home, how difficult to travel are the roads, or how small his community may be, can have books delivered to him at his door.

One of our best authorities on the subject, Dr. P. P. Claxton, United States Commissioner of Education, tells us that he considers "the county library plan an important stage in the educational development of this country."

"Generally speaking," said Dr. Claxton recently, "the cities of the United States are well supplied with library facilities, but there still remains the great problem of giving the rural citizens the same opportunities of contact with the world of books as are enjoyed by his city brother. Personally, I believe that the inhabitants of rural districts profit even more from reading than do those who live in the centers of population. My own experience, as well as that of other educators, has

How long does a pound of tea last?

Depends on the tea.

Fine tea has more cups of real tea-flavor to the pound than common tea.

On the other hand, you drink more: it is so good.

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—and welcome for three splendid reasons, especially in these days of soaring costs—because Calumet gives three big positive helps in reduction of living expense.

You save when you buy it—moderate in cost. Leaves you more money with which to buy other things. You save when you use it—has more than the ordinary leavening strength—therefore you use less. You save materials it is used with. Never fails.

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Produced in largest, finest, most sanitary Baking Powder Factory in the World. Contains only such ingredients as have been officially approved by United States Food Authorities. The first choice of millions of housewives for a third of a century. Order from your dealer.

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Dixie's Land
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Sweet Alice
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Do you know these 26 songs?

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Send me your free song book "Songs of Long Ago."

Name.....
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Would you like to have a piano or player-piano?.....

been that country people read better books than townsfolk; they read better books and get more out of them."

The county library plan, in brief, is as follows: It is proposed to establish at the county seat or in the largest town in every county in the United States one central library, stocked with an up-to-date collection of books and pamphlets, giving the best and latest information on subjects of special interest to farmers, and also carrying a wide variety of reading matter of general interest and fiction. In communities of any size in the county, branch libraries will be maintained of similar nature. The county library also will lend books to any number of deposit stations in the county, so that the smallest community therein, no matter how remote or inaccessible, will have a library of its own. Deliveries will be made by trucks or book wagons to country stores, toll gates, post offices, school houses, private homes, or wherever the deposit stations are maintained, and upon request new collections will be sent out in exchange for the books on hand. In this way every farmer will have access to the entire collection. The expense of the service is to be met locally by county taxation; the rate to be governed in each case by the needs of the county—but limited to a small assessment. In California, the state in which county library service has reached its fullest development, considering the great advantages afforded to the individual and to the community, "the small expenditure is readily seen to be an investment which will bring returns that cannot be estimated in terms of dollars and cents."

Many remarkable stories are told of the mission which books have performed in out-of-the-way rural communities. They constitute the strongest appeal we have for the extension of the county library system.

There was a teamster in New Mexico, where libraries are very scarce, "who traveled over 90 miles through the mountains with thirty span of horses and three lumber wagons of provisions for the stores on the Navajo reservation. He tried to beg books to read by the camp fire at night. The only three he could find, at the little jerk-water station where he met the freight that brought in the provisions, was a small Testament, a collection of dry essays, and "What a Young Man Should Know." The station was 300 miles from the nearest library at Albuquerque, but the man's disappointment was so great that the telegraph operator—a young woman—wrote to the librarian and asked her to please send, charges collect, any old books she had on hand which were too worn for further use in the library. She immediately received two large boxes full of dilapidated books and set to work repairing them. She pasted in all loose leaves and tightened each book securely in the back, then she made covers of cardboard over which she sewed pretty cretonne, fastened each cover to its book and stencilled the name in ink on the front cover. The next trip the teamster made he had a dozen or more books of fiction to read. He was much pleased and the news spread among some lumber men, a few miles up in the hills, who quickly came for their share of books. Before the operator was transferred to another station she had repaired three other large boxes of books, and they went like hot cakes."

In a remote and wild little mountain settlement in Washington county, Maryland, between the foothills of the Blue Ridge and the Cumberland mountains, "live the descendants of two families between whom a feud has been waged for several generations. Gradually they are becoming industrious, law-abiding citizens, though to this day the men, when intoxicated, are the terror of the surrounding country. When the Book Wagon first visited these people, the men were seldom at home and the women were shy and fearful of strangers. It was with them as with the Indians—once a friend, always a friend. For, by degrees, the library visitor has found a place in their lives and now every door is thrown open in friendly welcome on the Book Wagon's semi-annual visit.

It is the farmer himself who must lend his good will for the realization of the nation-wide county library system now being promoted by the American Library Association. Without his co-operation nothing can be accomplished; and as this movement is entirely for his benefit, as well as for the benefit of his family, his community and the future generations, he should give it his whole-hearted support.

New Fashion Service.

All Patterns Now 12 cents Each: Address WESTERN FARM LIFE, Pattern Department, 1518 Court Place, Denver, Colo.

Please note change in price, a reduction from 15 to 12 cents which becomes

effective on patterns ordered from this and subsequent lists. We also wish to announce that we have been able to make arrangements for mailing patterns from Chicago, instead of from New York. This means a saving of several days' time in filling orders. Please be sure to specify size, and to give your complete postoffice address.

No. 9596. Ladies' and Misses' Blouse. Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. This blouse is particularly easy to get into as it slips on over the head.

No. 9604. Ladies' Waist. Cut in sizes 36, 38, 40 and 42 inches bust measure. Deep tucks trim this slip-on blouse of pongee.

No. 8853. Ladies' House Dress. Cut in sizes 36, 38, 40, 42, 44 and 46 inches bust measure. A well-fitting six-gored skirt is the feature of this trim house frock.

No. 9601. Ladies' House Dress. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The one-button fastening makes a neat and easily adjusted closing for a house dress.

No. 9593. Child's Rompers. Cut in sizes 1, 2, 4 and 6 years. Perky pockets of chambray are applied to the straight gingham rompers.

No. 9595. Girls' and Child's Nightgown. Cut in sizes 1, 2, 4, 6, 8, 10, 12 and 14 years. The neckline is round and adjusted with ribbon so that the nightgown can be slipped over the head.

No. 9597. Ladies' Two-Piece Skirt. Cut in sizes 26, 28, 30 and 32 inches waist measure. The front gore is fitted but the back is gathered.

No. 8952. Ladies' Skirt. Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. The attractive tunic drops into a long point at front and back.

Bachelor's Cookies Again.

Miss Haynes of Colorado Agricultural College comes to our rescue with this recipe for a good drop cookie. You will notice very few of the suggestions for cookies—to be man-made—test his patience with rolling and cutting them out. They are all dropped from a small spoon.

OATMEAL HERMITS.

2 cups oatmeal.
1 cup seeded raisins.
½ cup nuts through coarse cutter grinder.
1 cup sugar.
1 cup shortening.
2 well beaten eggs.
1 teaspoon soda dissolved in 6 tablespoons sweet milk.
1 teaspoon cinnamon.
1 teaspoon nutmeg.
2 cups flour.

Add sugar and shortening to well-beaten eggs. Add soda and milk and then dry ingredients and raisins. Mix thoroughly, drop from teaspoon on buttered tin, allowing space between cookies. Bake in a moderate oven.

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It is hardly possible to insist too earnestly upon the supreme importance of an abundance of fat-nourishment during the winter to keep up energy and body-warmth.

Scott's Emulsion

is an easily assimilated fuel-food that is of particular advantage to those who feel winter's cold overmuch. *Scott's* nourishes the whole body and sustains strength.

Be sure it Scott's.

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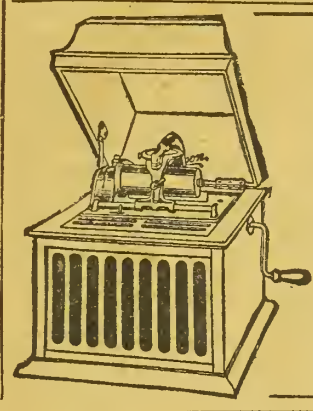

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Have You Imagined
That there may be a secret in THE DENVER'S splendid success?
THERE ISN'T A SECRET—NOT ONE.

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MEN— The Tailors Who Build Our Clothing Are Among the Best In America. We Are Back of Every Garment We Sell and
Our Prices for Men's Clothing Are Less
THE DENVER DRY GOODS CO.

Finding Out About Fruit Jellies

HOW SCIENCE IS HELPING THE HOUSEWIFE.

Dr. N. E. GOLDTHWAITE.

For nearly three centuries the highest ideal of the scientist has been to add new truths to the world's stock of knowledge. This is done through research.

What is research? Research is asking questions of nature—asking them in such a way that nature can answer intelligently. Nature always answers any of our questions, but if the questions are bunglingly put the answers will be unintelligible; if put in a clear-cut, scientific way, the answers will be likewise clearcut.

The woman who planted a thousand catalpa trees on an arid plain asked nature a definite question—though she did not intend to do so—and got a definite answer: The catalpa trees all died. It was an expensive experiment, but there was no doubt of nature's answer. The scientific mind, however, would have put the question on a less extensive scale, and would have gotten just as definite an answer.

In 1908 the author was asked by the University of Illinois to investigate the WHY of fruit jelly-making. Now in any scientific research, the first thing to do is to study up the literature of the subject, i .e., to read all the scientific articles bearing on the subject that have been published in the past in the various scientific journals the world over. Fortunately, the University of Illinois is rich in complete sets of scientific journals published in various languages, just as any higher institution that aims to do research, must be. Examination showed that little research had been done on fruit jellies directly; however, something had been done on the essential jelly-making substance, pectin, which is usually found in fruit juices, and this was more important.

Following this study of the literature, the scientist makes a plan of work, a plan of attack—that is, formulates the tests by which he proposes to question nature concerning the subject to be investigated. To question nature, the scientist must so put each question that he controls all the conditions but one, and that one condition he thus asks nature to tell him about—that is, he makes it possible for her to tell the secret of that condition intelligibly.

For example: The housewife from unknown times has made fruit jellies by the time-honored rule, a cup of sugar to a cup of juice and boil till the mass jells; and then sometimes has reason to wonder why her jelly did not jell well this year. To the scientific investigator, the relationship of sugar to juice seemed the first point of attack in the jelly problem. She asked, what is the effect of increasing the proportion of sugar to juice? Of decreasing it? Can fruit jelly be made without sugar? To get nature's answers to these questions the scientist planned experiments with a quantity of a given fruit juice (cooked out of the fruit) as follows:

1. One cup of juice and 1 cup of sugar boiled until the mixture jells, gives what quality of jelly?
2. One cup of same juice and 1⅛ cups of sugar give?
3. One cup of same juice and 1¼ cups of sugar give? and so on, each time increasing the amount of sugar by ⅛ cup.

The results of these experiments proved that though the first proportion of ingredients produced a good jelly, yet with increasing proportion of sugar to juice, the jelly grew greater in volume, but softer and softer in texture, till finally when removed from its mold it spread all over the plate. It was a syrup, not a jelly.

The next experiments were made decreasing the proportion of sugar to juice, as follows:

1. One cup of juice and ⅞ cup of sugar give?
2. One cup of juice and ¾ cup of sugar give?
3. One cup of juice and ⅝ cup of sugar give? and so on, decreasing the proportion of sugar by ⅛ cup in each experiment; finally the last was the boiling of juice without sugar. These experiments proved, just as she had been able to foresee from the first set of experiments, that with decreasing proportion of sugar the jelly grew stiffer and harder, till the juice boiled with no sugar at all produced only an unpalatable, leathery mass.

Reviewing these experiments, the investigator saw that a good quality of jelly results usually between the proportions ¾—1 cup of sugar, to 1 cup of juice.

Thus it was learned from such series of experiments, that in jelly-making some definite relationship exists between the proportion of sugar to juice. Nature's answer to each experiment or question had been very definite.

The question of the behavior of other fruit juices with sugar was next attacked, and it was found by experiments similar to those outlined above, that whereas some fruit juices make excellent jellies by the housewife's old rule already quoted, other fruit juices will not respond with a good jelly when more than ¾ of a cup of sugar to 1 cup of juice is used, and that others may sometimes demand a still less proportion of sugar.

In the course of these experiments with different fruit juices, it had been discovered that sweet apple juice failed to respond with the good quality of jelly so characteristic of sour apple juices. Thereupon, it was determined to neutralize the acid in sour apple juice and test the jelly-making power of the result. Instead of the previous excellent jelly made from this juice, a mere syrup resulted. So the acidity (tartness) of the juice has much to do with the jelly-making power of fruit juices? Accordingly, another series of experiments was planned and carried out whereby the acids in the different fruit juices were neutralized before being subjected to the jelly-making process. Alike, they all refused to produce jelly. Thus had been solved another secret of jelly-making. The more acid the fruit juice, the better in general is its jelly-making power.

This fact was clinched by adding acid to the juices of different sweet fruits, and it was found thereby that these non-jellying juices (peaches, pears, etc.), can thus be made to produce jelly; however, in all cases the delicate flavor of the fruit was invariably destroyed by the acids used, although these were always fruit acids.

But why does a non-acid juice (or a nearly non-acid juice) produce jelly when acidified? Why does a given volume of fruit juice require just a definite volume of sugar to produce a good quality of jelly? The secret must lie in the chemistry of the jelly-making substance: pectin. So the scientist proceeded to isolate this jelly-making pectin from fruit juices. In her search through the literature, she had found in an old volume of a French scientific journal an article on pectin, published in 1825 by the French chemist, Braconnot. Braconnot studied pectin extensively, and the finding of his article saved the investigator a year's work or more. She adopted one of Braconnot's methods of isolating pectin from fruit juices by means of alcohol.

Addition of alcohol to a fruit juice quickly proves whether or not pectin is present. If so, a thick gelatinous body at once appears. Any housewife can prove this by adding to a tablespoonful of fruit juice a tablespoonful of alcohol (denatured will serve the purpose), stirring and cooling; the thick, gelatinous precipitate is made more evident by gathering it up on a spoon. In fact, this is the best test to prove whether or not a fruit juice contains the essential jelly-making substance, pectin.

Pectin, having been isolated from various fruit juices, it was found on purifying and drying the substance, that, just as described by Braconnot, it is a white amorphous body, something like starch in appearance. On re-dissolving some of this pectin in water, and attempting to make jelly by adding sugar and boiling, only a syrup resulted. A fruit acid was added, and a jelly appeared! A few drops of a highly colored fruit juice, and lo! a jelly approximating nature's own!

Nature had answered the questions put to her: Pectin is the essential jelly-making substance, but it must be properly treated with sugar in acid solution to make it "jell." Nature herself provides an acidified solution of pectin par excellence in currant, sour apple and unripe grape juices; these will usually utilize one cup of sugar to one cup of juice. She provides a less acid solution of pectin in raspberry and blackberry juices, which usually respond best to the proportions ¾ cup of sugar to one cup of juice.

Juices for jelly-making should be cooked out of the fruit. But if much water has been added in this extracting process, then the proportions of sugar to juice must be lessened, since the highly watered juices are less rich in pectin per cup than juices more nearly nature's own dilution.

"Ideal fruit jelly is a beautifully col-

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Even though it's dark, you can see a black skunk a long way on white snow. See him well enough to hit him with the first shot from your deadly accurate little .22 Savage Junior. And if there's a moon, it's as easy as daylight.

The next evening it thaws, take your little Savage Junior rifle and go for a walk. Wear your oldest clothes, and take your skinning-knife. There's money in it, and the chickens won't suffer so next year.

The .22 Savage Junior single-shot is the boiled-down essence of rifle—all accuracy—all reliability—Savage quality condensed in three pounds, and at only $9.75. Your dealer has it for you. For a complete description, write us.

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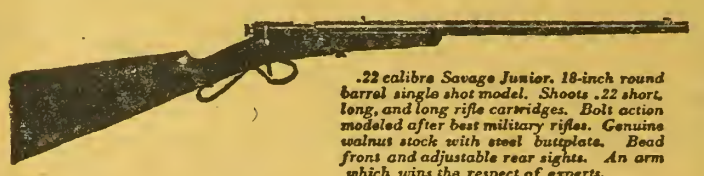

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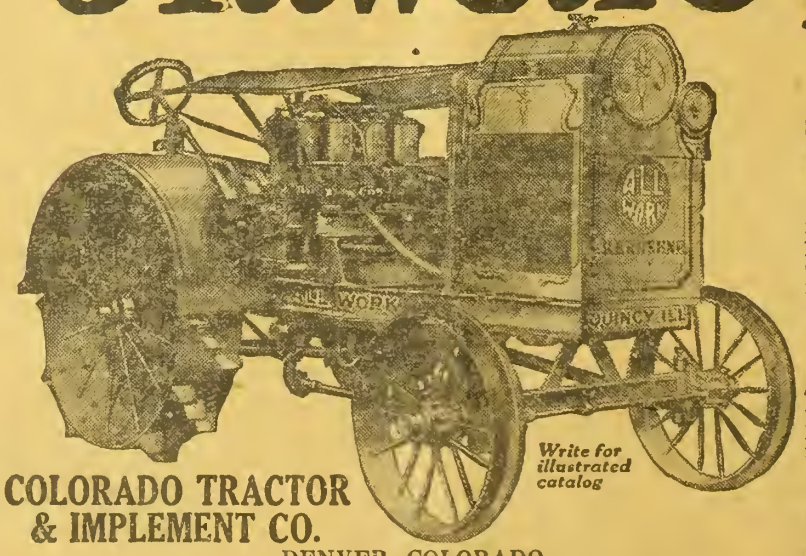

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ored, transparent, palatable product obtained by so treating fruit juice that the resulting mass will quiver, not flow, when removed from its mold; a product with texture so tender that it cuts easily with a spoon, and yet so firm that the angles thus produced retain their shape; a clear product that is neither syrupy, gummy, sticky, nor tough; neither is it brittle and yet it will break, and does this with a distinct, beautiful cleavage which leaves sparkling characteristic faces. This is that delicious, appetizing substance, a good fruit jelly.—(Goldthwaite, Principles of Jelly-Making.)

(If desired the author's bulletin on Principles of Jelly-Making can be obtained by requesting it of the University of Illinois, Urbana, Ill.)

Remarkable Development of the Big Horn Basin.

(Continued from Page 6).

solidated schools where the children from the surrounding country are brought to the town schools. All of the towns are also well supplied with churches of various denominations.

Coal, oil and natural gas are found in abundance. Two of the largest gas wells in the country are located at Byron. The gas is piped to Basin, Lovell and other towns and used for fuel. The coal strike last fall had no terrors for those towns that were supplied with natural gas. The gas is also a great aid to the manufacturing plants in the Basin. The mines at Gebo and Crosby supply a good quality of coal to the towns of northern and central Wyoming. The Grass Creek and Elk Basin oil fields are among the best in the state.

One of the main automobile highways to Yellowstone Park passes through the Basin, and the mountain sections to the west and southwest and the Bighorn Mountains on the east afford the best hunting and fishing. The big-game country is tributary to the Basin and many fine summer resorts are found in the surrounding mountains. The adjacent forest reserves afford good summer grazing for sheep and cattle and cheap wood and timber for the settlers. There is a heavy growth of cottonwood timber along the river bottoms which gives the settlers on these lands a plentiful fuel supply.

Good Opportunity for Settlers.

To the settler who desires land for a home or the man who wants to invest in land the Bighorn Basin offers exceptional opportunities. Land values in many parts of the Basin have not yet risen as high as in other sections. Homestead lands can still be obtained and improved farms can be purchased at reasonable prices. Lands on the government irrigation projects can be purchased for $70 to $90 per acre with water right. Only a small payment is required down and 10 to 20 years time is given on the balance. These lands increase rapidly in value as they are improved. Farms on the Shoshone project have sold for $250 to $300 per acre within the last year. Good lands can still be purchased in the Basin however for $100 to $125 per acre, or even less in the outlying sections. As new irrigation projects are opened up more opportunities for getting cheaper lands will be offered. Land values however will never be lower than at the present time.

Probably not more than one-tenth of the land in the Bighorn Basin that is susceptible of irrigation and cultivation is as yet begun to be developed. Where there is diversified farming on both large and small areas, and some livestock such as is found in this section, there is bound to be an increase in land values. Where alfalfa, sugar beets and potatoes are grown successfully there is an increase in bank accounts and in soil fertility. The record of a ranchman in Bighorn county shows what can be done in that section with ordinary intelligence and business ability. Here is the story as he gave it:

"I purchased my ranch in 1907 and after clearing the sage brush raised the first crop in 1909. I started in with the object of making the ranch produce $30,000 worth of crops per year. In 1918 it produced $34,000 worth of crops, and after deducting all expenses and allowing for interest on the money invested in horses and machinery it made a net profit of $18,704. For the last five years I have made a net profit of slightly over $20 an acre on the farming end of the ranch alone, exclusive of the livestock business which I have always conducted separately

"I attribute my success largely to the fact that all of my crops have been fed to livestock on the land, which has made possible the steadily increased yields. Without livestock I question whether anyone can make much farming the same land over a period of years, as the two go hand in hand. I have never fed a ton of hay to cattle or sheep that I did not get more money for it than if I had sold it on the market. I have made more money per acre from sugar beets than from any other crop. I have cleared as much as $90 an acre from beet land. I know that every acre of land in the Bighorn Basin tributary to a beet dump is worth not less than $300, and will make interest on that if properly farmed."

Otero County Corn Show.

The Otero County Farm Bureau held its first annual corn show and seed corn sale at the Agricultural Club hall in Rocky Ford on Friday and Saturday, January 30 and 31. This proved to be a very successful show and created a great deal of interest in the raising of corn. It also proved to the people in general that this is a real corn country, and as good corn was shown as can be seen at any of the corn belt corn shows.

The corn show represented yields in many instances of over 100 bushels per acre. For instance, J. E. Lewis of near Cheraw showed samples from a large field that averaged 107 bushels per acre. This was Iowa Silvermine. Henry Weihing of Newdale had Golden Glow that made over 100 bushels. Karl Cassatt, one of our 14-year-old corn club boys, had Reid's Yellow Dent that made 104 bushels per acre. Karl got first prize on 10 ears at the Western National Stock Show at Denver. He also pulled down first prize in the acre contest in Otero county, but he had some real competition at the Rocky Ford show and the sample that took first at Denver only got second here.

The greatest number of prizes won by one man were won by Warren Blinn. Perhaps this was due to the fact that he knew how to select good ears, having had a good deal of training and experience along this line.

Following are the winners:

Golden Glow — William Morrison, first; Henry Weihing, second.

Iowa Silvermine — Warren Blinn, first; J. W. Jones, second.

Iowa Goldmine—George Droge, first.

Reid's Yellow Dent—Warren Blinn, first; Kart Cassatt, second.

Leaming's Yellow Dent — Warren Blinn, first; W. B. Moore, second.

Silver King—Warren Blinn, first; F. E. Wadleigh, second.

Swadley—Bert Carter.

Bloody Butcher—F. E. Wadleigh.

Colorado Yellow Dent—F. E. Wadleigh.

Early Mastodon—A. J. Lugenbill.

White Australian—W. H. Carrington.

Calico—W. H. Carrington.

Pop Corn—H. B. Wadleigh.

The prize for the best bushel of ear corn went to Warren Blinn on Reid's Yellow Dent.

For best single ear to E. G. Herzberger on Leaming's Yellow Dent.

A corn institute was held during the afternoon and we had a number of practical talks by successful corn raisers, including C. B. Sherwood, W. Morrison, Harry Badger, and others. Mr. P. K. Blinn gave an illustrated talk regarding his corn test of 29 varieties. The most interesting part of the program, however, was the demonstration on seed corn selection, seed corn testing and seed corn storage, given by the Smith-Hughes agricultural students of Rocky Ford under the direction of Prof. F. A. Riedel. These youngsters made quite a "hit." They brought out very forcibly the necessity of field selection of seed corn, how easy it is to test seed and the importance of proper storage of seed in order to insure good germination.

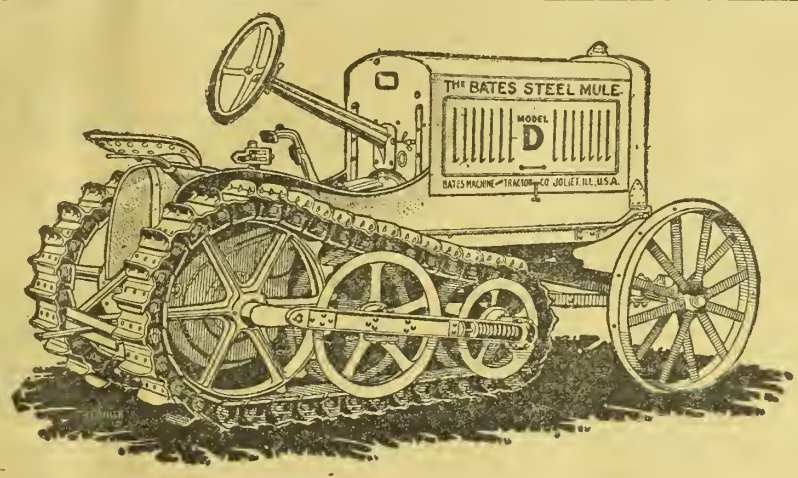
Our corn judge was County Agent C. E. Smith of Trinidad, who has satisfactorily judged our agricultural products at the Arkansas Valley fair during the past two years. Mr. Smith told us of the success that farmers are having in the east end of Las Animas county in raising corn and that it is corn and dairy cows that is making the country. Where corn can be raised, corn and dairy cows will make any country, especially when corn is supplemented with alfalfa hay.

The seed corn sale which was held immediately after the Farm Bureau program, was well patronized. The prize bushel of corn was sold for $12.50 and the best ten ears Golden Glow sold for $5. The total receipts for corn at this sale was $76.50. This was all sold subject to a satisfactory germination test and a sample of each lot was taken before it was removed.—Otero County Farm Bureau Reporter.

Potato Wart Under Control.

In the war against potato wart the United States has done in less than two years what other countries had not succeeded in doing in decades. Wart has been for a long time a destructive disease of potatoes in Europe, and the belief always was that once a garden or field became infected there was no way of eradicating it. An infected area, even when no potatoes were planted in it for a number of years, would show the disease still virulent when again planted to potatoes. The potato wart disease was discovered last year in gardens in some small mining towns in Pennsylvania. The United States Department of Agriculture quarantined the infected areas and the specialists of the department began experiments in control. They have now announced that a field or garden infected with potato wart can be thoroughly disinfected by the use of steam and formaldehyde. The cost of the work, however, is high, and it will be used only when absolutely necessary in cleaning up the infected areas.

Arctic explorers bring home tales of great mineral and oil deposits in the ice covered north.



A Better Seed Bed

GREATER grain yield on your farm calls for greater efforts at the source—the seed bed. And it is with the Bates Steel Mule that you will solve your greater production problems.

Bates Steel Mule Crawler type of traction goes into the field and outworks all other tractors and makes playtime of Spring Work. It does not slip on soft ground and therefore allows double discing and harrowing in one quick operation—assuring a finer seed bed.

The broad Crawler surface makes ground pack impossible.

Don't let Spring Work get the jump on you. Buy your Bates Steel Mule now and be prepared.

If your dealer has not yet received his Bates Steel Mule shipment, write Factory direct for full information and new catalog.

BATES MACHINE & TRACTOR COMPANY
Established 1883
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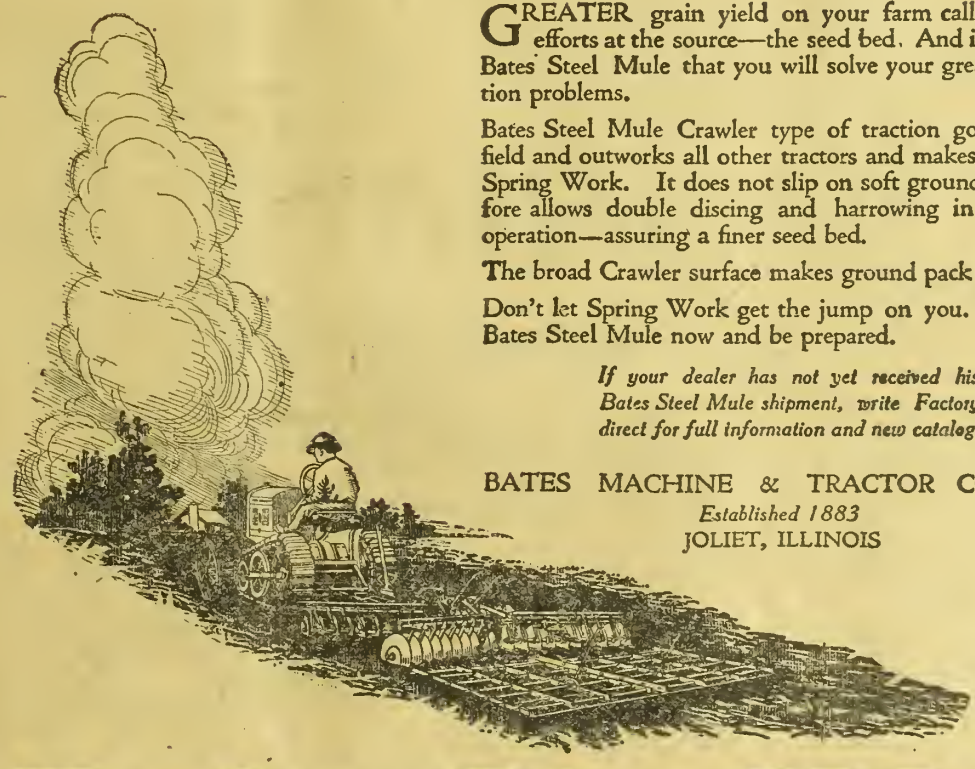


The New Bates Steel Mule
The most efficient Tractor in America

Profitable Farm Poultry

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, WESTERN FARM LIFE, Denver, Colorado.

How To Set a Hen.

At first thought, this seems to be a very simple subject, but when I hear of so many failures and poor hatches, I find upon inquiring that very few people know how to set the hen, or if they do they very seldom follow the best methods.

The first essential in starting in the business is to purchase eggs of some good, reliable breeder who mates nothing but strong, vigorous birds. Place your order for the eggs, but do not have them shipped until you are certain you will have a broody hen when they arrive. When the eggs arrive, do not place them under the hen at once, but place them in a cool, dry place and do not disturb them for twenty-four hours.

A day or two before you expect the eggs to arrive, arrange a place to set the hen. Whenever a hen is allowed to steal her nest away, she usually selects a cool, damp place, away from the flock, so she will not be disturbed. These conditions should be duplicated as nearly as possible when a place is being selected for the hen. If it is not possible to set the hen on the ground, a box should be provided and sod placed in the bottom of the box. This sod should be dampened and a small amount of straw should be placed over it. The center of the nest should be slightly lower than the outer edges, but should not be deep enough to cause the eggs to pile up in the center. On the other hand, if the nest is practically level, it will be noticed that the eggs roll from under the hen and are not kept warm enough to start incubation.

The box used to set the hen in should not be deep enough to cause the hen to jump down on the eggs, but should be shallow enough to allow her to step into the nest in a way that will prevent her from breaking the eggs. A cover or door can be made for the box so that the hen can be locked up. Never have more nests than you have setting hens. When the hens are released to get food, they do not always return to the same nest, and if there are extra nests, the hen that has been "cheated" out of her regular nest will take the next one to it, even if there are no eggs in it. The nests should be placed in a building or room that is not being used for other poultry so that the setting hen will not be disturbed.

The number of eggs to place under the hen will depend upon the size of the hen and the season of the year. Usually, fifteen eggs are considered a setting, and this is the proper number to give an average sized hen. However, if hens are set early, it is better to place only thirteen eggs under the hen.

Before the hen is set, she should be dusted with a good lice powder or sodium fluoride. Then she is ready for the eggs. It is well to repeat this dusting on the tenth and nineteenth days. The hen should be released from the nest and fed each day. Feed them close to their nests, so they will not hunt for the feed. Have plenty of fresh water and a good dusting box close at hand. Allow the hen to remain off until the eggs have cooled offi constantly. Never let the eggs become chilled, as this will prolong the hatch. Do not remove the hen after the nineteenth day. She will, if undisturbed, remain until the hatch comes off.—S. R. Stout, University of Arkansas.

A Poultry Breeding Secret.

Every one knows that in order to get what pullets they want, they must also hatch cockerels, as there is no known way of hatching all pullets. However, we are enabled to overcome this difficulty to a considerable extent by following these rules in mating up breeding-pens:

In the lighter breeds of the Mediterranean classes, we use one yearling cock bird of known reliability for every thirty or forty well-developed, vigorous pullets. With American breeds we use one yearling male of known reliability for every twenty or twenty-five well-developed, vigorous pullets. By giving these birds as large yards as possible, or unlimited range, we find that our hatches average from sixty to seventy-five per cent pullets. By this means we do not have to raise so many chicks to get the number of pullets we want, as we do if we use less females in our breeding-pens. A trial of this method will convince the most skeptical.—W. R. Curtiss.

Starting With Baby Chicks.

Would you kindly advise me if there is a necessity of chickens being acclimated. Some claim there is. I am considering trying to get a start with several hundred baby chicks from a firm which claims high egg strain stock. Some Denver houses claim acclimated chicks are essential. May I ask further what breed you found most profitable in your work? I believe the Leghorns are good layers but find markets prefer a larger chicken and pay more for it. I am inclined to favor the white Wyandottes. What do you know of them? Do you have any knowledge of Rock Island Whites and White Rocks and what comparison is there of these three breeds? I have 66 hens and pullets. I received $23.07 (market price) for eggs for February. Do you consider this good for chickens that are claimed to be purebreds, but which I find are slightly mixed? The R. I. Reds were the only ones which laid in November and December. I have ten Wyandottes, 8 R. I. and the rest Leghorns.—Mrs. H. C. B., Weld county.

1.—Chicks do not have to be acclimated; see last number of Western Farm Life and notice story of Mrs. Wadleigh who gets her baby chicks from California every year.

2.—For eggs only, White Leghorns.

3.—For eggs, broilers and roasters, R. I. Reds, White or Barred Plymouth Rocks, White Wyandottes. The R. I. Whites are an experiment and have nothing to warrant them as ranking with the older and tried varieties.

4.—If your hens laid as many as 10 eggs each in February they did well; the price received for eggs would lead me to believe they did that.

5.—The Dillon Nursery Co., in west part of Greeley can furnish you with good Wyandottes.—W. E. V.

On Raising Turkeys.

Last year I bought 20 turkey eggs and raised to maturity 10 splendid birds. This year I want to raise 100 or more. But how can I house and take care of a large flock? Any of us can take care of a few; but are there no large turkey farms? If so how are they managed?—E. D., Yuma county.

A few years ago it was generally supposed that an incubator would hatch hen's eggs all right but not those of turkeys; now we all know better. There is no reason why turkeys should not be raised the same way as we raise chicks, from hatching to maturity. The turkey is essentially a farm fowl; being more of a forager than the hen she requires much range and because she is primarily a meat proposition she must pick up more or less of her living to be profitable. As a baby the poult requires the same treatment as does the chick; warmth, protection, a variety of feeds. I have never raised turkeys but this would be my method: hatch in incubator. Hatch late in April or early in May. Put not to exceed 200 in a coal stove brooder of large capacity. Place this brooder in a double wall, well built house 10x10 feet with windows in south side. When poults are too large for the brooder remove them to an open front house, keeping them confined until they know their new home, then give them free range; while in the brooder house they should be permitted the run of a small yard on warm days. Chilling and wetting is fatal to poults. Probably most of the young turks would prefer to roost anywhere than under roof, but there is no harm in this after they are well feathered and the weather is warm. The feed may be largely cracked corn and broken wheat, whole wheat later. Bread soaked in milk, cottage cheese, oatmeal may vary the ration occasionally with profit but the money made in turkeys is that made on the range. I know of no turkey farm conducted as are chicken farms in Colorado, but many farmers are raising from 100 to 200. Perhaps the greatest drawback to turkey farms is the lack of range; the hen lays eggs to pay for the feed used in confinement, the turkey only has it's body to give so must be raised more cheaply. Where coyotes are bad and one raised large numbers of turks, very likely herding would have to be resorted to.—W. E. V.

Wants a Good Brooder.

The hatching season is nearly upon us, my capons that I had expected would look after incubator chicks for me have most all turned out to be slips. Heretofore we have hatched and raised all chicks with hens. I must have something to brood my incubator chicks. Are the coal burning canopy top stove brooders reliable? What number could be successfully raised under one? What make would be best or what brooder would be best to get when one wants to raise from 500 to 1000 chickens. Will hot water or hot air incubators do well in Colorado? Please advise me what one will give best results and requires least care?—A. S., Pueblo county.

The colony brooders now being used for large numbers of chicks in one flock are a decided success; they are made to burn coal in some cases, in others, oil. We are not in a position to advise which to buy, but our experience has been that the coal burning stoves suit the conditions of our readers a little the best. We would suggest that you get the catalogs of a number of manufacturers before buying. You will find something suited to your conditions; these brooders will accomodate up to 500 chicks; while some advocate putting in more chicks, I would go slow on larger numbers than 500 until experience warranted my going in heavier. Both hot air and water incubators are successful.—W. E. V.

Have You Poultry and Eggs for Sale?

You can find buyers from among our 50,000 readers for all the poultry and eggs that you have to sell. If you will send in a little "ad" for the "Farmers and Stockmens Exchange." A little "ad" in this department will do the business. Try it.

Land Values In Yuma County.

Can you give me information to what land is worth or valued at within 20 miles north of Yuma county? Land which has no improvements of any kind. What is the average assessment on 160 acres? What is the name of the county assessor? If tax valuation is found to be too high could you see to it that it is reduced?—J. B., Illinois.

Unimproved lands in Yuma county are valued at $15 to $30 per acre, according to kind of soil and location. We can give you no information about the assessed average in that county and would refer you for that to Assessor John Dalrymple, Wray, Colorado. Land values have been advancing rapidly throughout eastern Colorado and considerable changes have been made in the assessed valuation in some of the counties. The matter of having valuations reduced will have to be taken up with county commissioners when they sit as a board of equalization.

Expert Mechanics Make BIG Money

Let us teach you Automobile and Tractor Engineering. Become an expert in the best paying and largest field of endeavor now open to ambitious young manhood. The world today is run by Autos, Tractors, and Gas Engines, and the demand for skilled help is far exceeding the supply.

You Can Qualify in a Few Weeks

We teach automobile, tractor, machine shop, acetylene welding, auto electric lighting and starting, tool-making, battery work and tire repairing. It will not take you long under our efficient system to master these divisions of our course—then you can go out and demand a high salary as a competent mechanic. Don't stay in the ranks with those who are endeavoring to get by with a smattering of "odd job" experience. It doesn't pay.

Complete Equipment for Your Tuition

Everything necessary to give you a full, practical knowledge of the Auto and Tractor business is provided in this school, and all departments are in charge of experienced instructors and men of the highest mechanical knowledge.

TEXT-BOOKS AND TOOLS FREE

We furnish all text-books and tools—and the only expense is your tuition and board which is very reasonable—and a few weeks' work after you have completed the course will pay all the expense and leave you equipped for life.

Write us Today for our BIG SPECIAL OFFER for March and April. Delay costs you money.

The Denver Auto & Tractor School, 3740 E. Colfax Ave.

DENVER, COLORADO.

S. C. W. Leghorns, Tom Barron's Imp. Pedigreed Stock Hatching Eggs---Day-old Chicks

450 OF OUR BRED-TO-LAY PULLETS LAID OVER $800.00 WORTH OF EGGS IN NOVEMBER AND DECEMBER. If you want layers, place your order at headquarters and make no mistake. Get the bred-to-lay kind. They make money for us and our customers; they will for you. Write for catalog, prices and facts, before you buy eggs or chicks. It's free; it tells all, write

FOWLER EGG FARM, Route I-B, Fowler, Colo.

Sick Baby Chicks?

There is only one way to deal with baby chicks and that is to keep them well. Doctoring a hundred or more chicks is mighty discouraging work.

It's pure carelessness to lose more than 10 per cent of chicks, from hatching to full growth. Many lose 40 per cent to 60 per cent, and even more. No profit in that.

Our book, "Care of Baby Chicks" (free) and a package of Germozone is the best chick insurance. WITH BABY CHICKS YOU MUST PREVENT SICKNESS—NOT ATTEMPT TO CURE. "I never had a sick chick all last season"—C. O. Petrain, Moline, Ill. "Not a case of white diarrhoea in three years"—Ralph Wurst, Erie, Pa. "Have 800 chicks now 5 weeks old and not a single case of bowel trouble"—Mrs. Wm. Christiana, Olive Ridge, New York. "Two weeks after we started last spring we were a mighty discouraged pair. Every day from three to six chicks dead. A neighbor put us next to Germozone and we are now sure if we had had it at the start we would not have lost a single chick"—Wm. E. Shepherd, Scranton, Pa.

GERMOZONE is a wonder worker for chicks, chickens, pigeons, cats, dogs, rabbits or other pet or domestic stock. It is preventive as well as curative, which is ten times better. It is used most extensively for roup, bowel trouble, snuffles, gleet, canker, swelled head, sore head, sores, wounds, loss of fur or feathers. 25c, 75c, $1.50 pkgs. at dealers or postpaid.

GEO. H. LEE CO., Dept. F-28 Omaha, Neb.

62 BREEDS PROFITABLE Pure-Bred Chickens, Geese, Ducks, Turkeys. Hardy Fowls, Eggs and Incubators at lowest prices. *Pioneer Poultry Farm.* Valuable poultry book and catalog FREE. F. A. NEUBERT, Box 381, Mankato, Minn.

Farmers' and Stockmens' Exchange

Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LEGHORNS

SINGLE COMB BROWN LEGHORN EGGS $8 per 100. Erle Smiley, Seward, Nebr.

SINGLE COMB WHITE LEGHORN EGGS $8 per 100. Erle Smiley, Seward, Nebr.

BUFF LEGHORN EGGS $ 8 PER 100. ERLE Smiley, Seward, Nebr.

S. C. WHITE LEGHORN EGGS; PUREBRED, $8 per 100. Mrs. Lawrence Ricklefs, Troy, Kan.

KYFFIN'S BUSINESS BUFFS—EGGBRED S C. Buff Leghorns. Mrs. J. W Kyffin, R. F. D. 2, Box 142B, Pueblo, Colo.

SINGLE COMB WHITE LEGHORNS, ENGLISH Barron strain, eggs, fifteen, $1; hundred, $5. Vivien Hind, Madison, Kansas.

ROSE COMB BROWN LEGHORN ROOSTERS $1.90; eggs 6½ cents each. State Winners. Rufus Standifierd, Reading, Kansas.

S. C. WHITE LEGHORN BABY CHICKS TO your door from Eggs-a-day-line; $20 hundred; also eggs S. Pelitier, Concordia, Kansas.

PURE SINGLE COMB BROWN LEGHORNS, bred to lay. Eggs $8, 100; $4.50, 50; $2 setting, prepaid. Chas. Bowlin, Olivet, Kansas.

BABY CHICKS. BOOKING ORDERS NOW Single Comb White Leghorns, selected stock, best laying strain. Gilbert Anderson, Norfolk, Nebr.

S. C. WHITE LEGHORNS—NOW IS THE TIME to place your order for hatching eggs. My hens are bred to lay, and do it. L. E. Larson, Fort Morgan, Colo.

DON'T DELAY. GET YOUR ORDER IN EARLY for your English Barron single comb white Leghorn eggs, for hatching. F. B. Morger, Fowler, Colo.

PUREBRED ROSE COMB BROWN LEGHORN eggs, $8 per hundred, pen $3 setting, baby chicks 20 cents. Prepaid. Mrs. H. Lee Smith, Route 2, Kanopolis, Kansas.

PUREBRED SINGLE COMB BROWN LEGHORNS, exclusively. Eggs $1.50 per setting. Incubator lots, 8 cents per egg prepaid. Jacob P Miller, Fowler, Colo.

FARMERS IF YOU WERE BETTER ACQUAINTed with the Buff Leghorn you would have more eggs. Baby chix and hatching eggs now ready. Champney, 2057 So. Broadway, Denver.

BABY CHIX—BUFF LEGHORNS MARCH 10TH, weekly hatches after this. Other breeds in any quantity. Book your orders early to avoid disappointment. Champney, 2057 So. Broadway, Denver.

SINGLE COMB BUFF LEGHORNS—SELECT heavy layers; vigorous range stock. From best breeders. Eggs, $4.00 per 50; $7.50 per 100. Mrs. J. Rose, So. Locust St., Grand Island, Neb.

QUALITY EGGS FOR HATCHING. ROSE COMB white Leghorns 100, $8. Large 5-pointed single comb brown, 100, $7. Fine winter laying strains. Oakgrove Poultry Farm, Dannebrog, Nebr.

S. C. WHITE LEGHORN COCKERELS $2.50 each, three for $6.75. Booking orders now for eggs for March and April delivery; $1.50 for 15, 8c each in lots of 30 or more. Wm. A. Draves, Lemoyne, Nebr.

S. C. WHITE LEGHORN EGGS FOR HATCHING high grade stock. Eggs per hundred, $10. A good hatch should result Mrs. James S. Gray, R. R. 3, box 147, Rocky Ford, Colo. Phone Ford 31 J 1.

SINGLE COMB WHITE L[illegible] OR hatching, $8 hundred, 'pre[illegible]in, closely culled;have free rang[illegible] winter layers; high fertility guaranteed. Ed. Wiemeyer, Harper, Kansas.

WINTERLAY—BARLOW'S WELL KNOWN strain, Hoganized Single Comb White Leghorns, standard. Bred to lay and do it. Flock of 160 laid 146 eggs January 17th. Eggs, chicks, catalog. Barlow & Sons, Kinsley, Kan.

SINGLE COMB WHITE LEGHORN HATCHING eggs (Young's Strain), from my Iowa and Nebraska State Show Champions. (Trapnested. My prirces are no higher than from common stock. Mating list. C. G. Gould, Alma, Neb.

BABY CHICKS—S. C. WHITE LEGHORNS, from Hogan tested, selected, early laying stock. All eggs from my own raising. Price for February and March setting 25c each, post prepaid. Cash with order. Please order early. Ivar Johnson, Fremont, Neb.

EXTRA GOOD SINGLE COMB WHITE LEGHORNS. Our flock is mated to produce results. Pure white heavy layers mated to sons of high record hens. (272 to 307 eggs per year at Oregon station). Eggs $7 per 100, setting, $1.50; order now. E. D. Allen, Route 1, Hastings, Nebr.

SINGLE COMB WHITE AND BROWN LEGHORN chicks, from hens that have an egg record of 240 to 265 a year, chicks 20c. Same breeding but not trap nested at 18c each. Orders filled in turn, my number is limited. Safe delivery and full count alive; order direct from this ad if you want to get some of these. Rose Hill Poultry Farm, Hudson, Kan.

RIVERSIDE POULTRY FARM SINGLE COMB White Leghorns. Heavy winter layers. Today, Jan. 1, we gathered 330 eggs from 450 pullets and 200 yearling hens. We have been breeding our Leghorns for 15 years to lay more eggs than common hens at all times, especially in winter when eggs are high. We breed from nothing but winter layers. Get Walker's strain and get winter layers. Baby chicks and hatching eggs for sale. Prices reasonable. Write for circular and price list. H. D. Walker & Sons, La Junta, Colo.

PLYMOUTH ROCKS

WHITE ROCK EGGS $8 PER 100. ERLE Smiley, Seward, Nebr.

CHOICE BUFF ROCKS—EGGS, 15, $2; DELIVered. J. W. Ragan, Medicine Lodge, Kansas.

BARRED PLYMOUTH ROCK EGGS, SETTING of 15, $1.50. Address John M. Mischke, Route 3, Loveland, Colo.

LIMING'S HEAVY WEIGHT WHITE ROCKS. Eggs $2 per 15. Quality Fruit & Poultry Farm, Manzanola, Colo.

BARRED ROCKS BRED FOR HEAVY EGG PRODuction, and exhibition quality. Cockerels, $7.50, $10 and $15. Ahlquist Bros., Box A, Florence, Nebr.

WHITE PLYMOUTH ROCK HATCHING EGGS and baby chicks from winter layers. A. W. Gingery, 1951 Geneva st., Aurora, Colo.

RINGLET BARRED ROCK EGGS AND DAY-OLD chicks. Write for prices. Mrs. C. N. Bailey, Lyndon, Kans.

PUREBRED BARRED ROCK COCKERELS, $3; winter laying strain. Eggs, 15 for $5. E. Plessinger, Cheyenne Wells, Colo.

BARRED ROCK EGGS FROM GOOD LAYING fowls. Open range. $1.50 for 15; $8.50 per 100. Mrs. Geo. Stewart, Aroya, Colo.

WINTER LAYERS! BARRED PLYMOUTH ROCK eggs, 15 for $1.50; 50 for $4.00. Mrs. Lon Edwards, 1039 Garfield Ave., Loveland, Colo.

WINTER LAYERS; BARRED PLYMOUTH Rock eggs for hatching; $2.00, 15; $7.00, 100. Mrs. J. Thompson, 1105 Garfield, Loveland, Colo.

WHITTON'S WHITE PLYMOUTH ROCKS, Grand Champion, Silver Cup winners. Eggs $2 setting. D. Whitton, 2121 Newton, Denver.

WHITE ROCK EGGS—GUARANTEED PURE, booking orders now; $2 per 15, $5, 50; $8, 100; cockerels, $4 each, three for $10. F. D. Webb, Sterling, Kansas.

BARRED ROCK EGGS FOR HATCHING, FROM pens, either light or dark, $3 for 15; from range flock, $6 for 100. Send for mating list. Chester Blunt, Route 1, Greeley, Colo.

LAYMORE BARRED ROCKS—Eggs $5.00 for 15. Baby chicks 50 cents each. Nebraska State Fair and Missouri first prize winners. First in Colorado in profit with over $70 each in 1918. Rhode Island baby chicks, $20.00 per 100. J. R. Anderson & Son, Ft. Morgan, Colo.

PURE BRED BARRED ROCKS. HEAVY EGG laying strain; eggs fifteen, $1.25; hundred, $6. Vivien Hind, Madison, Kansas.

S. C. RHODE ISLAND REDS; HEAVY LAYING strain. Eggs $2 per 15; $8 per 100. Mrs. Roy Hickson, Valley, Nebr.

EGGS—S. C. RHODE ISLAND REDS, STANDard bred, prize winning stock, $3 and $5 per setting. V. B. Newell, Stafford, Kansas.

FOR SALE—PURE BRED ROSE COMB RHODE Island Red cockerels, from blue ribbon stock, $4 each. Mrs. Ernest Hieber, Burns, Wyo.

EGGS IN BOTH COMBS FROM OUR STATE show winners; $3 per 15. Ask for mating list. Brumley Red Yards, Wellington, Kansas.

PETERSON'S HIGH CLASS SINGLE COMB Rhode Island Reds. Write for prices and hatching eggs. Three pens. Nels W. Peterson, Mason City, Nebr.

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

BARRED ROCK EGGS—HEAVY LAYERS; RED eyed; nicely barred, 15, $1; 50, $3. Select pen, dark mating, good value, 15, $2. Mrs. D. Ward, Ames, Kansas.

BUFF ROCK EGGS, FROM PRIZE WINNING stock, 100, $7; 50, $4; 200-egg Mandy Lee incubator, good as new, $25. Maggie Stevens, Humboldt, Kansas.

FINE CHICKENS AT THE TUCKER FARM. Rhode Island White, Rhode Island Reds. Baby chicks. Write me your wants; eggs in season. Mrs. Hattie M. Tucker, Pawnee, Okla.

LOWER'S POULTRY FARM, ARVADA, COLO. is the oldest and largest breeder of thoroughbred S. C. Rhode Island Reds in the West. Our stock is line bred, from selected heavy laying type for seventeen years. Eggs for hatching, $12 per 100, $5 for 30. Send for catalog and price list of stock and baby chicks.

"Your Magazine Sure Gets Results"

That's What One of Our Advertisers Says.

If you have stock or eggs to sell this spring, send in an advertisement of what you have to offer. You will find all the buyers you want from among our 50,000 readers.

Others have found this the best place to advertise, you will also if you will but give it a trial.

Read what some of our advertisers have to say:

Western Farm Life: It sure pays to advertise in Western Farm Life. I have sold out all surplus pullets.—Mrs. J. W. Kyffin, Pueblo, Colo.

Western Farm Life: Have had excellent results from my poultry ad with you.—Chester Blunt, Greeley, Colo.

Western Farm Life Run my ad in the next two issues. From this little ad I have sold poultry in several Western States and all over Colorado. Thanks to you.—F. L. Toliver, Fort Collins, Colo.

Western Farm Life: Your paper sure gets results. Will have another advertisement later.—Vivian Anderson.

Western Farm Life: Have sold all my cockerels, and the pulling power of Western Farm Life is much appreciated.—E. A. Miller, Alma, Neb.

Western Farm Life: It might be of interest to you to know that I have this season sold through your paper one $50.00 order and numerous smaller orders. I find your paper a good advertising medium.—Liston L. Hall, Gering, Nebraska.

We receive almost daily letters like the ones quoted above from breeders who are successfully using the classified advertising columns of Western Farm Life. Every one of our 50,000 subscribers is a prospective buyer of poultry and eggs this spring. Send in your advertisement today, so it will reach us in time for the next issue. Rate, 5c a word; four or more insertions, 4c a word each insertion. Address

WESTERN FARM LIFE
DENVER, COLORADO

EGGS FOR HATCHING—PUREBRED WHITE Plymouth Rocks, Fishel strain, world layers, also Golden Egg Tonic. Keep your hens healthy and laying. Satisfaction guaranteed. Mrs. W. F. Christman, Scottsville, Kans.

BLAKELAND EVERLAYERS, SINGLE COMB White Leghorns. The famous Tancred high-laying strain. Breeding birds, hatching eggs and baby chicks. Place orders now. Quality the best only. Satisfaction guaranteed. Blakeland Farm, Littleton, Colo.

FOR SALE—BEST WHITE ROCKS IN THE West. Seven mated pens; pullets and cockerels to offer; setting eggs, $3.00 and 5.00. Last January at Denver Stock Show we won First Cockerel, First Pullet, First Hen, and many other prizes. F. L. Toliver, Ft. Collins, Colo.

HILL'S BARRED ROX. MY BIRDS WON HIGHest honors this season at Omaha, St. Louis, Mo., and Nebr. State Shows. The only flock in the state which has raised and exhibited a blue ribbon winner at a Chicago show. A few extra choice cockerels at $10 each; eggs from 6 good pens, $10 per setting. None better; satisfaction guaranteed. O. R. Hill, North Loup, Nebr.

RHODE ISLAND REDS

S. C. RED COCKERELS CHEAP. U. G. Barnes, Norman, Neb.

ROSE COMB RED EGGS $8 PER 100. ERLE Smiley, Seward, Nebr.

ROSE COMB RED COCKERELS, $3 TO $4 each. Downie McGuire, Paradise Kansas.

PURERED BUFF ROCK EGGS, $3 PER 15; PER 30, $5. Barbara Clinkenbeard, Wetmore, Kan.

FINE S. C. R. I. RED COCKERELS, TESTED for fertility, $4 each. B. N. Wells, Rice, Kans.

S. C. RED COCKERELS FOR SALE, $3 EACH, or two for $5. Ed Grotenhuis, Crawford, Colo.

PUREBRED WHITE ROCK EGGS $2 PER 15; $7 per 100. Mrs. Elsie Holderness, Dillwyn, Kansas.

PUREBRED SINGLE COMBED, EGGS 15 FOR $1.50; 100 for $7. Edna Knisely, Talmage, Kans.

PARK'S 200 EGG STRAIN BARRED ROCKS. Utility eggs for hatch; 15, $2; 30, $3.75; 100, $8. Pedigreed 15, $2.50; 30, $4.50; 100, $10. Parcel post prepaid. R. B. Snell, Colby, Kansas.

HARRISON'S FAMOUS, "EXHIBITION EGG strains." single and Rose Comb Reds. Show-winning, non-setting, developed layers. "Red breeding bulletins," and mating lists on request. Robert Harrison, The Red Man, Lincoln, Nebr., Station C.

WYANDOTTES.

WHITE WYANDOTTE EGGS $8 PER 100. ERLE Smiley, Seward, Nebr.

PARTRIDGE WYANDOTTES—CHOICE STOCK and eggs. Fred Karre, Cotesfield, Neb.

GOLDEN LACED WYANDOTTE EGGS FOR hatching. Wm. Schreiner, Exeter, Nebr.

WHITE WYANDOTTE EGGS 15 FOR $1.50. Post paid; 100, $6. Angie Archer, Grenola, Kansas.

WHITE WYANDOTTE COCKERELS, PRIZE winning; 232 egg strain, $5. E. M. Downs, Route 1, Yuma, Colo.

COLUMBIAN WYANDOTTES, STOCK AND EGGS in season; also fancy pigeons. J. J. Pauls, Hillsboro, Kansas.

WHITE WYANDOTTES — HEAVY LAYING strain, eggs $2 per 15, $7 per 100, prepaid. H. M. Savery, Cedar, Kansas.

COLUMBIAN WYANDOTTE EGGS, FROM HIGH class, free range stock; 15 eggs $2. Orvel Sharits, Route 5, Newton, Kansas.

GET CLARY'S PRIZE WINNING STRAIN CHALK White Wyandottes. Cockerels, $3, $5, $7, $10. Satisfaction guaranteed. George Clary, Endicott, Neb.

WHITE WYANDOTTE EGGS—BOOKING ORders now for March and April delivery. $1.50 for 15; 8c each in lots of 30 or more. Wm. A. Draves, Lemoyne, Neb.

SILVER WYANDOTTES. HAVE A FINE GOOD cockerel left; eggs, yards Nos. 1 and 2; $5 for 15; No 3, $5 for 50. M. B. Caldwell, Broughton, Kansas.

SILVER WYANDOTTES; WON BLUE IN 8 State Shows. Cockerels, $3, $4, $5; eggs $3; two settings, $5, parcel post prepaid. Free mating list. Chas. David Flanders, Springhill, Kansas.

FOR SALE—25 VIGOROUS BLOCKY WYANdotte cockerels $5, $6, $7.50 each. Sired by first cock at National Western. Worth double or money back. Mating list ready now. George W. Dyer, Cedaredge, Colo.

ORPINGTONS.

BUFF ORPINGTON EGGS $8 PER 100. ERLE Smiley, Seward, Nebr.

PUREBRED BUFF ORPINGTON EGGS, $1.50 15; $7.50 100. Mrs. C. H. Headberg, Axtell, Nebr.

EGGS—BUFF ORPINGTONS. FROM VERY choice birds, 15, $2; 30, $3.50; 50, $5. Cora Charlton, Little River, Kansas.

HIGH CLASS BUFF ORPINGTON EGGS FOR hatching. Winter laying strain, $2.50 for setting of 15, $6 per 50, $10 per 100. Good hatch and satisfaction guaranteed. Mrs. J. W. Lee, Bridgeport, Neb.

EGGS—JAMIESON FULL-BLOOD, PRIZE-WINning S. C. Golden Buff Orpingtons eggs, $5, $4 and $2 per setting of 15 eggs; from range flock, the same blood, $15 per 100; all eggs shipped prepaid, fertility guaranteed. W. M. Jamieson, 127 S. Poplar St., Wichita, Kansas.

LANGSHANS.

BLACK LANGSHAN EGGS $8 PER 100. ERLE Smiley, Seward, Nebr.

PURE BLACK LANGSHANS. COCKERELS, $5, hens, $2.50; eggs, 15, $2; 100, $7. Mary McCaul, Elk City, Kansas.

BLACK LANGSHANS, SHOW WINNERS, EGG producers. Cockerels, $3 up. Eggs, $3 and $5 per 13. O. I. Moon, Ft. Morgan, Colo.

PRIZE WINNING BLACK LANGSHAN EGGS $2 setting. Winter laying strain; all first and second prizes County Fair. First prize Nebraska State Fair. R. Montgomery, Dennis, Kansas.

ANCONAS.

MY FLOCK OF ANCONAS WILL BE LOCATED for the coming season with F. A. Norton, 1926 So. Bannock St., Denver. Mrs. D. S. Davis, Littleton, Colo.

"SUNNYSIDE" EGGBRED S. C. ANCONAS. Winners and Layers, "Sunnyside" Anconas lay winter and summer. Baby chicks and hatching eggs from our very best layers. Exhibition pens eggs $5 per 15. Eggs from selected layers $2 per 15, $10 per hundred, baby chicks $25 per hundred; 100 per cent arrival guaranteed. Mrs. J. B. Shenk, Box L, Route 2, La Junta, Colo.

HAMBURG.

SILVER SPANGLED HAMBURG EGGS, CHICAgo, Kansas City, St. Louis, Denver, Lincoln, Wichita, Dallas, Oklahoma City winners, $3 per 15; $5 per 30. Roland Talbott, Waukomis, Okla.

GAMES.

GAMES—11 STRAINS. CATALOG FREE. N. F. Baty, Whitesboro, Tex.

TURKEYS.

PRIZE WINNING BRONZE TURKEYS—Denver trophy winners for five years. Toms, $15 up. Some good barred rock cockerels, $3.00. Eggs for hatching. Mrs. L. P. Stone, Lexington, Nebr.

TURKEY EGGS—MAMMOTH BRONZE, FROM 16 to 20 pound hens, 50c each, for April and May delivery. Booking orders now. Wm. A. Draves, Lemoyne, Neb.

PURE BOURBON RED TURKEY EGGS, $6 PER 12. White African Guinea eggs, 10 cents each. Single comb White Leghorn eggs, $6 per 100. All eggs postpaid and guaranteed. Vivian Anderson, Oswego, Kans.

SEVERAL VARIETIES

FINE BLACK MINORCA AND BUFF ORPINGton Eggs. Baby chicks. Frank A. Agnew, Southside, Omaha, Neb.

CHOICE WHITE ROCK COCKERELS, WHITE Guineas, Buff Orpington ducks. Mrs. Chas. Snyder, Effingham, Kansas.

BABY CHICKS—ORDER EARLY, GET CHICKS from the winter layers. Price list. Sarver Poultry Farms, Hastings, Nebr.

MODLIN'S POULTRY FARM, LARGEST IN THE West. Hatching eggs, free circular. Write today Thirty best varieties. Route 7, Topeka, Kansas.

CLAY COUNTY POULTRY AND PET STOCK ASsociation, 100 members. All breeds and varieties. Directory free. Sec'y. H. L. Boge, Harvard, Neb.

S. C. COCKERELS, HENS AND PULLETS; $5 each, mated trios $12. Bred from prize-winning stock. Eggs $1.50 for 15. A. W. Phipps, Evanston, Wyo.

EGGS FOR HATCHING—SILVER CAMPINES, $2; Buff Leghorns, $2; Blue Andalusians, $2; Single C. R. I. Reds, $2 for 15 eggs. John L. Miller, Arvada, Colo.

EGGS FROM SELECTED PENS; BUFF ORPINGtons, and Bradley Barred Rocks, $3 per 15; $5 per 30. Choice cockerels for sale. Archdale Farm, Fremont, Neb.

BUFF LEGHORNS, RHODE ISLAND REDS—best layers on earth. Headquarters for cockerels, baby chix; hatching eggs. Write us your wants. Champney, 2057 South Broadway, Denver.

COLUMBIA HATCHERY—WE CAN SUPPLY you with any quantity of Baby Chicks. We have 14 varieties including all leading breeds. Write for our prices, you will save money. P. O. Box 1102, Denver, Colo.

YOU BUY THE BEST CHICKS FOR THE LEAST money, from the Colwell Hatchery, Smith Center, Kansas. 150,000 to be shipped everywhere; 18 cents each, 500 for $89; guaranteed alive or replaced free.

BABY CHICKS THAT WILL LIVE AND THRIVE in this mountain territory. Eggs selected from the best Colorado flocks. Remember we have the only hatchery in Denver. Buy direct from us and save reshipping. Present capacity 30,000 eggs. Incubators and Brooders. Denver Incubator Co. and Hatchery, 173 South Broadway.

YOUNG'S 265 EGG WINTER LAYING STRAIN single comb white Leghorn eggs, 15, $1.50; $7 hundred. Money makers. Prize winning Partridge Wyandotte, Premier mahogany stain, eggs, 15, $2; hundred, $8. Hens cleared $4.27 each last year. E. N Montgomery, Dennis, Kansas.

BABY CHICKS—BARRED AND WHITE ROCKS, Reds, Buff Orpingtons, White Wyandottes, Anconas, White, Buff, Brown Leghorns, 18 cents. Single comb black Minorcas, Light Brahmas, 20 cents, prepaid. Live delivery guaranteed. Kansas Poultry Company, Norton, Kansas.

A TRUE AND TRIED NEVER FAIL ERADICATOR of white Diarrhea. Simple thing found in every kitchen. Send 25 cents for full information how to use it, to pay for postage and trouble. It means dollars saved and chick raising made a complete success. Address Box 15, Kit Carson, Colo.

ADDITIONAL CLASSIFIED ON NEXT PAGE.

SEVERAL VARIETIES.

BUFF ORPINGTONS AND SILVER SPANGLED Hamburgs. Orpington eggs $7 hundred, $1.25 setting. Hamburg $1.50 setting of 15 eggs. Leslie Christenson, Route A, Akron, Colo.

DON'T LOOSE ALL YOUR PROFITS ON YOUR chickens and turkeys, when a $ bill will get you the best home treatment for your fowls known, simple, but does the work Will save buying all those patent remedies at a high price. Satisfactory or money refunded. (Reference, First State Bank.) Rose Hill Poultry Farm, Hudson, Kan.

IMPROVE THE FARM POULTRY AS YOU DO your cattle and hogs. The farmer is beginning to realize that poultry, scientifically bred to egg production, improves the farm flock and increases his profits in these times of dollar eggs. Look ahead a year. You probably need new poultry blood this year and will buy a cock bird to furnish it, but for next year—buy Harr's baby chicks now. Your new blood will cost you nothing. For the price of one good cock I will sell you 100 baby chicks from heavy egg producing stock. Buy these chicks now and next fall you will have plenty of fine cockerels for your own use; also you will have several pullets and the money you can realize on your surplus cockerels will pay the entire expense feed and all. I can offer you ten breeds as follows: Rhode Island Reds, White Leghorns, Barred Plymouth Rocks, Black Minorcas, White Orpingtons, White Plymouth Rocks, White Wyandottes, Buff Orpingtons, Buff Plymouth Rocks, and Anconas. Even tho my flocks contain many prize winners, I can offer chicks at the following prices: Twenty-five chicks, $6.25; 50 chicks, $12; 100 chicks, $22; 500 chicks, $105; 1,000 chicks $200. Order direct from this ad. Full live delivery guaranteed by Parcel Post. I ship by Parcel Post, special delivery and will guarantee live delivery of every chick. Can make shipment within two weeks after receiving order. Send 25 per cent cash with order and balance few days before shipment. Dean Harr, Box G 502, Wichita, Kansas.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HOGS

FOR SALE—REGISTERED BIG TYPE DUROC-Jersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

FINE REGISTERED BERKSHIRE PIGS, FROM prize winning stock. Special rates to boys' clubs; for immediate delivery. D. S. Davis, 25 So. Grant, Denver.

FOR SALE—POLAND-CHINAS "BIG TYPE" bred gilts, spring boars, fall pigs; all registered. Write for information. F. L. Toliver Stock Farm, Ft. Collins, Colo.

STOCK HOGS WANTED—WE WANT TO BUY several hundred head of pigs and hogs weighing from 60 pounds up. Let us know what you have for sale. Write Duroc Farms, 412 Cooper Building, Denver, Colo.

REGISTERED BIG TYPE DUROC JERSEY boars and gilts, the kind that brings the money at the block. Fashionably and strongly bred by our herd boar, Orion Cherry King 15th, and out of Defender sows. We are sold out on anything up to July farrow. Money back if not satisfied. J. O. D. Ranch, Aroya, Colo.

I HAVE NOW FOR SALE THREE OF THE finest Registered Duroc Jersey Gilts you ever saw, farrowed last July. They were sired by the largest boar for his age, at the Pueblo State Fair, and they have produced some prize winners at the Pueblo and Denver fairs. There are only three of these left, so write quick. J. N. Caldwell, Willow Grange Farm, Littleton, Colo.

CATTLE

FOR YOUNG CALVES, WRITE TERWILLIGER, Livestock Exchange, 289 Lake St., Milwaukee, Wis.

REGISTERED HEREFORD BULLS — ABOUT thirty coming yearlings, two coming two-year-olds, and one 5-year-old bull, the sire of the others, and one of our herd bulls. All best Anxiety breeding, well marked, big boned, and not pampered with flesh to hide their defects. Priced to sell. J. O. D. Ranch, Aroya, Colo.

SHORTHORNS FOR SALE—TWO BULLS AND 1 cow. Silver Prince 528502, white, 4 years old, sure breeder, tracing to Imp. Rose of Sharon. Royal Zealous 833792, white; 11 months old, tracing to Imp Zealous. Roan Maid 132401, roan, 9 years old; will be fresh in June; tracing to Imp. Tilbert. Bull and cow, $200 each. Calf, $150.. Fred Van Deylen, Byron, Nebr.

HORSES.

FOR SALE—REGISTERED PERCHERON STALlion, 3 years old. Dan Knaus, Niwot, Colo.

TWO HIGH CLASS PERCHERON STUD COLTS, two and three years old; range broke, cheap. Choice Hampshire hogs, either sex. L. F. Newbold, Minden, Nebr.

FOR SALE—SIX REGISTERED PERCHERON stallions—one my herd sire, King Link, No. 88104, seven years old—and five of his colts As I wish to sell all my horses, I am making low prices. R. A. Chace, Ft. Morgan, Colo.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

TWO POUNDS TESTED SUGAR BEET SEED, postpaid. Starbird Bros., Meeker, Colo.

1,000 ONION SETS $1.00, PREPAID. CATAlogue free. Long Seed Co., Boulder, Colo.

BEST WHITE BLOSSOM SWEET CLOVER, VERY reasonable. John Lewis, Route 1, Madison, Kan.

RECLEANED CANE SEED, $4.15 PER HUNdred. Sacks furnished. Geo. W. Wheeler, Otis, Colo.

MINNESOTA NO. 13 SEED CORN—CERTIFIED and registered stocks. Catalogue free. Long Seed Co., Boulder, Colo.

WHITE SWEET CLOVER FANCY COLORADO hulled, scarified seed, 100 lbs. $32.00. Catalogue free. Long Seed Co., Boulder, Colo.

SUDAN GRASS SEED. HUNDRED POUNDS, $18. Sacks free. Is pure, Colorado grown stock; high germination. Long Seed Company, Boulder, Colorado.

GROW YOUR OWN SUGAR—GENUINE SUGAR beet seed, with instructions for making syrup and sugar, 4 ozs. 25c. Catalogue free. Long Seed Co., Boulder, Colo.

SEED CORN—AMERICA'S BEST QUALITY. 90 to 130 bushel kinds. Produces 2¼ pound ears. Must please or money back. Bushel, $4.00. Wiltse, Rulo, Nebr.

PRIZE WINNING SEED CORN.—IMPROVED Reid's yellow dent and Boone County White. And all kinds of farm seeds. Catalog free. Per... H. Lambert, Box L, Hiawatha, Kansas

FOR SALE—FANCY RECLEANED SUDAN; 100 lbs., $18; 50 lbs., $10; 25 lbs., $6 Hershea, 100 lbs., $4; 50 lbs., $2.50. Minnesota 13 corn shelled and graded, 100 lbs., $7; 50 lbs., $4. Quality guaranteed. F. O. B. Ft. Morgan; sacks free. Chas. Key, Sunny Slope Ranch, Adena, Colo.

STRAWBERRY PLANTS.

STRAWBERRY PLANTS—DAHLIA BULBS, 150 kinds. Write for prices, all kinds nursery stock. McMullen Nursery, Box 374, Council Bluffs, Ia.

NURSERY STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

DO YOU WANT A BARGAIN ON WELL-ROOTed and branched Cherry, Apple, Pear, Peach and Plum trees and berry plants? Ask for our free instructive and humorous catalog with prices lower than other first class nurseries. Manhattan Nursery, formerly Manhattan, Kans., now Topeka, Kans.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—IMPROVED 480 ACRE STOCK AND farm ranch. George Wortham, Neiber, Wyo.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wisconsin.

IDAHO LAKE REGION OPPORTUNITIES— Farms all sizes and prices for sale. Peter Johnson, Sandpoint, Idaho.

FOR SALE—AT A BARGAIN, A 320-ACRE stock ranch. For particulars inquire of owner. Box 525, Hotchkiss, Colo.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

FARM AND CATTLE RANCHES—CHOICE LIST. If interested call or write F. E. Wrockloff, Merchants Bank, Seventeenth and Curtis Streets, Denver, Colo.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description, location and cash price. James P. White, New Franklin, Mo.

FOR SALE—5 ACRES, ½ ACRE ASPARAGUS, alfalfa; 6-room brick; out buildings; $4,500; terms. Walking distance end Washington Park cars. Carl Schlumpf, 4601 E. Louisiana, Denver.

FOR SALE—RANCH OF 80 ACRES, IMPROVED, good water right; 300 head of good cattle, Whiteface and Shorthorn; good range. Located two miles from Hotchkiss, Colo. For further information, write John Head, Hotchkiss, Colo.

STOCKMEN ATTENTION—My beautiful modern 10-room home, completely furnished, is now offered for the first time. All in splendid condition, large roomy porches, high and sightly location, fine lawn, beautiful shade, large barn and garage for several cars, grounds 125x150 feet, sewer connections all in and all special improvement taxes paid. Will consider an exchange for good stock ranch of either the same or greater value and pay cash difference. This is the best residence in Littleton, Denver's best suburb. Owner, P. O. Box D, Littleton, Colo.

ATTENTION STOCKMEN.—WE HAVE TWO stock ranch bargains. Just what you are looking for; each ranch comprises 320 acres deeded land with substantial improvements, and large acreage under irrigation, and in alfalfa, timothy, clover hay, unlimited outside free range, with 4,000 acres of leased land under fence for fall pasture. These ranches are located three miles apart, 125 miles from Denver. Good shipping point, big money makers. Prices $12,000 and $13,600 on good terms. See us at once for these. Reynolds, Covey & Reynolds, 625 Exchange Bldg., Denver, Colo.

I WILL SELL OUR STOCK RANCH AT BAIleys, Colo., for less than its real value, 275 acres, of which about 100 acres are in hay meadow and cultivated bottom land; good 11-room house with completely equipped bathroom, Delco electric light system; also 3-room cottage; both houses completely furnished, lots of stock and haybarns and other outbuildings; old forest reserve rights; near new state auto road, Denver to Baileys; cuts plenty of hay; immediate possession, but don't want any trades. This place and range will run 250 head of cattle, and about 95 head go with the place; also work horses, harness, all kinds of farm machinery, household furniture, all hay in stacks and barns This is a bargain at $22,000. Ned Corbin, Baileys, Colo.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

WANTED—FARMER OR STOCKMAN OF WIDE acquaintance who can represent us in his vicinity and interest buyers in our choice southern Colorado irrigated farms. Liberal arrangement to right party who can spare part time. Write immediately for confidential agent's proposition. Address General Agents, 636 Symes Bldg., Denver, Colo.

WANTED EXPERIENCED FARMER AND STOCKman, must be a man of strong character and good education; a practical worker with a good record who can obtain results. Single man preferred. Permanent job and $100 per month and board to right man, with chance of additional income from cattle. Write fully. Address M. Friedman, Buckman, N. M.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

RED CEDAR SPLIT FENCE POSTS. GUARanteed full size and A-1 quality. You pay after unloading. Send for booklet and prices delivered your station. Kirk Company, Box 1138-S, Tacoma, Washington.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

TRIAL ORDER FRESH ROASTED RIO COFFEE, whole or ground, 3 pounds for $1, sent prepaid anywhere. Alvin Brauer, Beeville, Texas.

FOR SALE—OR TRADE FOR LAND, WALLIS Cub Tractor, with four-bottom plow, 12-ft. tandem disc and press drill. Write for more particulars. Gus Herfert, Julesburg, Colo.

ALFALFA MILL

COMBINED ALFALFA MILL AND ENSILAGE cutter in first class condition. Price new $550, will take $250 cash. Write or phone C. E. Stretcher, Aurora, Colo.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

TYPEWRITER

GOOD TYPEWRITER FOR SALE CHEAP—FREE trial, easy payments if wanted. Write Bertha Payne, Shawnee, Kansas.

TANNING

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

INVENTIONS

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long-distance, Main 7612. P. O. Box 1442.

The Third Try Wins.

To have a catastrophe overtake your enterprise twice and then, undismayed by failure, to try a third time, requires pluck of a rather unusual quality. It is the kind that Theodore Tholke, a club boy living in Douglas County, Nev., possesses.

Last spring this boy joined one of the poultry clubs under the supervision of the United States Department of Agriculture and the State colleges and purchased 300 baby chicks. Soon afterward an electric storm passed over his home and all but 19 of the chicks were killed. Theodore viewed the devastation the storm had wrought, straightened his shoulders and went out and bought 150 setting eggs. But luck was against him again. Scarcely had he got the eggs under hens before a waterspout caused the irrigation ditch to overflow. The resulting flood washed his eggs and nests away.

Many would have given up in despair at this point, but not Theodore. Still determined to raise chickens, he obtained more eggs and finally succeeded in raising 150 chicks. On these he made a net return of $142 and was awarded the State championship of Nevada.

Cleaning the Ditch.

I am under a free water right ditch. We have always cleaned the ditch in the spring, throwing the sand on the ditch bank. Last year we were notified by one of the land owners through whose land our ditch runs that we would have to haul the sand off of his place hereafter. What is the law in regard to this?—Subscriber, Colo.

I suppose that the owner of the land has a right to object if sand is thrown from the ditch onto his land, as you have no right to dump sand on another's land without his permission. Enough dirt to form the banks, of course, could not be objectionable. Then, too, something would depend upon the right of way for the ditch and the conditions of that right of way. —Hamlet J. Barry, 724 Equitable Bldg., Denver.

Livestock Field Notes.

Read the ad of A. F. Borgmann of Longmont, Colo., in this issue. He is taking orders now for spring pigs, and also has a fine March boar left. This boar was sired by a First Prize winner at the Iowa State Fair.

Choice Shorthorns will be on sale at Farnam, Neb., on April 14. These animals are from the finest Shorthorn families, and carry some of the best blood of the breed. Read the announcement in our Livestock department of this issue.

Through an error in the ad of P. K. Hudspeth of Pueblo the record of the six nearest dams of his herd bull, King Twisk Segis Pontiac, was given as 24.38

If You Haven't Time to Write That Ad

Don't let it worry you. We don't expect you to be a copy writer—we pay men to do that work. It's an easy matter to jot down the items you want to feature in your advertising and send them in to us, and

WESTERN FARM LIFE HAS A STAFF OF ADVERTISING EXPERTS ALWAYS AT YOUR SERVICE

That breeders' card or other advertising matter you are considering should be so written and arranged as to attract the maximum of attention from the buyer to your proposition.

SUPPOSE YOU LEAVE IT TO US

We are in the advertising business and it may be, have more time and experience to devote to laying out your publicity material than you have.

A note to our Breeders' Department setting forth briefly what you want to sell will be sufficient to bring results in your direction.

One Inch Breeders' Cards.....$4.50 per Month
Two Inch Breeders' Cards.....$8.50 per Month

SUPPOSE YOU WRITE US TODAY

Western Farm Life

1518 COURT PLACE
DENVER, COLO.

pounds butter, average for seven days. It should have read 34.38 pounds. Mr. Hudspeth's herd sire is one of the finest bulls in the state, and has one of the best records. Read his ad in this issue.

Lovers of the Registered Ayrshire breeding have a chance to buy some good cows and calves. Mr. A. D. Bashor of Boulder, Colo., has these advertised in this issue of Western Farm Life.

Mr. J. B. Benedict of Littleton, Colo., has some fine registered Durocs and also registered Milking Shorthorns for sale. If you are in the market for this kind of stuff, it will pay you to write Mr. Benedict. Read his announcement in this issue on one of our livestock pages.

In our Livestock department of this issue you will see the ad of the Sneffels Land & Cattle Co., of Ridgway, Colo. Mr. Sterling Rohlfs, the manager of the company, has some excellent Herefords for sale at the present time. They are of the best Fairfax breeding, and are fine outstanding individuals.

Samuel Ball of Wray, Colo., will enter 25 young bulls in the Combination Sale at Denver on April 8th. These bulls are of the best breeding, and will make herd sires of market toppers. They are of the range breeding, the Buffalo Grass herd being raised in the open for 35 years. Read the ad in this issue.

Mr. W. A. Dickens of Longmont, Colo., announces that he is going out of the horse business as his time is taken up with his Shorthorns. He is therefore offering his big Percheron Stallion at a sacrifice Read his ad in the Livestock department of this issue.

COL. H. C. JENNINGS.
Purebred Livestock
AUCTIONEER
Also conduct Sales of Real Estate.
534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

PERCHERON STALLION
Am offering my fine 6-year-old black stallion at a sacrifice; weight 1,900 Good head and disposition; in fact good all over. Sure foal getter. Have his colts to show.
Account of raising Shorthorn cattle, cannot raise horses.
W. A. DICKENS, LONGMONT, COLO.

FOR SALE.
Registered Duroc Jerseys Registered Milking Shorthorns
J B. Benedict, Littleton, Colo.

REGISTERED
JERSEY BULLS
I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding Priced right.
Come and inspect, or write me.
H. J. VAUGHN, KIRK, COLO.

BRED SOWS AND GILTS
We are offering a lot of choice Poland China Bred Sows and Gilts, all bred for March and April litters.
State Fair winning blood runs through our entire herd.
Write Us Your Wants.
THE DEMING RANCH,
Oswego, Kansas.

Forest Glen Shorthorns
We are offering some medium-priced cows and a few choice bulls at attractive prices.
Cornforth Live Stock Co.
ELBERT, COLO.

Regist'd Holstein Bull Calves
Two Ready for Light Service.
Well grown, nicely marked from high producing dams. Sire, Western Sir Colantha Ascalon, he by Western Ascalon Champion Boy, a son of Colorado's Greatest Dairy Cow, and half brother to Colorado's Greatest Dairy Heifer. Write us.
W. B. & E. M. DOWNS, Yuma, Colorado.

Registered Ayrshires
FOR SALE.
Two cows, and their calves. One cow is 4 years old; other is 8 years. Two calves 7 months old. Papers furnished. These Ayrshires purchased from the Colo. Agricultural College.
A. D. BASHOR. Rte. I, BOULDER, COLO.

H. C. DENNIS, Auctioneer
FORT MORGAN, COLORADO
Registered Shorthorn and Jersey Cattle
Real Estate Sales Conducted. I can sell your real estate if it can be sold.
Wire at my expense for dates.
Phone: Res. Morgan 155J; Office Morgan 15

Facts in BLACK & WHITE
Paid in milk for Purebred Holsteins
The Reveille, Bellingham, Wash., reports that the Pacific Condensary Co. sells highgrade Holsteins to the ranchers at cost, taking payment in milk.
The company needs more milk and by introducing Holsteins expects to make dairying a profitable industry, thus increasing the acreage in dairy farms as well as the milk output per average cow. Just another instance of the standing of Holsteins among business men.
Send for free Illustrated Booklets. They contain valuable information for any Dairyman.
THE HOLSTEIN-FRIESIAN ASS'N,
186 Hudson Street
BRATTLEBORO, VERMONT

Buffalo Grass Shorthorn Herd
Raised in the Open 35 Years.
Sired by the best bulls I could buy or breed.
I will offer in the Combination Sale at Denver on April 8th
25 YOUNG BULLS
that will sire Market Toppers and Champions.
Also have for sale nine calves, 9 to 11 months old, price $200, if taken soon. Sired by one of the best bred bulls in America.
Samuel Ball, Wray, Colo.

Verdun Fairfax, 547803.
FOR IMMEDIATE SALE.
Six young bulls of Fairfax breeding, $300 to $500 Also 2 choice herd bulls, and Fairfax Heifers in beginners herds. All stock disease free, and guaranteed.
Prompt Attention to Inquiries.
SNEFFELS LAND & CATTLE CO.
RIDGWAY, COLO.

MORE SHORTHORN MARKET TOPPERS
A load of Shorthorn steers marketed by C. Elliott, Lathrop, Mo., at Kansas City brought the top of the market for cattle of that weight for the week of Jan. 19-24. The average weight was 1,448 lbs., the price $14 50. Mr. Elliott fed these steers on land where Shorthorns have been grown for sixty-five years.
The top price, any weight, for the week was $15.50, paid for some 1,348 lb. Shorthorn steers shipped by J. J. Tangeny, Salem, Nebr.
It Pays to Grow Shorthorn Beef.
AMERICAN SHORTHORN BREEDERS' ASSOCIATION,
13 Dexter Park Ave., Chicago, Ill.

FOR SALE
Registered Holsteins
I am offering for sale a bull calf and a heifer calf. Also my herd sire —BRANCH HILL PONTIAC CORNUCOPIA.
This sire is a worthy member of the Pontiac family, and is the sire of the two calves I am offering.
(All have excellent A. R. O. backing.
PRICED RIGHT—WRITE ME.
CHAS. M. HILL
Box 15 Rouse, Colo.

Polled Herefords
Double Standard
Herd Headed by Polled Dude 2nd 11187, 612340
Beau Donald, P. Plato and March On Blood in the Herd
SMITH LIVESTOCK CO.
Chivington, Colo.

L. G. Davis Herefords
ANXIETY BRED
For Sale—3 cars of registered Anxiety Bred Open Heifers in lots to suit purchaser Can be seen at my Wynnewood ranch six miles from Denver.
WE HAVE A FEW HIGH CLASS YEARLING BULLS FOR SALE
L. G. DAVIS, Saratoga, Wyo.
Or Wellington Hotel, Denver

BLUE RIBBON HERD
Registered Duroc Hogs and Holstein Cattle
Our Duroc Herd has won over 1500 ribbons including 75 Championships.
Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.
Write us for prices on farmers' boars, bred sows and some great show prospects.
The Blue Ribbon Livestock Co.
C. F. Burke, Mgr. Pueblo, Colo.

Registered Hereford Cattle
BEAU ASTER
Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.
Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.
FULSCHER & KEPLER
Holyoke, Colo.

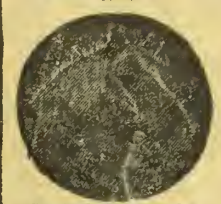
Registered Breeding Bulls and Heifers
HEREFORDS
SHORTHORNS
Young sctock of both sexes for sale at all times. Our sales yard is located within two blocks of The Denver Union Stock Yards. We are pleased to show our stock at all times.
THE LOWELL PUREBRED CATTLE CO.
Union Stock Yards, Denver.

PERCHERONS & BELGIANS
Purebred bay stallions and mares, 2 to 6 years old, weighing 1,800 to 2,150 lbs. The best that the world can produce. Every one has been a first or second prize winner at Denver.
JOS. ROUSSELLE & SONS
SEWARD, NEBR.

DALY'S DUROCS
This herd won Junior and Reserve Champion Sow at the recent Stock Show. Also 1st and 4th on Junior Sow Pig; 2nd on young herd, 2nd on get of sire, 3rd on Junior Boar.
Write Us Your Wants.
DR. F. T. DALY, Cambridge, Nebr.

REGISTERED
DUROC JERSEY HOGS
BRED GILTS FOR SALE.
R. C. VAN SCOY & SON
Highland Sta., Route 5. Denver
Phone Arvada 105-R-2.

HOLSTEIN BULL CALVES
We have for sale some mighty good ones with fine advanced registry backing. Prices from $150 to $500. Write us.
PAHGRE VALLEY RANCH
Montrose, Colo.

Glendale Stock Farm

Irvindale Rowdy Grand Champion Belgian Stallion Chicago, 1917, Denver, 1918 and 1919
Breeders of
BELGIAN HORSES and POLLED HEREFORD CATTLE
Young Stock Always for Sale
J. D. BRUNTON, Aspen, Colo.

Win-O-Dee Farm Holsteins
Herd Bull KING TWISK SEGIS PONTIAC 182200.
This sire's two nearest dams have a record of 35.38 lbs. butter from 733 lbs. milk in seven days. The average record of his six nearest dams is 34.38 lbs. butter in seven days. Young Stock of Both Sexes For Sale.
P. K. HUDSPETH, Pueblo, Colo.
Siloam Star Route.

FOR SALE
Registered Mammoth Jack
Four Years Old Last October
WEIGHT 1,000 POUNDS
No better in Northern Colorado. Best of papers.
For further particulars, write
WM. H. BALLINGER
Longmont, Colo.

MILK RECORDS
Do Not Replace Straight Bates Shorthorn Blood
FOR
Straight Bates Shorthorns are the "foundation source' of the Milking Shorthorns of England and America.
The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.
THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

William Upp
Breeder of
BIG TYPE POLAND CHINA HOGS—HERD HEADED BY BIG JUMBO, Missouri Prince, Cotton Wood King, and others.
Spring Boars and Gilts for sale.
Deer Trail - - Colorado

LA MARIPOSA
The Carr W. Pritchett Ranch, Steamboat Springs, Routt Co., Colo., has for sale at this time 12 fine bulls from 9 to 20 months old. Sired by LOYAL STAMP. Priced right. Great-grandsons of Whitehall Sultan.

AM TAKING ORDERS NOW FOR SPRING PIGS.
Also a good March Boar left—sired by First Prize Junior Yearling at Iowa State Fair.
AUGUST F. BORGMANN,
R. 1, Box 124, Longmont, Colo.

Second Annual Joint Spring Sale

OF REGISTERED BREEDING CATTLE

HEREFORDS SHORTHORNS

Under the auspices of and consigned by members of

The Western Hereford Breeders' Association
The Western Shorthorn Breeders' Association

Stock Show Stadium, Denver Union Stock Yards, April 7, 8, and 9

HEREFORDS

Will Sell on

Wednesday, April 7th

80 Bulls 70 Females

Will be Offered by the following members of the

Western Hereford Breeders' Association.

Dr. T. F. DeWitt, Denver.
C. H. Gilbertson, Ft. Morgan.
Hereford Corp. of Wyoming.
Flowerland Cattle Co., Denver.
L. G. Davis, Denver.
Geo. W. Baker, Littleton.
H. Bert Cave, Littleton.
S. L. W. Ranch Co., Kersey.
Fulscher & Kepler, Holyoke.
J. H. Dickens, Walden.
J. D. Canary, Denver.
A. J. Campion, Denver.
John E. Painter & Sons, Roggen.
T. F. Dolan & Son, Brighton, Colo.

SHORTHORNS

Will Sell on

Thursday, April 8th

40 Bulls 20 Females

Will be offered by the following members of the

Western Shorthorn Breeders' Association.

Allen Cattle Co., Colorado Springs.
Cornforth Live Stock Co., Elbert.
Charles Plageman, Eckley.
Gleason & Blazer, Kiowa.
J. Paul Jones, Elbert.
J. E. Rothrock & Sons, Lafayette.
C. A. Melburn, Elbert.
Stewart & Shaw, Wiggins.
Wm. C. Weiss, Elizabeth.
C. A. Hauf & Sons, Glendo, Wyo.
D. Warnock & Sons, Loveland.
Jay & Allen, Boulder.
Bonvue Stock Farm, Denver.

Several of these breeders are making a specialty of the big boned, large frame cattle so popular among western range breeders, and this sale will present opportunity to get many of this class of breeding animals.

These cattle come from the best breeding herds in the west. They not only have the best of blood lines, but they are excellent individuals. They are in good breeding condition, and ready for immediate service. Remember the dates, and place.

For Catalogs apply to R. R. Boyce, Sale Secretary, Denver Union Stock Yards, Denver, Colo.

S L W

HARDY HEREFORDS

Stand the Test. Do Well Anywhere.

At the Denver Sale, April 7th, we will sell ten head of select, hardy young bulls, seven sired by **WILBUR MISCHIEF**, one by **PRINCE RUPERT 35th**, one by **BEAU BALTIMORE 6th.** All richly bred.

Several Outstanding Herd Bull Prospects.

The S. L. W. Ranch Co.

H. E. WITWER, Pres. J. A. MILHAM, Herdsman

Postoffice Kersey, Colo.

Phone Greeley, Colo.

YOU SAW WHAT WE DID

At the National Western Stock Show. We can sell you Cows, Bulls and Heifers.
Let us know what you want.

STILL A FEW DUROCS FOR SALE.

A. M. McCLENAHAN, GREELEY, COLO.

Edbrooke Durocs

REGISTERED

Big Type Duroc Jersey Hogs

Defender Boars *Defender Sows*

DENVER SHOW, 1920 I WON
First Prize Junior Yearling Sow
Second Prize Senior Yearling Sow
The Only Classes Shown

GREEN ACRE FARM

Defender Breeding H. W. J. Edbrooke, Prop. 6th & Wadsworth, Denver

---

The Hereford Corporation of Wyoming
Box 876, Cheyenne, Wyoming

Registered Herefords

We Offer For Sale

3 Loads Coming 2-Year-Old Bulls
2 Loads Coming 2-Year-Old Heifers

And can also take care of any breeder who wants a few good bred heifers and cows.

Denver office

406 Live Stock Exchange Bldg.

RAYMOND S. HUSTED, Mgr.

DeWITT HEREFORDS

HERD BULL—MISCHIEVOUS JR., by THE HEIR

Is a full sister to BEAU MISCHIEF and is the dam of PRINCE IMPERIAL. A very few high-class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
JOHNSTOWN, COLO.

JAMES PONTIAC DEKOL ORMSBY

Advocate's Model, head of D. Warnock & Sons herd.

Public Sale 60 Registered Shorthorn Cattle

(Fashionable Scotch Breeding Predominates) From the Herds of

D. Warnock & Sons, Loveland, and Jay & Allan, Boulder, Colo.,

FRIDAY, APRIL 9, 1920, 1 p. m.

at DENVER, COLO., in the National Western Stock Show Pavilion.

1 OUTSTANDING ROAN BULL, by Advocate's Model.

59 FEMALES SEVERAL COWS WITH CALF AT SIDE — Bred Cows and Heifers—and Young Open Heifers.

Broadhooks Dale, head of Jay & Allan herd.

Study these few pedigrees of the many equally good ones in the offering:

Direct Daughters of these famous sires are in the offering:

Advocate's Model
Model Type
Imp. Villager
Selection
Fond Memory
Cumberland Marshall
Regal Stamp
Bruce Royal
Victor Sultan
Pride's Albino

Grandsires Represented:

Avondale
Whitehall Sultan
Choice Goods
Young Abbotsburn
Parkdale Baron
Diamond Goods

Herd Bull. **ADVOCATE'S MODEL 647679.**
White. Calved April 17, 1916. Bred by Geo. Watson, Aberdeenshire, Scotland. Owned by Warnock & Sons.

Dams.	Breeders.	Sires.	Breeders.
		Lord Advocate 577175	A. T. Gordon
Flora	A. Davidson	Decimus 333165	G. S. Grant
Snowdrop 5th	A. Davidson	Arundel 333157	G. Shepherd

HILLCREST VILLAGE 507754.
Roan. Calved Jan. 23, 1916. Bred by Uppermill Farm, Wappello, Iowa. Owned by Warnock & Sons.

Dams.	Breeders.	Sires.	Breeders.
Gold Crown 3d 203210	Uppermill Farm	Villger 295884	C. H. Jolliffe
Golden Crown 2d 59509	D. Clark & Son	Sultan's Last 363468	F. W. Harding
		Mina's Beau 363468	R. & V. Watt

A Marr Stamford.

Cow. **MODEL BEAUTY 2D—859650.**
White. Calved Jan. 14, 1919. Bred and owned by D. Warnock & Sons, Loveland, Colo.

Dams.	Breeders.	Sires.	Breeders.
Model Beauty 493244	Bellows Bros.	Model Type 446848	C. A. Saunders
		P'kdale Baron 410363	Bellows Bros.
Choice Beauty 7th 164487	Bellows Bros.	Diam. Abbott 363112	Bellows Bros.

A Marr Beauty.

Cow. **IMP. NONPAREIL 50TH 711980.**
Red. Calved Nov. 24, 1917. Bred by Harry Forbes, Aberdeenshire, Scotland. Owned by D. Warnock & Sons, Loveland, Colo.

Dams.	Breeders.	Sires.	Breeders.
Nonpareil 49th 711979	Alex. Campbell	Collynie Boy 611845	Wm. Duthie.
		Pr. of Waterloo 607443	G.P. Hay
Nonpareil 36th 711978	Alex. Campbell	Diretor 139622	W. Murray

A Campbell Nonpareil.

Cow. **PRIDES VENUS 603672.**
Red. Calved Dec., 1916. Bred by Jackson & White. Owned by Jay & Allen, Boulder, Colo.

Dams.	Breeders.	Sires.	Breeders.
Anoka Venus 193223	Anoka Farms	Prides Albino 442216	F. E. Jackson
		Fond Memory 320270	F. W. Harding
Sultan's Venus	F. W. Harding	Whiteh.Sultan 163573	J. D. Willis

A Cruickshank Acanthus. Will have calf at side by sale day by a son of Imp. Villager.

Herd Bull. **BROADHOOK'S DALE 628776.**
Roan. Calved Sept. 22, 1917. Owned by Jay & Allen, Boulder, Colo.

Dams.	Breeders.	Sires.	Breeders.
		Maxwalton St'p 367544	Carpenter & R.
Maxwalton Lucy	Carp'ter & Ross	Avondale 245144	E. S. Kelley
Imp. Lucy	C. H. Jolliffe	Cedar's Pride 228996	L. Broadbent

A Cruickshank Broadhooks foundation.

Cow. **MISSIE SULTANA 4TH 676762.**
Roan. Calved Jan. 7th, 1918. Bred by Anoka Farms. Owned by Jay & Allen, Boulder, Colo.

Dams.	Breeders.	Sires.	Breeders.
		Regal Stamp 396730	Anoka Farms
Missie Sultana 2d	Anoka Farms	Whiteh.Sultan 163573	J.D. Willis
Missie of Brown-dale 12th	Br'dale Farm	Y'g Nominee 168433	Browndale F'm

A Marr bred Missie with white bull calf at side by Village Perfection. Rebred to Broadhooks Dale.

Cow. **ANOKA VENUS 193223.**
Roan. Calved Nov. 1, 1913. Bred by Anoka Farms. Owned by Jay & Allen, Boulder, Colo.

Dams.	Breeders.	Sires.	Breeders.
Sultan's Venus 86629	F. W. Harding	Fond Memory 320270	F. W. Harding
		Whiteh.Sultan 163573	J. D. Willis
Golden Venus 5th	F. W. Ayers	Royal Robin 165629	W. S. Marr

A Cruickshank Acanthus with roan bull calf at side by a son of Imp. Villager, and rebred to Broadhooks Dale.

Cow. **GOLDEN GIRL 10TH 467973.**
White. Calved Feb. 1, 1915. Bred by J. W. McDermott. Owned by Jay & Allan, Boulder, Colo.

Dams.	Breeders.	Sires.	Breeders.
		Cumberland Marshall 412384	Elmdorf Farm
Golden Choice	Tebo L. & C. Co.	Ch. Goods 186802	J. Durno
Golden Abbottsburn	T. S. Moberly	Y'g Ab'tsburn 110679	J. S.W. B. Watt

A Campbell Golden Drop in calf to Imp. Orangeman. Carries more Grand Champion blood than any cow offered for sale this year. (Has produced three good calves.

Cow. **COUNTESS VICTORIA 7TH 96660.**
Roan. Calved May 27, 1909. Bred by Geo. Allen, Lexington, Nebr., and owned by Jay & Allan, Boulder, Colo.

Dams.	Breeders.	Sires.	Breeders.
Countess Victoria V66-529	G. Allen	Victor Sultan 296335	F. W. Harding
		Godwin 115676	Harris & Son
Victoria Countess	John Dryden	Collynie Arch. 149948	Wm. Duthie

A Cruickshank Victoria. Roan B. C. at side by Second Thought.

Scotch Families Represented:

Marr-Missie
Marr-Stamford
Marr-Beauty
Cruickshank-Butterfly
Cruickshank-Acanthus
Cruickshank-Victoria
Cruickshank-Sorrel
Cruickshank-Columbine
Cruickshank-Orange Blossom
Cruickshank-Secret
Campbell-Nonpareil
Campbell-Goldendrop
Campbell-Cecelia
Campbell-Bloom

WRITE FOR CATALOGUE NOW (MENTION THIS PAPER).. ADDRESS EITHER

DAVID WARNOCK & SONS, Loveland, Colo., or JAY & ALLAN, Boulder, Colo.

FOLLOW THE BEST SALE CIRCUIT IN COLORADO THIS YEAR.

APRIL 6—Zang's Percheron Mare Sale, Broomfield, Colo.
APRIL 7—Western Hereford Breeders' Association, Denver.
APRIL 8—Western Shorthorn Breeders' Association, Denver.
APRIL 9—Warnock & Sons—Jay & Allan Sale at Denver.

Sale of Choice Shorthorn Cattle At Farnam, Neb., April 14, '20

1 O'CLOCK P. M.

24--Bulls--24 28-Females-28

Are you a breeder of registered Shorthorns?

We have herd headers of the most select breeding and individuality.

Are you a ranchman?

We have Ranch bulls in ages from 18 to 30 months.

Are you a farmer?

We have younger bulls that are serviceable with a small herd.

They are sons of Diamond Digger 363110, Roan Radium, 596533, Easter Sultan 420163, Village Mascot 485203.

2 Open Heifers.

10 Cows with Calves at Foot.

16 Heifers and Young Cows Carrying Calf.

All in service to our herd bulls:

VILLAGE MASCOT 485203—A roan son of Augustine by Imp. Villager out of a dam by Double Dale.

ROAN RADIUM 596533.—A roan son of Radium by Double Dale, out of a dam by Scottish Hero.

EASTER SULTAN.—A roan son of Avondale's Sultan, by Avondale's Best, and out of a dam by Royal Goods.

Our sale cattle are from such Scotch Tribes as the Clara, Maude, Secret, Village Girl and Gwendoline. There are other popular American tribes such as Young Mary, Duchess of Sutherland, Alice Maud, Crocus and Mrs. Motte.

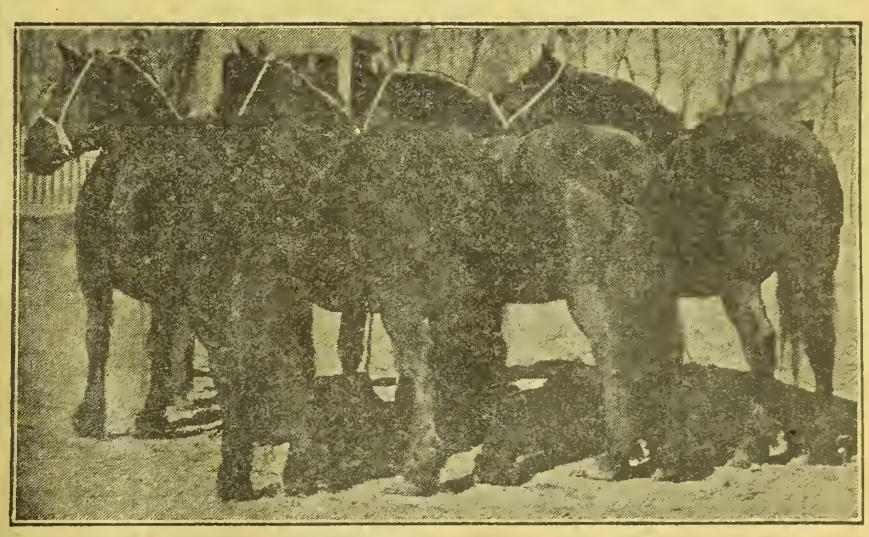
Write for Catalog to

E. W. CROSSGROVE & SONS FARNAM, NEB.

GODFREY & GODFREY COZAD, NEB.

Farnam is on branch of Burlington—Holdredge to Sterling Union Pacific trains will be met at Gothenburg, Neb., April 13th. Highline Shorthorn Breeders' Association sale at Farnam.

ZANG'S ELMWOOD STOCK FARM



Four Mature Daughters of Champagne 51743 (65492) Due to foal to Negro 131780 (113149). Weight over 4 Tons. Will Sell April 6, 1920.

Percheron Mare Sale

44 MARES **6 STALLIONS**

BROOMFIELD, COLO.

(14 miles north of Denver. Hourly car service).

April 6th, 1920

RAIN OR SHINE!

COLORADO'S OLDEST AND LARGEST BREEDERS OF PERCHERONS

Two International Champions at Head of Stud

Senior: Champagne No. 51743 (65402); Junior: Negro No. 131780 (113149).

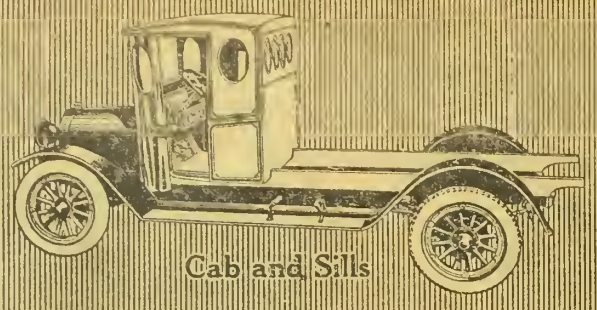
MARES THAT WERE WINNERS AT CHICAGO INTERNATIONAL, KANSAS CITY ROYAL, SAN FRANCISCO WORLD'S FAIR, NATIONAL WESTERN, DENVER, WILL SELL.

OUR HERD IS NOTED FOR ITS BONE, QUALITY AND SOUNDNESS.

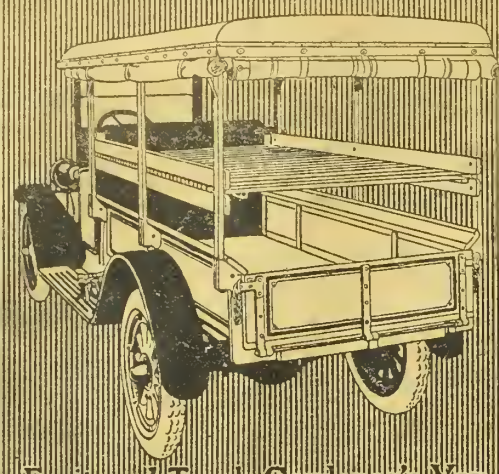
Send for Catalogue "U."

Zang's Elmwood Stock Farm, Broomfield, Colo.

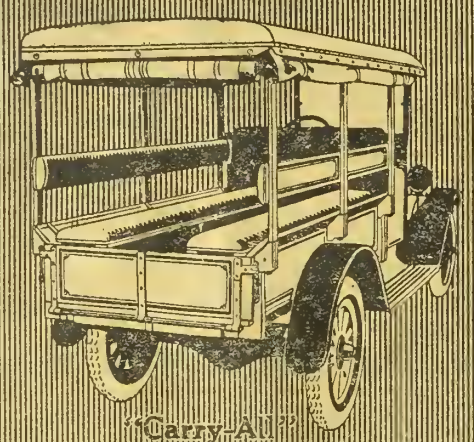
N. G. Kraschel and Assistants, Auctioneers.



Cab and Sills

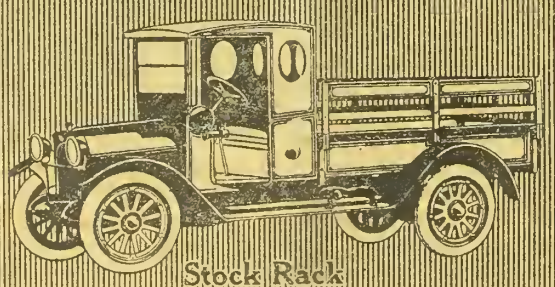


Fruit and Truck Gardener's Van

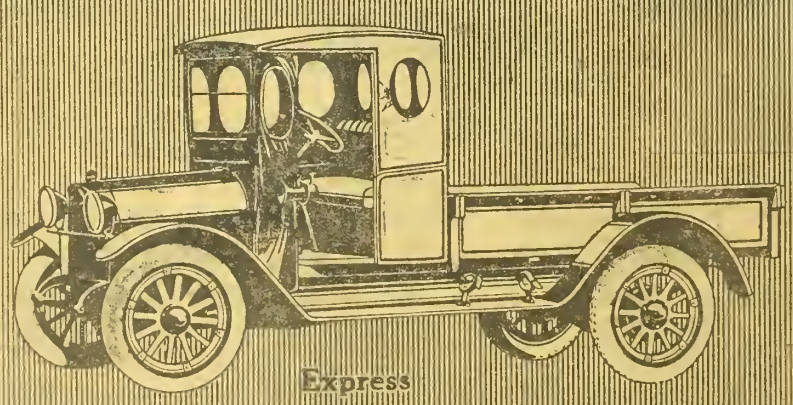


"Carry-All"

"Grain-Tight" Box



Stock Rack



Express

REO

Figure This for Yourself

How much more would it have meant to you in the past if you had been able to deliver your crops, your garden truck, your dairy produce or your live stock—hogs, cattle, sheep—to market in time to take advantage of the highest quotations?

Figure back—you'd have been a very rich man by now.

Add to that what you would have realized from a greater acreage seeded each year, and crops harvested in prime condition so as to command the highest prices.

This extra efficiency—this extra profit—is now possible to the Country Business Man.

A Reo "Speed-Wagon"—on pneumatic tires—will enable you to rush your produce to market within a few hours after you have gotten the top quotations—and to deliver the most perishable fruits or live stock in prime condition and with the minimum of depreciation in weight and value.

Free yourself from a non-competitive, small-town market!

The "Speed-Wagon" brings several markets within reach and stimulates competitive bidding.

No matter what your specialty or the nature of your produce, you can have a body that exactly suits your needs, by mounting on the basic body below any of the attachments shown at left. The adaptability of this "Speed-Wagon" is almost limitless.

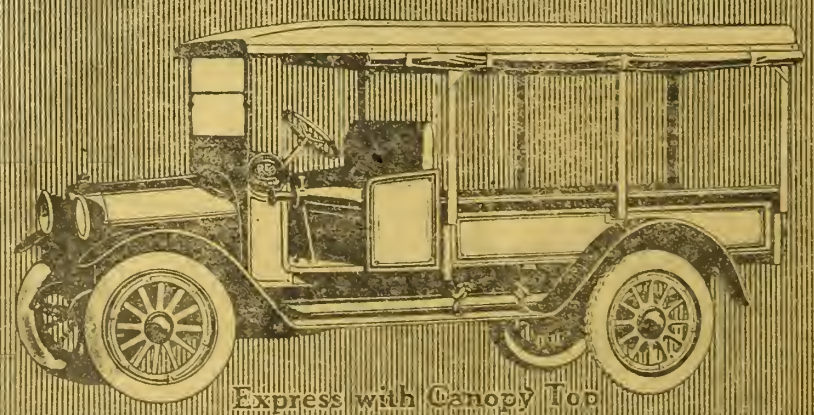
Two standard types are shown at bottom—the standard basic (express) body and the canopy express—and you can buy from your Reo dealer any or all of the attachments for a few dollars extra—either at time of buying the "Speed-Wagon" or any time thereafter.

Electric starter and lights are standard equipment.

There is a Reo Dealer in your vicinity
If You Don't Happen to Know Him
Write the Factory for Illustrated Catalog

Reo Motor Car Company, Lansing, Mich.

"SPEED WAGON"



Express with Canopy Top

"THE GOLD STANDARD OF VALUES"

$4.03
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WESTERN Farm Life

Vol. XXII. *Denver, Colorado, April 1, 1920.* *Semi-Monthly*

DIVERSIFIED LIVESTOCK BRINGS BIG RETURNS IN CASH AND FERTILIZER.

The MOLINE Tractor is Universal

6 Indispensable Results

No duplication by horses	*Because*	Does all field work, including cultivating, harvesting and belt work
A large saving in labor	*Because*	One man completely operates both tractor and all implements
Great ease of operation	*Because*	A single seat in the center of all controls of tractor and implement
Can back and turn short	*Because*	A single unit of operation—the tractor and implements form but one unit
Better and faster work	*Because*	Operator sees all his work—"Foresight is better than hind sight"
Power used as horses are used	*Because*	Tractive power in front of the work with operator behind the work

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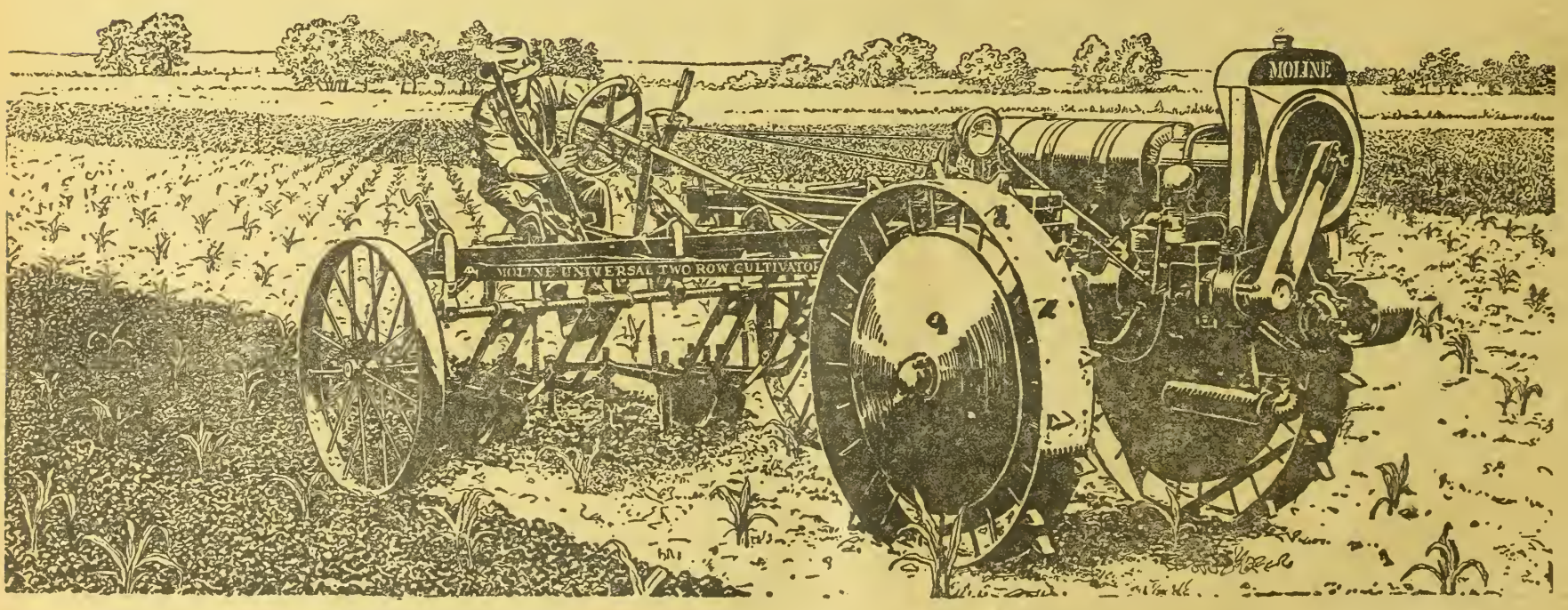

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Johnstown Again Shows How Dairy Farming Pays

REMARKABLE RECORDS BROUGHT OUT AT THE ANNUAL EXHIBITION

H. A. LINDGREN.

DAIRY day at Johnstown, Colo., is an event of more than local importance. The locality, an irrigated district lying on both sides of the line between Weld and Larimer counties, had nothing to distinguish it from other well developed farming districts until a condensery was established there seven or eight years ago. This brought dairy cows upon the high-priced land—something that many farmers said would not pay Experience proved this opinion wrong and today the Johnstown district is famous throughout the west, wherever dairy farming is talked of or carried on.

Many sections have their particular industry which brings fame to the community and arouses the curiosity of outsiders who want to know what is being done and how. It is Johnstown's way of acquainting visitors with their specialty to hold an annual dairy show. But the show does more than advertise the fact that good herds are the rule in the district; it keeps alive keen competition between breeders and dairy farmers and makes for constant improvement in herds and records.

The 1920 dairy show was held on March 11 and 12. The first day was spent largely in preparation. In the evening the farmers gathered at the Johnstown theater to hear Prof. G. E. Morton of the Colorado Agricultural College and Elmore Peterson of the Greeley Chamber of Commerce. Both spoke on the subject of community building. Mr. Peterson's talk was along the line of improving conditions in the rural community. He brought out the fact that a successful enterprise must be built on a firm foundation. High ideals should be the guiding thought in this. He mentioned education as one of the very important steps in community life; not alone a school education but such as can be obtained by an exchange of ideas. The third point of his address was on the matter of cooperation in building a community.

Prof. Morton's talk was along the same line as that of Mr. Peterson's. He brought out many personal problems that farmers are called upon to meet. He told of the importance of rearing a family under farm conditions rather than in the city and how the boy on the farm had a much better opportunity to think out problems while he was doing farm work, than the boy in the city who was constantly thinking of amusements. He mentioned the fact that the large part of the really worth while students at the colleges came from the farm, where they have an opportunity to develop into deeper thinkers. Both of these addresses were appreciated. The dairy cattle were brought in for display on March 12. Early in the morning they began to arrive at the tent where the show was held. The day was sunny and warm, which added greatly to the comfort of the animals and the people attending the show.

When all the stock was in one could not help but be impressed with the wonderful quality shown. Everything was well fitted. Though fewer animals were shown than at the last National Western Dairy Show, many of the classes were equally as strong. One of the especially strong classes was the Holstein aged cow class in which there were 10 animals shown. Every cow in the class was a picture and a credit to the breed. The interesting fact in connection with this showing was that the winner was the great cow owned by J. W. Whowell & Son. This cow Beauty De Kol Beauty 4th, was the year's high cow in the Johnstown testing association. She produced in 12 months 22,863 pounds of milk, 777 pounds of butterfat, or 975 pounds of butter. Her profit over cost of feed was $366.94. She is of excellent dairy conformation and is well worth her winnings. She was also grand champion cow of the show.

The grand champion bull was Goodro Johanna Fayne owned by Lohry & Wailes of Milliken. This bull was first junior yearling bull at the recent National Western. One of the things that has done so much to develop the dairy industry in the Johnstown section is the testing association. The dairymen have been disposing of their unprofitable cows and are, as a result, building up herds that are swelling the profits in the business.

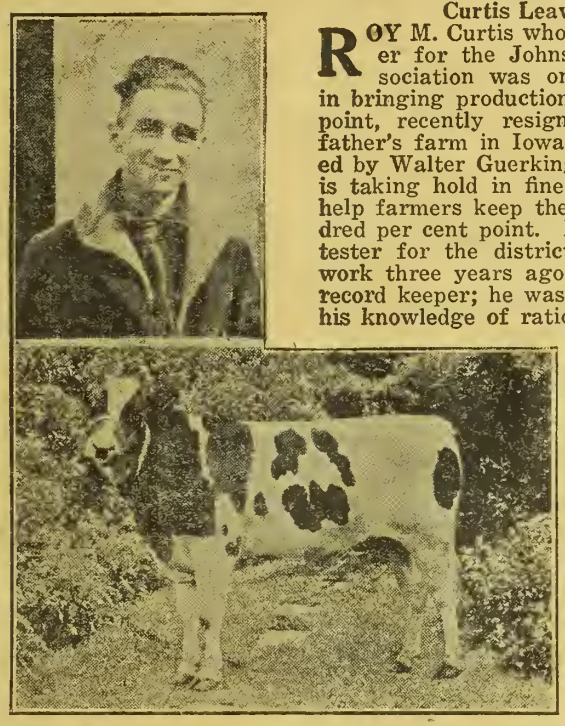
During February 1920, the high cow in the association was a registered Holstein, Rocabie J. Clyde. In the short month she produced 1,900 pounds of milk and 120 pounds of butterfat. She is owned by W. A. Purvis of Johnstown. Records such as that as a goal in production is something to work to.

The Guernseys shown were exceptionally fine. It is a question whether a finer lot were ever brought together in Colorado. There were two exhibitors of this herd, Bender & Sons of Johnstown and John Purvis of Berthoud. The herds shown contained large growthy animals which showed indication of good production.

That cow testing associations pay was evidenced last month in this section by the fact that cows sold brought exceptionally high averages in sales. Charles Ewing disposed of the grade cows in his herd, some twenty in number, for an average price of $178 per head. Another sale, that of A. R. Dohner, averaged $170 per head. A buyer of dairy cattle is always safe in buying the cows that have been tested for a year or more, as he knows what they will produce after he has examined the records. The last month the Johnstown association tested 375 cows. Roy Curtis was the tester for the past three years. He has recently resigned to go to Iowa, where he will take charge of his father's farm. Mr. Curtis was a student of feeding methods and assisted the members of the association greatly in working out the best rations for the particular cows in the herds. That is one of the really strong features of the testing association work. The new tester is Walter Guerking, who is making good right from the start.

There are many sections in Colorado where associations of this nature should be formed. The old idea that one can tell what a cow will produce by looking at her has been proven false. Even the man who milks a cow for years may be entirely misled as to what she is actually bringing in dollars and

(Turn to Page 37.)



Upper View: Roy M. Curtis.

Lower: Goodro Johanna Fayne, owned by Lohry & Wailes, grand champion bull at Johnstown and first in the junior yearling class at the National Western.

Curtis Leaves Johnstown.

ROY M. Curtis whose efficient work as tester for the Johnstown Cow Testing Association was one of the great factors in bringing production up to its present high point, recently resigned to go back on his father's farm in Iowa. He has been succeeded by Walter Guerking of Baldwin, Wis., who is taking hold in fine shape and promises to help farmers keep their herds up to the hundred per cent point. Mr. Curtis was the first tester for the district, having taken up the work three years ago. He was more than a record keeper; he was a first class feeder and his knowledge of rations and his aptitude for handling individual cows according to their productive capacity turned operations on more than one farm from a loss or an even break to a profit. He constantly urged improvement in quality and the farmers had confidence in his suggestions, because they saw results when they followed them. It is due directly to Mr. Curtis' advice that several of the outstanding individuals are now found in the Johnstown district and that its fame has spread not only from the production standpoint but also as a center for show cattle and breeding stock. The farmers sincerely regretted his departure and their best wishes follow him to his new field of labor. The Johnstown Cow Testing Association has been a remarkable demonstration of the fact that it pays the dairy farmer to work by the scale.

Twenty-four herds are enrolled in the association, the breeds represented being Holstein, Guernsey and Jersey. There is strong competition between owners of high producing cows for the annual production record, the results always being announced at the show. This year's high cow, as will be noted from the accompanying article, gave her owner a profit above cost of feed of $366. The Johnstown farmers have found that it pays to keep records and they will continue the testing work indefinitely.

1. Rocabic, a Holstein owned by W. A. Purvis. She produced 1,900 pounds of milk and 120 pounds or fat during February.

2. Don Purvis and his Guernsey heifer at the Johnstown show.

3. Guernsey bull shown by John Purvis, winner in the Aged Class.

Dr. Chilcott Is Wrong on Subject of Plowing

GOVERNMENT DRY FARMING EXPERT SPREADS UNSOUND DOCTRINE

E. R. PARSONS.

THE following paragraphs from the Journal of Agricultural Research are being widely quoted in the agricultural magazines:

"Several years ago deep plowing and subsoiling were very generally recommended, but their popularity has greatly abated in the last few years. However, they are still recommended occasionally by people who are obviously not well informed as to the actual results which they produce."

"Subsoiling and deep tilling have been of no value in overcoming drouth. The effect, on the contrary, apparently has been to reduce the yields in those seasons which are below the average in production."

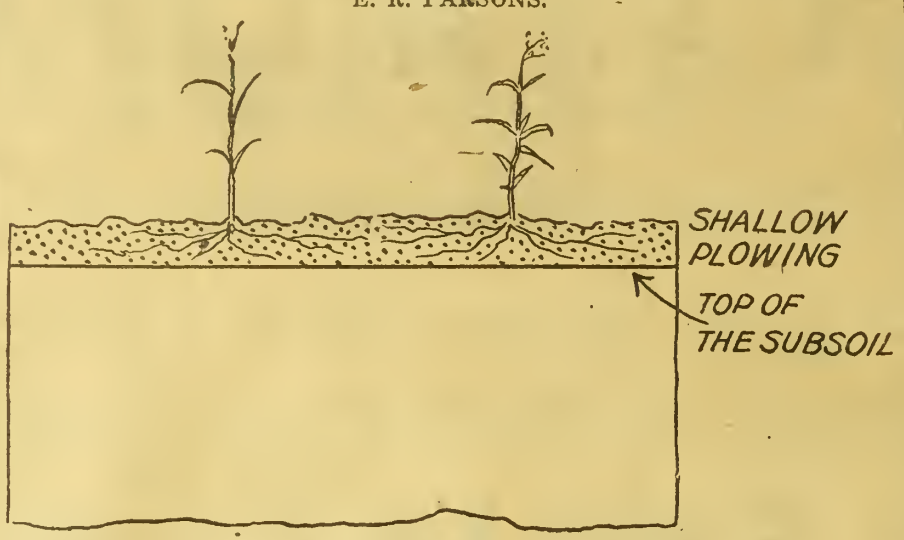
These amazing statements are supposed to emanate from the U. S. Department of Agriculture and are said to be based on experiments carried on by Dr. E. C. Chilcott and his subordinates in the great plains country and some states further east. But strangely enough, they are also flatly contradicted by the same Department of Agriculture to which Dr. Chilcott belongs. Let us turn to Bulletin No. A 68, U. S. Department of Agriculture: "Break or plow in the fall to a depth of 8, 10 or 12 inches. In many sections, if done in the fall, it undoubtedly pays to subsoil 15 or 20 inches. No principle in agriculture has been more thoroughly demonstarted than the value of a deep, thoroughly pulverized seed bed. The object of deep fall plowing is mainly to increase the supply of plant food and storage of moisture in the soil. In all the southern states there are every year periods of drouth. The remedy for this is increased storage capacity for water. This can be accomplished by deep and thorough tillage. On the Ewa plantation in the Hawaiian Islands the average depth of plowing is 30 inches. This plantation produces the largest crops of sugar cane to the acre in the world."

The author of the above was Dr. S. A. Knapp, U. S. D. of A. When the doctors disagree what can a mere farmer do about it? Many farmers have more horse sense than the highbrows. Let us investigate these two doctors. Dr. Chilcott supervises the work of several experiment stations where the usual plot experiments are carried on. The writer's experience in investigating plot experiments has been that they are of very little practical value, and are apt to be unreliable for the following reasons: Our soils are very variable. A few feet may show a sudden change in color and substance. The subsoil may also vary without showing any indications on the surface. There may be sandy strata or rocky streaks just under the topsoil. Under one plot there may be water at a few feet. Under another there may be nothing but dry gopher clay to 100 feet or more. One man may make a deep plowing experiment on a plot and raise corn at the rate of 50 bushels per acre. Another man may do the same with another plot and raise nothing. The experimenter may know how to handle deep plowed ground according to dry farming methods, or he may handle it according to department methods, and since some of these plains experiments have denied the virtues of fallowing, it is easy to guess where they have fallen down, for fallowing and deep plowing go hand in hand; one is of no value without the other.

Dr. Knapp's Sound Advice.

Dr. S. A. Knapp was no tape line experimenter. He was a successful practical farmer, and also a scientist. He collaborated with the farmers and his experiment stations were whole states. In the south he was known as the man who made "two bales of cotton grow where one grew before," and in a very few years the production was about doubled wherever the Farmers Co-operative Demonstration work was carried out. A favorite saying of his was that a man who plowed the ordinary depth could often double his crop by putting one more horse to the plow, at an increased cost of not more than 50 cents an acre.

It is stated in the first of the paragraphs that we quote from the Journal of Agricultural Research that the popularity of deep plowing has greatly abated in the last few years. It is not so in our experience. We write more letters and give out more information on this line than ever before. When the writer arrived in the West in 1880 the usual depth of plowing was 4 to 6 inches. In 1900 it was running about 6 to 8. Today few farmers plow less than 8 and there are large numbers plowing from 9 to 12, and this number is increasing by leaps and bounds.



IF THE TOP OF THE SUBSOIL IS TOO DRY THE ROOTS WILL NOT GO DOWN INTO IT.

In 1886 the writer knew only a few men who knew how to plow deep. Among these were Gassner and Welte of Colorado. They carved a cheese factory and a fortune out of the dry prairie. They not only did this but they raised a fine orchard and actually proved up on a timber claim planted to locust trees. We believe this is the only timber claim ever proved up on in Colorado on the high mesa without irrigating water.

At the present time there are so many doing deep plowing that it is impossible to number them. Whole counties are taking it up. Here is a report on this subject by County Agent C. E. Smith of Las Animas county, Colorado: "Demonstrations showing the difference between deep tilled land and shallow tilled are going on all the time and practically the whole neighborhood is converted to deep tillage, as the evidence of deep tillage compared to ordinary plowing is so striking that no one can escape the truth. This is proving to be the greatest success that the county gent's office through the farmers' clubs, has secured.

"Three years ago the county agent, and the few who dared to advocate deep plowing were laughed at as being visionary. Now some of the same men are trying every day to get the power to plant 12 inches deep, and it is becoming almost a religion in this county."

Production Is the Proof.

When results were finally checked up on these farms the increase in production ran from five to ten bushels per acre. It would be impossible to point all the evidence we have regarding the advantages of deep plowing; paper is too costly nowadays, but here is a word about traction plowing. J. J. Hartman of Elmo, Kansas, says that he and many others all about his neighborhood are raising from eight to ten bushels of wheat per acre more than they ever did before, plowing deep with tractors for winter wheat any time before July.

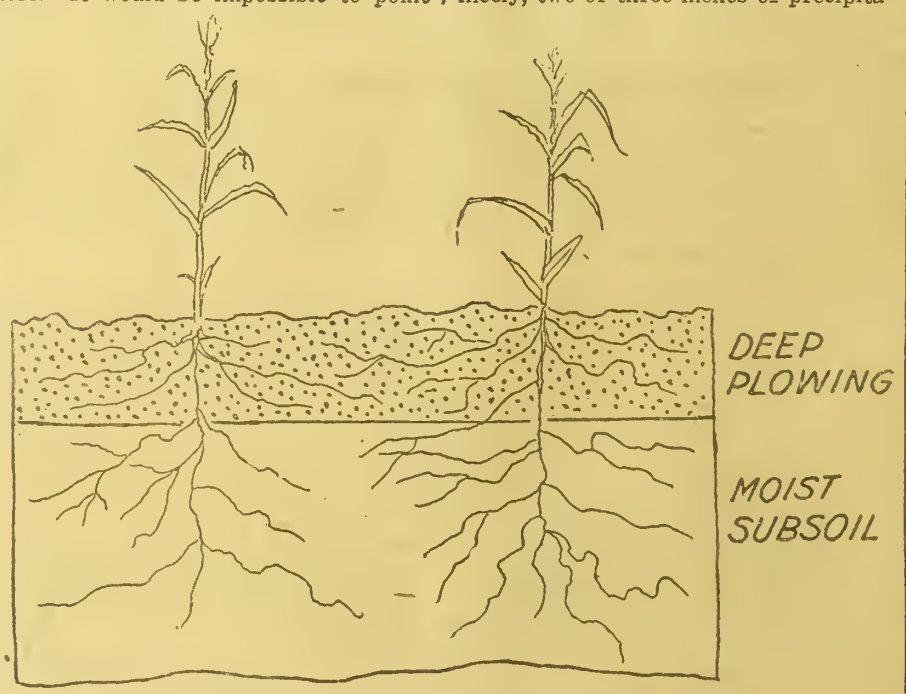
Everybody must allow that returns from large acreages planted by farmers whose work is their livelihood are more convincing than a bushel of grain from a plot experiment. Nevertheless there are many college and university experiments which give exactly the opposite results to Dr. Chilcott's. At the Colorado Agricultural College and several others deep plowing, properly done, has increased the yield in the same ratio as obtained by the farmers and county agents.

We have at hand an example of this in Bulletin 211 University of California, which gives the average results of forty trials at their farm at Davis without irrigation. The large number of trials would seem to eliminate all uncertainty as to chance and freak conditions.

	Bushels per Acre	
	Wheat.	Barley.
Deep plowing	29.78	75.98
Shallow plowing	21.67	69.30

Davis is in a dry farming country with more heat but about the same precipitation as eastern Colorado.

In the early days of dry farming deep plowing was often scored as a failure, for the reason that settlers from the east would always persist in doing their plowing at the last minute and planting their crops in an over-aerated seed bed, in which no moisture had been conserved. To thoroughly soak up and settle ten inches of plowing which already contains enough moisture to plow nicely, two or three inches of precipitation are necessary. Therefore, in order to be sure of accumualting sufficient moisture for this purpose it is the safest course to plow two or three months, at least, before planting such crops as corn and the sorghums, and six months before planting small grain. Thus, fall plowing for spring grain; early spring plowing in March if possible for corn and late crops, and late spring or early summer plowing for winter wheat, planting in August or September. Deep fall plowing is also very good for corn and potatoes, when plowed again in the spring about five inches. Some of the best corn raisers plow in the fall and list in the corn across the plowing in May or June.



UNDER DEEP PLOWING THE SUBSOIL STAYS MOIST AND THE ROOTS GO DOWN.

Keep Subsoil Moist.

One of the principal reasons for deep plowing is to mulch the subsoil and keep it in a moist condition so that the roots will go into it. When the plowing is shallow a six or eight weeks' drouth will so dry out the top of the subsoil that the roots may never get down into it and the farmer is then raising a crop on five or six inches of soil instead of three or four feet—see illustration. Deep plowing acts as a sponge to hold the water from cloudbursts and thunderstorms until it can soak down into the subsoil, where it stays until the roots of some crop take it out. Millions of tons of water that run off into the Missouri every year could be kept in the dry farming country and converted into crops if we had enough deep plowing to do it.

Wherever the plowing is shallow there is more loss by run off, and there is also a puddling of the surface which becomes as baked and hard as a cracked pavement when the hot weather comes. The deep breaking of sod is recommended because it conserves the humus. Shallow breaking leaves the sod on the surface to dry out and much of the virtue of the humus is lost in the atmosphere. The humus from decayed sod is the backbone of our prairie soils; we have no other unless we fertilize. With deep plowing it may last for twenty years; with shallow plowing cultivation soon uses it up.

The writer has always recommended that ten inches should be the minimum for once a year plowing on the dry farm, because the difference between this depth and that of ordinary plowing will often double the crop, and can often be accomplished by the simple expedient of adding one more horse to the plow. With still deeper plowing there is invariably an increase in production, but the cost is also commencing to infringe on the profit, and where one farmer may find it profitable to plow much deeper another, owing to certain soil conditions, may not.

In Europe they have always plowed much deeper than we have and have produced more to the acre. They have found it profitable to plow 15 to 20 inches for potatoes, of which they raise 600 bushels per acre, and 12 to 15 inches for sugar beets, of which our ordinary crop is 20 tons in the best districts. Some crops gather their nourishment almost entirely in the seed bed, refusing to send their roots to any depth in the subsoil and for these, of course, a deep seed bed is the best insurance for a fair crop: In this category are beans, potatoes, and beets; but wheat, especially the winter variety, all small grain, corn and the sorghums, will send their roots from 3 to 10 feet into the subsoil, provided it is moist enough.

Subsoiling is not recommended in every day use on the dry farm; but it has its uses nevertheless. Supposing a farmer has five or six inches of good humus soil on top and underneath that some mixture that when broken up is not fine enough for the surface tilth of a seed bed. In such a case he can plow six inches and follow in the same furrow with the subsoiler, loosening up another five or six inches in order to allow the precipitation to go down. In this way he gets all the benefits of moisture conservation without bringing to the surface the crude soil underneath. Subsoiling is also of value in breaking up the hard pan under the plow sole, caused by plowing for a number of years at the same depth. Subsoiling the corn rows before planting was tried by a boy in Georgia, who raised 170 bushels on an acre.

Failures in deep plowing occur for several reasons. The most common one is planting too soon after the plowing.

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More Potatoes Per Acre Through Better Methods

BURLINGTON SPUD SPECIAL CARRIES EXPERTS AND EXHIBITS

ALVIN T. STEINEL.

WE do not advise every farmer to grow potatoes, nor do we advise present growers to increase their acreage to any extent. Over production will glut the market and potatoes would then be unprofitable. Growing potatoes in the rotation with other crops offers an even distribution of labor throughout the season and gives good returns for that labor."

This was the leading point in the advice and suggestions given growers who took advantage of the opportunity to inspect the potato demonstration car which traversed the lines of the Burlington and Colorado & Southern railroads in Colorado, Wyoming and western Nebraska during March. Experts from the Agricultural College of Colorado, the State University of Wyoming and the University of Nebraska assisted the agricultural staff of the railroad companies in lectures on potato production for market and for seed, and on diseases and their prevention.

Along the C. & S. "high line" at Elbert, Eastonville and Elizabeth, the plan of producing certified seed for the southern market was emphasized. In Weld county along the Burlington branch between Sterling and Cheyenne, the growers on dry lands were advised because of the nearness of the Greeley district, to grow certified potatoes for the irrigated sections. At every point where a stop was made there was an eager crowd of farmers who inspected the exhibits and asked questions concerning their problems.

The Department of Horticulture at Colorado Agricultural College furnished an exhibit of potato diseases, graphically shown by affected spuds displayed in glass jars and by colored charts. Such troubles as flea beetle injury, early blight, hollow heart, nematode injury, worm track, wart, foot rot, fusarium, vascular infection, scab, frost injury and various forms of rhizoctonia were shown.

The Colorado Office of Markets furnished an exhibit of grading, showing well graded No. 1 stock, poor stock and culls. There was a model storage cellar and an exhibit of western potato varieties, as well as some of the hand selected certified Irish Cobblers, Bliss Triumph and Pearl potatoes which took premiums at the Wisconsin show and at the Western Potato Show in Denver.

Placards posted in the car contained such practical advice as the following: "Without increasing the potato acreage of the United States we could increase the production at least 30 per cent by the use of high class seed and good cultural methods."

Show Methods of Treatment.

A barrel in which was suspended a sack of seed potatoes with a shelf above bearing a tumbler containing 4 ounces of corrosive sublimate told the story of the necessity for treating seed potatoes to prevent development of diseases. Many farmers visiting the car spoke of having used formaldehyde, which only reaches a part of the troubles and agreed in future to use the stronger corrosive sublimate treatment before planting.

At the meeting at Fort Morgan, which was typical of many meetings held during the tour, some interesting questions were asked by the growers and answered by Prof. E. P. Sandsten and others of the crew of experts. Irrigation was one of the subjects, a grower asking about the use of water. The answer was: "Use little water; apply in the cool of the day or at night. Keep the potatoes growing constantly and normally."

"Is it true that potatoes should not be irrigated before blooming?"

"It makes no difference; before or after blooming. If they need water give it to them but don't soak them. The potato is different from a turnip or a carrot, or a beet; it is not a root but a true underground stem, as true a stem as is the branch of a geranium plant. It needs air as well as water. The soil should be well drained."

"How about manuring? Would you advise heavy applications?"

"That depends upon the kind; if it is well rotted manure apply plenty of it, but don't put this winter's manure on spring planting. Very often cattle manure carries the organisms of potato scab and if applied fresh it will do more harm than good. Plow the manure under and plow it under deeper than where the tuber forms. Then if it is fresh the potato roots will not touch it but the fertility will be available just the same."

Wisconsin First Prize Bliss Triumph seed carried on Potato Special.

"Are there any commercial fertilizers which it would pay us to use on our potato fields?"

"No, not if you grow potatoes in the rotation and use livestock, giving you fertility to put back into the soil. The potato takes an abnormal amount of potash from the soil; much more than wheat. South Carolina pays out twenty million dollars a year for commercial fertilizers. I should hate to see Colorado farmers go to the commercial fertilizers for their fertility. Livestock and the rotation—plowing under alfalfa—will maintain our fertility without the use of commercial fertlizers."

Bolinger Suggests a Rotation.

James Bolinger, a Morgan county grower, offered a good suggestion for a rotation which he follows:

"I break my alfalfa ground the third year and put in potatoes; I follow this with barley and cut it high and put in potatoes again, and follow this with sugar beets and back into alfalfa the next year. My cultivated land is divided into fields of 37½ acres on which I follow this plan as a 7-year rotation."

Further discussion of problems such as the beetle, which is bad in a few sections, and various potato diseases brought out an observation to the effect that the grower has many difficulties to overcome. Prof. Sandsten said he thought that was not an unmixed blessing; that any crop which we have to work for, as a rule, brings better results than the easily grown crop.

W. H. Paul, an El Paso county grower who accompanied the party on the Colorado end of the tour, outlined the plans of the Divide growers for developing certified seed for the southern market. This project has already been fully discussed in Western Farm Life. The foundation seed stock has arrived and will be planted on a number of farms in the Divide section this spring, to furnish a start for certified Bliss Triumph and Irish Cobblers. This seed was purchased in Minnesota. Dry land growers were particularly interested in Mr. Paul's explanation of methods followed in the Divide country, where potatoes are not irrigated. They wanted to know how deep they were planted, how much seed was used per acre and other details that could be applied under similar conditions elsewhere. Mr. Paul was prepared to give them full information in reply to all questions.

Result of One Year of Field Selecting Seed Potatoes. Seven rows on right are from field selected seed.

A limited supply of Bliss Triumph certified seed stock was carried on the car and sold to farmers in 10-pound lots, on the promise that they would make a test and report back to the agricultural department of the railroads interested. This seed was much in demand. Double the quantity could have been disposed of. It was explained to the growers that the southern market needed each year, a thousand cars or more, and that dry land grown stock would be very desirable and would meet southern requirements as well, or better, than the seed they are now buying in Minnesota, Wisconsin, New York and Maine. An advantage which Colorado growers would have in regard to the Texas market is quick transportation. Things emphasized on the portion of the trip which the writer made may be summed up as follows:

Summary of Suggestions.

Potatoes furnish a good cash crop that is a profitable one through a series of years under average conditions.

The crops grown following potatoes are uniformly better than following any other crop, except legumes.

Potatoes fit into a crop rotation system in a most desirable manner for dry land sections. A commonly used and good rotation is as follows: First year—Small grain; 2nd—Light dressing of manure, and corn. Remove fodder and fall plow; 3rd—Potatoes.

The cultivation given a crop of potatoes secures control of weeds, conserves moisture and increases soil fertility.

Next to clean cultivation or summer fallow a cultivated crop gives best results to the following crop on dry land.

Potato growing offers an economical distribution of labor during the summer. While the grain crops are maturing labor is employed in cultivation.

Your great opportunity lies in the production of high quality certified seed of one or two standard varieties for the southern trade and for the irrigated sections.

Because of advantage in freight rates, (being close to your markets), climate, and soil, we recommend the production of certified Pearls and Triumphs.

Send only the very best seed on to the market, and use the best for your own planting. Keep the culls at home, selling the second grade stock for table use.

Organize a Certified Seed Potato Growers' Association, which will aid in storage and marketing problems. Establish a trade mark which stands for quality. Establish a reputation for high quality seed potatoes. Establish a standard quality under your trade mark.

The difference in price between ordinary seed stock and certified seed ranges from 50 cents to $1.25 per cwt. It costs but little more per acre to produce certified seed, but the returns more than make up the difference. The demand for certified seed is increasing.

All certified seed produced in this section this year should be planted right here next year, so that the production next year will be sufficient to market in large quantities.

The best seed for this district is the home grown seed, which has been carefully selected from the hill and field and is certified.

The railroad representatives in charge were J. B. Lamson, Agriculturist for the Burlington at Chicago and Earle. G. Reed, Agriculturist for the Colorado & Southern, having charge of the western territory with headquarters at Denver. Colorado Agricultural College was represented by Prof. E. P. Sandsten and Prof. H. D. Locklin, horticulturists, and O. S. Rayner of the Farm Management Department. W. H. Paul represented the growers; D. W. Thomas, the Denver Civic and Commercial association and Stuart L. Sweet and W. F. Heppe, the United States Bureau of Markets. Other speakers helped in Wyoming and Nebraska.

Part of the Crew of Potato Experts. From left to right, J. B. Lamson, Chicago Agriculturist, Burlington Railway; Earle G. Reed, Denver, Agriculturist, C. & S. R. R.; Prof. Locklin, Colorado Agricultural College; W. H. Paul, Colorado Potato Grower.

Truth in Fabric Law.

A bill is being considered by Congress which is known as "The truth in Fabric law." This bill provides for fair dealing in the sale of so-called all-wool goods. It is and has been the custom to work over shoddy material in the way of old rags, hair, hemp and silk mixing it with a little wool and then selling the goods as "all wool." This results in an inferior article for the consumer. It goes still farther than this in that it is affecting the market for virgin wool. The new bill makes it compulsory that all garments be labeled with the various materials from which they are made. This will tend to popularize woolen goods, as the consumer will be able to see what he is getting.

This bill deserves the support of all those who are interested in wool production. This form of legislation is now used on commercial fertilizer and it does away with the use of many of the inferior mixtures. It is the duty of sheep raisers to get back of this bill and let congressmen know how they feel about it. In fact, every farmer should urge its passage. We do not all raise sheep—more's the pity—but we all must wear clothing.—H. A. L.

Forget your own failures, and remember your successes.

The Strength and Peril of Class Consciousness

A COLORADO FARMER'S ANALYSIS OF PRESENT SOCIAL STRUGGLE

ALFRED M. WILSON.

I AM a believer in class organization, but not in class consciousness divorced from social sympathy. That is my mental attitude towards all class organizations. That is my mental attitude towards the Miners' Union; towards the Grange and the Society of Equity; towards the Farmers' Union of which I am a member; towards the Farm Bureau, of which I am also a member, and in whose possibilities for large and increasing usefulness and service to the entire country I am a firm believer; and that, I can not but think, should be the mental attitude of all men organized to advance their common interests, whether the goal of their united efforts be more satisfactory living conditions, or a higher wage, or a shorter work day, or a more profitable market for their products, or an improved system of distribution, or a more equitable system of taxation, or the right of collective bargaining.

The question at issue is not the question of organization. That has long since passed the academic stage. Every person who is in sympathy with the toilers whether with hand or brain or both, and who is at all conversant with the achievements of organized effort will freely and frankly concede that it is right and desirable for men with common interests and common problems, for men engaged in a common calling, profession, business, or pursuit, to organize for the purpose of solving their common problems and of advancing their common interests.

But "United we stand" does not express the whole truth involved in class organization. It is not enough for men with common interests and common problems merely to "stand." That is the kind of class organization in which too many farmers seem to believe. They seem to think they have done their whole duty if they keep up their annual dues and their insurance. But there is no physical posture more exasperating and wearisome than that of simply standing, no mental attitude more barren of results worth while. It is not enough for men to stand; it is not enough for them to stand together. It is not enough for them to hold the line. They must take the offensive and advance; they must go forward in an orderly, intelligent way; they must go from achievement to greater achievement, from Appomatex to Chateau Thierry.

In class organization, which is only another name for disciplined, co-operative effort, there is a strength of effort and a solidarity of purpose such as can not be secured in any other way. No man, however intelligent, however well educated, however strong and versatile, can do for himself AND the members of the class to which he belongs, what the members of the class working together in a common organization intelligently and harmoniously and in subordination to wise and responsible leadership of their own choosing can do for themselves. That is the strength of, and justification for, class organization.

An Element of Weakness.

Notwithstanding its very great strength, there is, however, in class organization, an element of weakness, also an element of potential danger, not only to society as a whole, but also to the members of the class themselves. For practical, effective purposes, for the sake of the larger good of, and of the larger service to, the members of the class, organized class effort demands the subordination of the individual, the surrender of individual initiative, of individual freedom in the conduct of one's business. That is unquestionably good for the class as a whole; but it is hard upon the individual of ability initiative, and enterprise. This phase of class organization is for the individualist the rock of offense. On this rock more than one farmers' organization has been wrecked.

Some one has said that the motives that govern men are ninety per cent selfish. However that may be, the farmer is not more selfish than are other people, but he is more of an individualist and in consequence more reluctant to give up, in any degree, his freedom of action. In the past he has gloried in his industrial and economic freedom; but because of modern industrial and economic conditions, that heritage of freedom will soon be only a memory. If he is wise, he will acknowledge the facts as they are. If he does so, he will see that it is only through organized class effort that agriculture, the business in which he is engaged, can be brought to its highest efficiency and that it is only through organized class effort that he can get the rewards for his labors and for his hazards, to which he is justly entitled.

The individualist may find it difficult to yield to subordination that class organization demands; and yet the ideal of organized effort—"The good of the members as a class is superior to the good of any one individual in the class"—is a magnificent ideal. Class organized effort is, in a way, altruistic, but its altruism is, paradoxical though the statement may seem, class-centered. In that fact lurks danger. There is also danger, perhaps a greater danger, involved in the leveling process that class organization would effect. Class organization proceeds upon the assumption that all men in the class are eual; but in no class are all men on an equality. They differ physically, intellectually, and spiritually; but in the leveling process that would effect an enforced equality, there is an ever-present danger that the efficient may be brought down to the level of the inefficient; the intelligent, the ambitious and the strong to the level of the weak, the dullard and the slothful. Altruism, even the altruism of organized labor, is fine; but the altruism of the inefficient whose inefficiency is due either to physical weakness, or to inherent laziness, or to a selfish disposition to demand for their services the highest possible wage, not because their services warrant that wage, but because through organized effort and organized force they can demand and get a wage beyond that to which they are entitled, is, I insist, miasmic, a thing of death, not of larger life and larger service; the negation of the vital and inspiring purpose that intelligent and responsible organized class effort aims to realize. There is, I repeat, an element of danger involved in the leveling process but so great is my confidence in the honesty of the majority of working men and in their sense of justice and fair dealing, that I firmly believe that the attempt of the inefficient in the ranks of organized labor to cripple efficiency and so to lessen production and at the same time to increase the cost of production can not, in the long run, be successful. If, however, the men themselves can not foil the attempt, the public may feel called upon to take hand in the matter; and if it does, it would be well for organized labor to take heed; for there is no organization, however large its membership, whether of miners or of farmers, that for long can withstand a righteously aroused public opinion.

Involves Class Consciousness.

The danger to which I have just alluded is due also, in a measure at least, to the feeling of class consciousness which class organization develops and strengthens. Class consciousness may exist apart from class organization; but class organization always involves a feeling of class consciousness, more or less pronounced. But when the feeling of class consciousness is present and operative, there is always involved an element of danger, due to the fact that class consciousness tends to give men a distorted and false perspective of life. Under the spell of the feeling of class consciousness men readily, yes, unconsciously fall into the error of thinking that the part is greater than the whole; but error begets error. The fundamental error that the part is greater than the whole has given birth to a brood of errors that menace the very safety and security of society.

Before indicating this brood of errors, I should like to anticipate an objection which men dominated by the feeling of class organization would raise at this point; that society at the present time is too conservative, too reactionary; that before it can function as it should, society must be thoroughly purged and cleansed. There is a measure of truth in that statement. It may also be granted that society at the present time is passing through the pangs of childbirth; but why deliberately kill the mother in order to save the child? From the point of view of sociology, psychology, and ethics, would it not be a wiser and more humane procedure to save both mother and child?

The brood of errors which the fundamental error that the part is greater than the whole begets includes, among other errors, the following: (1) that the interests of society as a whole is subordinate to the interests of the class; (2) that when a class conflict is on, the interests of society must be held in abeyance; and (3) that the members of a class, in order to gain their ends when a class conflict is on, are justified in using any means whatsoever, even conspiracy itself. Closely related to these errors are two others: (1) that once a member of a class always a member of the class; and (2) that as members of a class they are entitled to a livelihood in the line of work in which the members of the class to which they belong, are engaged, even though there be not in that line enough work to be done to keep them employed the year round on a normal time schedule of six days a week and eight hours a day.

More distantly related to the above, yet none the less a mischievous and pernicious offspring, is the error that the people of the country as a whole can not, either through prejudice or through a lack of technical knowledge, understand class problems and that in case of any controversy between employer and employe the public, irrespective of the real merits of the case, would side with the former rather than with the latter.

Hostile to the Public Good.

That employers as well as employes, may be, and at times are, dominated by these errors is a matter of fact, not of theory merely. The attitude of the steel operators was just as hostile to the public good as was the attitude of the steel employes. The coal miners called the coal strike at a time when, if unduly prolonged, the strike would have caused the general public the greatest possible amount of suffering. The railroad brotherhoods fought the Cummins' bill on the ground that it denied them the right to strike, the right, in other words, to conspire, in any wage controversy, not only against the owners of the railroads, but also against the public as well. The brotherhoods also fought the railroad bill which has just been passed by the two houses of Congress and signed by the President, on the ground that representation by the public on the board of adjustment provided for in the law would be prejudiced against the men and therefore detrimental to their interests.

One of the grounds on which the miners based their demand for a shorter work week, a shorter work day, and an increased hour wage was that there was not enough work to be done in the mines to keep them constantly employed the year through, working on a normal time schedule.

Such is the confusion of thinking and acting into which class men dominated by the above economic errors naturally and inevitably fall. The miners were, in effect, demanding that the mine owners should give employment to the unemployed, simply because they were miners, notwithstanding the fact that if they were successful in their demand, the public would have to pay the bill. The brotherhoods, by their attitude, were alienating the sympathy of the public, which, in any given controversy with the owners of the railroad properties, they must have if they are to win out. The steel operators were equally dull, obtuse, and indifferent to the public welfare and to the force of public opinion.

And this confusion of thinking and acting will continue as long as class consciousness is divorced from social sympathy. In fact, unless there is soon a radical change in the social attitude of class men, conditions will become worse instead of better. Unless class men get back to first principles and realize that the whole is greater than the part and that the good of society as a whole is the ideal which we as class men organized and conscious of our strength should seek to realize, society will break up into as many hostile, warlike camps as there are classes. That, however, would mean the end of law and order and a relapse into primitive savagery.

A Great Responsibility.

Great is the responsibility resting upon organized capital and upon organized labor in this critical hour. By the continued use of methods based upon false assumptions, they may hurl society over the precipice; by the use of methods more humane and generous and more responsive to the general good they can reconstruct as well as save society. It is, however, doubtful whether organized labor and organized capital will rise to their opportunity and render a service which shall lead subsequent generations to rise up and call them blessed—so enmeshed are they in false economic errors, and so hostile and of such long standing is their attitude towards the general public.

In this hour I turn with hope and confidence to the farmers of the country. The farmers are both capitalists and laborers. Their problems are essentially the problems of labor on the one hand and the problems of capital on the other hand. In solving, or at least in trying to solve their labor-capital problems, farmers get an experience that enables them to sympathize intelligently and helpfully both with labor and with capital. They know what it means to do business on a small margin. They know how unjust the demands of farm labor may at times be. In their characters as laborers they know what long hours of toil mean. Moreover as laborers they are on the job seven days in the week. Their horses may rest on Sundays; but even on Sundays their horses and cattle and other livestock must be watered and fed; but if these things are to be attended to, they must be attended to by the farmers themselves, for Sundays are the hired man's days off. Farmers, moreover, belong to a class; and yet so far as farmers are concerned, class consciousness is for the most part conspicious by its absence. People have for a long time been speaking of the farming class; but the farmers have been accustomed to think of themselves, not so much as members of a distinct industrial class, as American citizens living in the country, engaged in the raising of wheat and oats and corn and producing butter and milk with the view of making a living, acquiring a competence, and establishing a home. Farmers are, however, consumers as well as producers. They raise wheat, but they must buy flour. Some of them may raise sugar beets, but they must all buy sugar. For them as well as for people in the cities and manufacturing centers the high cost of living is pregnant with meaning. The farmers, moreover, do not strike; they do not care to strike. They would rather work and get less than to loaf and get nothing. They may, it is true, curtail production, due to the economic pressure that through the misdirected efforts of others, may be brought upon them, but it will go against the grain for them to do so.

What May Be Expected.

In view of their experiences and in view of their look upon life, what may we justly expect of the farmers of the country when they shall be thoroughly organized? The farmers have been slow to organize; but both the industrial and the economic pressure are making farmers realize, as never before, how important it is for them to get together and to work together if they are to keep their farms from being exhausted and if they are to get a fair profit above the cost of production.

To meet this two-fold need and to give the farmers an opportunity to get together just because they are farmers, a new organization has been formed. I refer to the American Farm Bureau Federation. If. however, this great organization, which is spreading like a prairie fire, over the country, is to do for the farmers what they would have it do for them, the farmer members must keep themselves free from selfish class consciousness. They must keep constantly before them the ideal of social sympathy and social service. They must acknowledge, and act upon the knowledge, that society is a complex organism and that no member can for long prosper at the expense of the other members of society. But as I recall the everyday experiences of farmers, their outlook upon life, and the traditions back of them, I have no fear at this point. I have unbounded confidence in the farmers of the country—in their loyalty, in their patriotism, in their disinterestedness, in their entire willingness to meet without complaint

(Turn to Page 33.)

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Start

—If you want to go ahead, you push both levers slightly forward, just as you would loosen your lines when you start your horses.

Stop

—If you want to stop, you pull back lightly on both levers and the tractor stops in neutral.

Back

—If you want to back up, you pull back harder on both levers, just as you would on the lines in driving your team.

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—If you want to turn to the right, you pull back on the right lever and forward on the left.

Turn Left

—If you want to turn to the left, you pull back on the left lever and forward on the right.

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THE Square Turn Tractor is easier to drive and handle than a one-horse rig. Even a boy or girl can do it. There is no tiresome, heavy work to do. You have two handy levers for lines to make the tractor **stop, start, back** or **turn.** You have two handy foot pedals to raise and lower the underslung plows.

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You have no steering wheel to spin. No gears to shift, no clutch to bother with. You sit comfortably above the plows where you can watch their work without twisting, turning or craning your neck. You do more and better work with less effort. You do everything you can do with horses, and more.

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Enabling you to get closer to fences than you can with a team. The underslung plows are hitched to the draw bar right at the front of the tractor, so the whole outfit takes up only a little more space than a team of horses alone. You can nose the end of your plow beams right against the fence, get right into corners, clean out dead furrows; in fact finish up every job better than you can with horses No other tractor is like it. No other tractor equals it in ease of handling, efficiency and economy

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DEALERS and DISTRIBUTORS: **Choice Sales Territory now available in Kansas, Oklahoma and Colorado.**

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The sensational field demonstration this tractor makes gives Square Turn Tractors a decided advantage over all competitors. Farmers are quickly sold on the advantages of the "square turn," ease of handling and underslung power lift plow features. Carries moldboard disc plows, two-way plows, road blade, Fresno scraper, or three row lister underslung beneath the tractor itself. We support dealers with extensive and intensive local and national advertising, plus a factory service that insures satisfied owners. Prompt deliveries assured. Write or wire today for particulars or for special representative to call.

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Wishing you success in your good work, I remain, Yours,
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Gentlemen—My tractor is giving perfect satisfaction. I like it because it is a square-turn tractor. I like it because it is a two-way tractor. I like it because the Giant Grip Drive is as flexible in starting as a steam engine. In running against a rock or other obstruction, all strain on the crank shaft and bearings is eliminated by the friction transmission and with the plows hitched beneath the frame of the engine in plain sight of the driver it is a perfect plow machine.
Very truly yours,
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Contagious Abortion Treatment

STORY OF FIVE-YEAR TEST AND ITS RESULTS.

Dr. F. S. SCHOENLEBER.

ACCORDING to the U. S. Government's figures contagious abortion has been taking an annual toll of over $20,000,000 for years. Many of our best purebred beef and dairy herds, as well as range herds have been and still are experiencing heavy losses from cows which are dropping their calves before full term, or calves dying shortly after birth with white scours or calf pneumonia.

These losses cannot be estimated in total, since they mean not only the immediate loss of the calf itself but also the loss occasioned in the feed and care of the cow during the time between bringing healthy calves and the interest on the investment.

Where only a few cows in a herd are affected the losses naturally are not so great. But being in the herd no one can tell how soon the disease will break out in a virulent form and spread through the herd with severe consequences. This condition has been experienced in a number of instances and has taken a toll as high as 70 to 90 per cent of the calf crop. This naturally soon puts a man out of the business, since all he could do is to sell off the herd, no matter how valuable the animals might be. Nor do his troubles stop here. When he re-stocks his ranch the disease is still on the premises and possibly in a few years again manifests itself.

A Little History.

As far back as 1910 the writer, then at the head of the Veterinary Department of the Kansas Agricultural College and in charge of experiments in animal diseases, called attention of the college authorities to contagious abortion in cows and mares, stating that something should be done in an experimental way to try to find a treatment for this disease as it promised to cause severe trouble in the near future. "Lack of funds" prevented this from being carried out. This was during the time the experiments in blackleg were in full force, which experiments were all carried out under the directions of the writer and which, as we all know, resulted in the perfecting of "The Kansas Germ Free Fluid Blackleg Vaccine" (Aggressin) now so extensively and successfully used to prevent blackleg among calves.

This blackleg disease being conquered called for contagious abortion investigations, resulting in a treatment which now seems to equal in efficiency the Blackleg Aggressin. These experiments, however, were carried out independently of the college.

Before placing the Blackleg Aggressin in the hands of the cattleman generally it was tested out on over 7,000 calves, extending over a period of several years.

Before placing the Abortion Treatment in the hands of the public it was tested out on over 9,000 cows, extending over a period of five years. This product was first offered to the public this year (1920).

Results of the Treatment.

All of the herds treated during 1915 and all those treated subsequently, no matter how badly they were infected with abortion, have been bringing calves regularly ever since. The treatments seem to restore the system of the cow to its normal breeding condition.

These treatments are very simple and work upon mares as well as they do upon cows. While it is necessary to give each animal two treatments ten days apart, it is not necessary to clean up and disinfect the barns and corralls, which latter is practically impossible. This phase of the subject is well illustrated in an experiment now in progress in eastern Colorado—two herds of cows, owned by two different men but running together in the same pastures, corralls and barns. About ten per cent of these cows were aborting, the disease paying no attention as to who owned the cows. One herd was treated, the other was not treated. Not a single cow of those treated aborted after treatment, while the untreated cows continued to abort in the same proportion.

Losses After Treating.

Out of about 9,000 cows treated it was found that the disease differed very much in extent and virulence in different herds. In herds where the losses previous to treatment were less than 80 per cent the treatments stopped all further losses. In herds where the losses were over 80 per cent of the calves the treatment failed to do the work in six cases. That is, in treating over 9,000 cows six calves were lost after the cows were treated. However, after the loss of this immediate calf these same cows have been bringing healthy calves regularly, showing that the calf was probably practically dead at the time the cow was treated.

In cases where cows seem to be sterile the treatments brought back 70 per cent to apparently normal breeding conditions.

This product is put up in the form of tablets which are dissolved in a certain amount of warm water and injected into the vagina of the animal. It seems to make no difference whether the animal is pregnant or open. It does the work equally well in either case. It has been used successfullly upon cows that were within a few weeks of calving normally.

Large Cows Excel in Yield.

Cow-testing records based on 38,532 dairy cows from 110 cow-testing associations are being analyzed by specialists of the Dairy Division, United States Department of Agriculture. The tabulations have brought out a number of interesting relations between milk production, butterfat test, butterfat production, and income over cost of feed. The larger cows excelled the medium and small cows in production of both milk and butterfat.

The average annual milk production of all the animals was 5,936 pounds per caw, and the average butterfat production 246 pounds. These figures are considerably larger than the average for the United States, indicating that dairymen who are members of cow-testing associations either dispose of their poorest cows or else make them more profitable by better feeding and handling.

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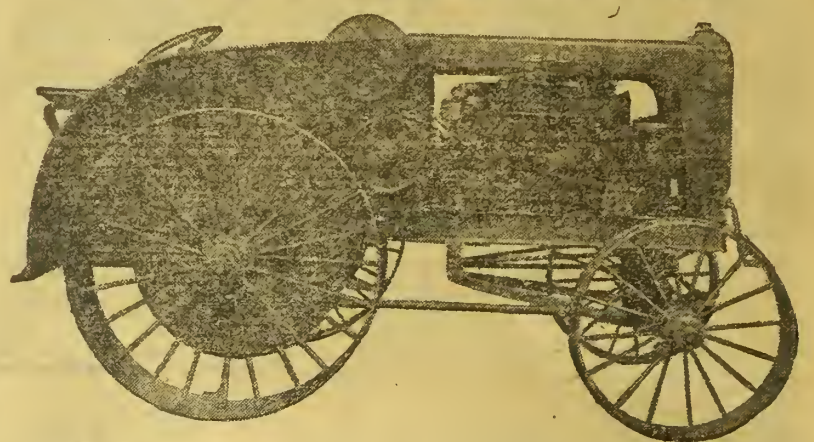

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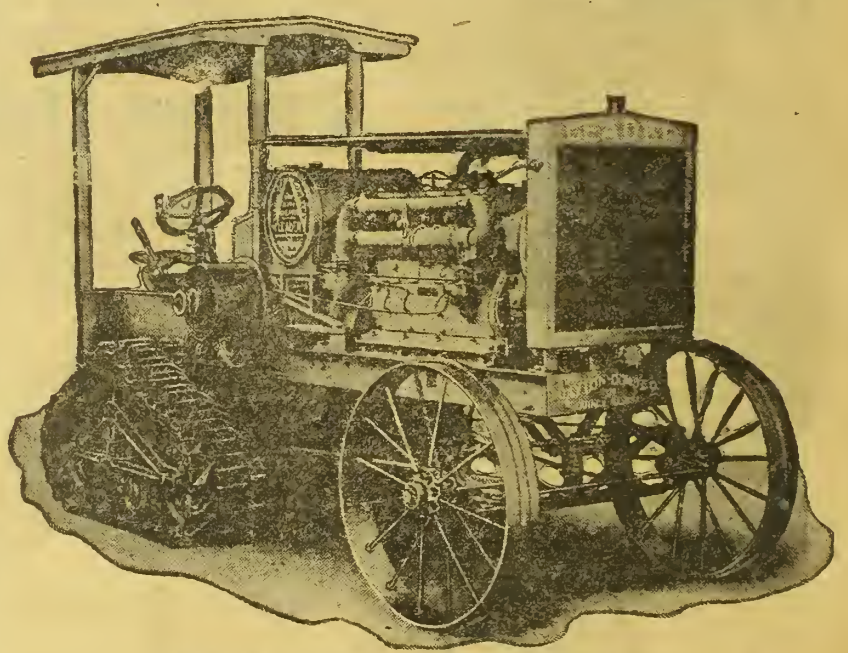

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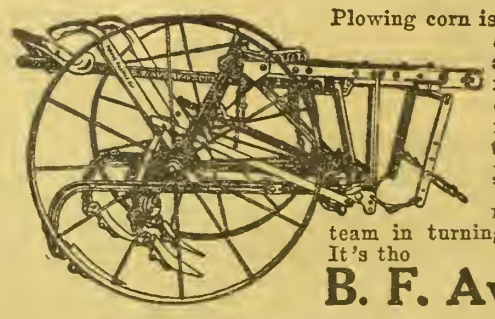

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B. F. Avery's Leverless Cultivators

Upon reaching the end of the row, you take your feet off the gangs and they rise automatically.

To free one gang of trash, you releaso the foot pressure from that gang and it rises without disturbing the other gang.

When working on sloping ground, the pivoted seat bar angles downhill, giving the wheels and gangs corresponding angle uphill, thus overcoming the tendency to work away from the row.

The pivot pole working in connection with the lateral shifting arch makes cross-plowing "as easy as pie."

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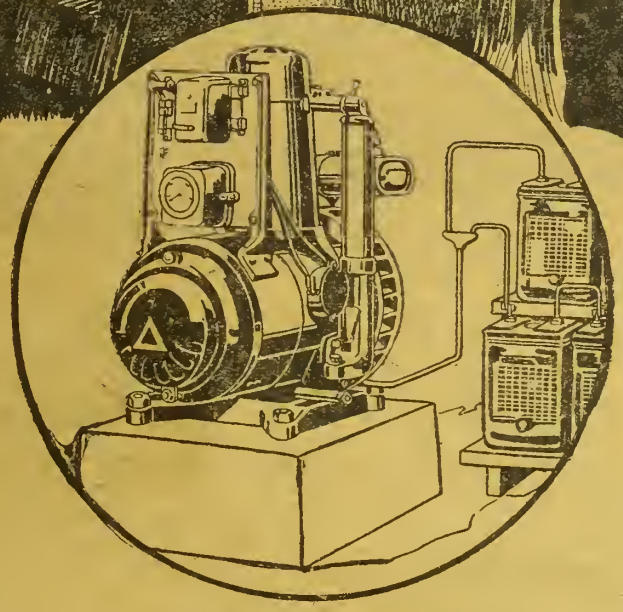

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"DELCO-LIGHT is the Best Time and Labor Saver on My Farm"

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The clear rays of electric lights make the house, the barn or the barnyard bright as day, at the touch of a button. The electric current pumps and carries the water just where you want it, and performs a score of other jobs swiftly and silently while you do something else.

The experience of Delco-Light Users and their combined opinion is the best proof we have to offer, of two things—that Delco-Light is mechanically correct—and that it is a paying investment

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There's a Satisfied User near you

More About Milking Shorthorns

M'CAMPBELL EXPLAINS THE KANSAS EXPERIMENT.

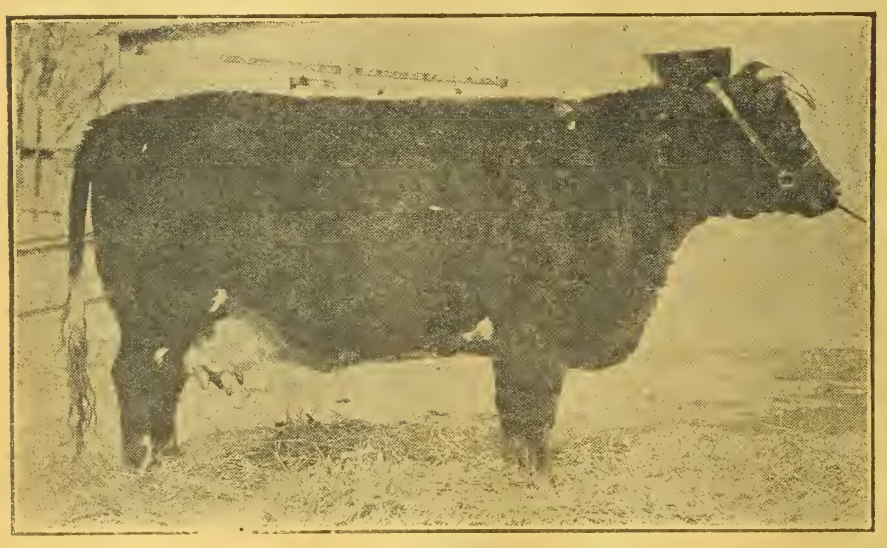
C. W. McCAMPBELL.

In the issue of March 1st appeared an article discussing Milking Shorthorns, with a letter written by Dr. C. W. McCampbell, head of the Animal Husbandry department of Kansas Agricultural college to a Colorado farmer, as a text. After reading the expressions of Roy A. Cook, Secretary of the American Milking Shorthorn association and others who expressed themselves on various phases of dual purpose cattle breeding in that issue Dr. McCampbell, who was not aware that his letter would be made the basis of an extended discussion, came back with the following re-statement of his views.

I FEEL that the discussion which you have brought on will do a great deal to clear up the so-called Milking Shorthorn delusion and will be of great value in eliminating the deception which is so often practiced in selling so-called Milking Shorthorns—long, lean, lank cattle that do not profitably produce either milk or beef.

During the past two years, I have noted very carefully the cattle that have been shown in the Milking Shorthorn classes at the Denver show and the question that has continually arisen in my mind has been, "Why raise cattle of this kind that are not giving as much milk on the average as the low set, broad-backed, blocky Scotch and Scotch topped cows in our own herd?"

For Mr. Cook's information, I might say that the beef type heavy milk producing cows winning for us were shown at the Sni-a-Bar show last fall and it was one of the largest Shorthorn shows held in this part of the country. The Kansas State Agricultural College shows its cattle only at state fairs and national shows. Pride's Bessie, a straight Scotch Marr Bessie cow, that has produced 9,170 pounds of milk won second in this class. Matchless Queen, a beautiful beef type cow produced 8,733 pounds of milk, won fourth place. Neither of these cows have been forced for a high record. The first prize junior yearling fat Shorthorn steer at the International this year was out of one of our best milkers, a straight Scotch Cruickshank Butterfly, and the champion Shorthorn steer at the International in 1917 was a full brother to Matchless Queen.



Matchless Queen, type of Shorthorn Cow the Kansas Experiment Station is producing. Her Milking Record is 8,733 pounds, testing 4.34 per cent. Her full brother was the champion Shorthorn steer at the International Show in 1917. She weighed 1,610 lbs. the day the picture was taken and had finished four months of the lactation period when her record was made.

Mr. Cook might also be interested in knowing that the second generation from these cows is giving evidence of being better producers than their dams, both as to quantity of milk and beefiness of offspring. This second generation of cows are nearly all sired by straight Scotch grandsons of Whitehall Sultan and are splendid beef type heifers.

We are planning to show in the beef class (not in the Milking Shorthorn class) at the International next winter, five Scotch Shorthorn cows that will have an average milk production of approximately 8,500 pounds and, I wish to extend an urgent invitation to Mr. Cook to look them over.

I knew that sooner or later the results of the experiment which is being conducted at this station would bring upon our heads the wrath of certain Milking Shorthorn adherents, but so long as we can produce as much milk from our herd as the average milking Shorthorn herd with cows that are good enough to win in the beef classes in the larger shows and produce calves that are good enough to win in the larger shows, I feel that we are producing a very valuable farm cow, regardless of any preconceived ideas or prejudices on the part of any one.

Perhaps I should say that we are producing a strictly beef type cow—broad, deep, thick and low set—that gives as much or more milk than the average Milking Shorthorn. It is not a difficult matter, any one can do it so why raise the other kind?

I beg to emphasize the fact that the statements I have made are not merely a personal opinion but that they are based upon the results obtained from experiments conducted at this station and they stand regardless of any prejudices on the part of any one that may be raising "Milking Shorthorns." I would say further that the deception which has been practised in the selling of so-called Milking Shorthorns in our state has been positively criminal.

Columbia Grafonola

This Special Grafonola Is Yours for a Little Down---A Little Each Month

A fine Cabinet type instrument with all the new, exclusive Columbia features. Deep, full and clear in tone—beautiful in appearance. A wonderful addition to any home.

Only $18.50 Down and $10 Per Month for 11 Months

Prepaid to your very door on receipt of down payment, including twenty selections (any ten 85c records).

Hear all the music of all the world in your own home. Give rare treats to your neighbors and friends. Send the down payment today. Prompt shipment assured, and a square deal guaranteed.

Write for Record Catalog containing 6,500 selections.

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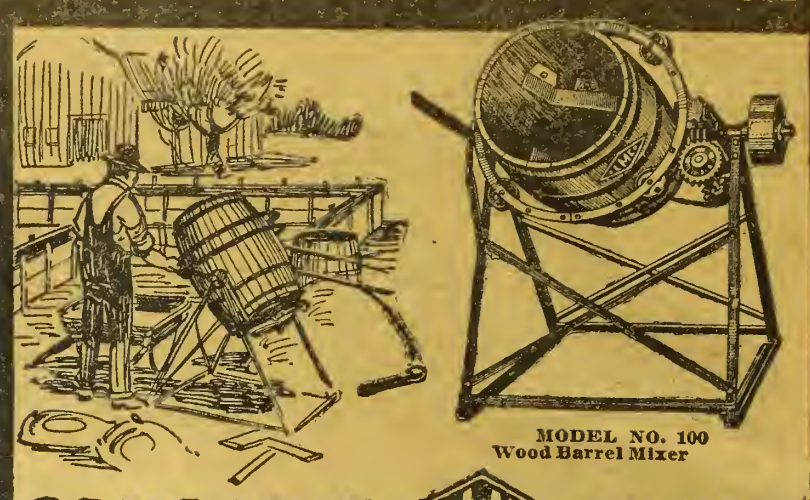
Own This Mixer and Do Your Concrete Work Yourself



MODEL NO. 100
Wood Barrel Mixer

CONCRETE ELMCO MIXER

With the Elmco Concrete Mixer you can easily build your own walks, steps, building foundations, feeding floors, tanks, and silos, of concrete. Do the work in your slack seasons and save the cost of hiring a contractor. Make your own concrete and you know it will be well done—no cheating of cement or other ingredients.

The Elmco will pay for itself on your first job. It can be operated by two men, or can keep as many as seven busy. The Elmco is the one small mixer on the market that is filled from one side and dumps from the other—a great saving in time and labor. A 1½ h. p. engine operates the Elmco with ease. It mixes the batch 120 times per minute—you are assured of a perfect mix.

Get an Elmco and do your concrete work right. Our catalog tells you how to mix good concrete and mortar. Mail the attached coupon today for your copy, showing the Elmco in eight different models—wood and steel barrels, with and without truck or engine. There is an Elmco to fit your particular needs

The Elmco Concrete Mixer is fully guaranteed to do all we claim for it. Get our catalog and read our guarantee of satisfaction. Mail the Coupon Today.

E. F. ELMBERG CO., Inc.
140 Second St., Parkersburg, Iowa
Mixers shipped from warehouse, Denver, Colorado.

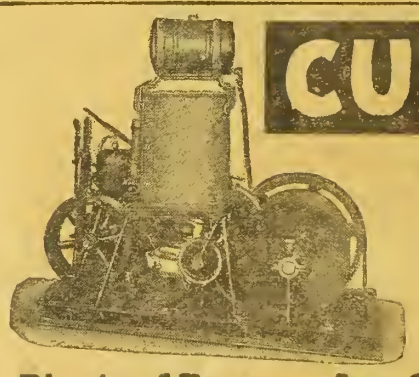
MAIL THIS COUPON NOW

E. F. Elmberg Co., Inc.,
140 Second St., Parkersburg, Iowa.

Please mail my copy of your free catalog describing Elmo Concrete Mixers, and telling how to mix good concrete and mortar.

Name .....
Town .....
State.....R. F. D. ...

CUSHMAN



4 H. P. Hoisting Outfit

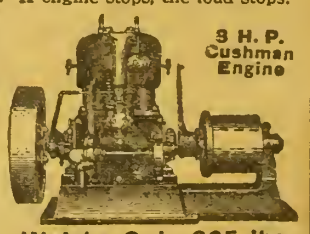
Just the hoist for handling the hay fork, lifting ensilage out of pit silo, pulling up hog or steer when butchering, for excavating or building, or for handling ice. Will put 30% more hay on the stack than can be done with team and driver. Does away with the tugging and strain of lifting off hay rack, beet rack and wagon bed.

For contractors, prospectors and silo builders, it saves the wages of two men or more per day and is absolutely safe. When mounted on trucks, hoist can be easily drawn around silo.

Plenty of Power—Any Speed—Absolutely Safe

Easy to hold load by applying brake lever. No need to use the brake on return, for automatic governor clutch prevents over-speeding. Load cannot drop. If engine stops, the load stops. Weight of engine and hoist, assembled complete on steel skids, only 680 lbs. Trucks can ba supplied if desired.

Guy Redabaugh, Johnstown, Col., writes: "I uso a Cushman Hoist to put alfalfa into my barn. I use slings on my wagons, two to each wagon, so tha load runs from 500 to 1500 lbs. I ha e hoist and engine in corner of the barn. The hoist and engine work perfectly on all loads and I am saving tha wages of a man and team with it. Besides, I can handla the hay faster and safer than with a team. I use my hoist to lift on and off the heavy hay and beet racks used here. It is a practical, economical machine that will have its place on all farms."



3 H. P. Cushman Engine

Cushman Engines—4 to 20 H. P.

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Weighs Only 325 lbs.

Get a WITTE

I will ship you any styla WITTE--2, 3, 4, 6, 8, 12, 16, 22 or 30 H-P.--Stationary, Portable, Saw Rig--or a Lever Control Drag Saw on short notice. Cash or Easy Terms. Tell ma WHAT you want and WHEN. Latest improvements--lower prices. Anything you want in the Engine line.

KEROSENE ENGINE

SAVE $15 to $500

Catalog FREE

BOSCH Ignition

Write for prices on all styles WITTE, with BOSCH Standard Magneto. It'a High-Tension--the only successful ignition for kerosene. Hotspark--snra fire--easy to operate. Lowest priced H. T. Ignition Enrina Sold Direct--Big Saving--Quick Service. Full information by return mail. ED. H. WITTE, Pres.

Arm-Swing Lever Control

WITTE ENGINE WORKS

2642 Oakland Ave. Kansas City, Mo. 2642 Empire Bldg. Pittsburgh, Pa.

What Does It Cost *You* A Year To Feed Your Pests?

EVERY farmer knows that pests are an expensive luxury, especially when prices are higher than ever before.

It's not only a question of expense this year, but how much they will cost you next year and the year after, if they are not kept down.

Fortunately, there are many farmers who consider this question on a broader basis than that of their individual interests. But even the conscientious citizen who endeavors to keep down the pests on his own place is more or less at the mercy of the man who is indifferent to this menace. Bird and animal pests do not recognize boundary lines of property.

Remington UMC
for Shooting Right

A Remington autoloading or repeating shotgun is the all-around firearm to have for combatting these robbers of your crops. And then during the seasons for squirrels, quail, rabbits, ducks and other game you've got a gun for *real* sport.

When a farmer devotes the same care and attention to the selection of his firearms as he usually does to his automobile, harvester, tractor or gas engine, he is likely to select a **Remington.** It's an arm backed by over 100 years of steady progress in gun-making wherein each improvement is the result of real needs and practical tests.

In ammunition, Remington developed the famous **Wetproof** shotshells—shells which are absolutely waterproof. Wetproof is not a brand of shells but a great forward step in shotshell manufacture. The next time you buy shells ask your dealer for "Nitro Club" and "Arrow" (smokeless powder) or "New Club" (black powder). You'll get Wetproof shells. And look for the Red Ball on the box.

Send for "Model 10 Folder" on Remington pump-action shotguns; "Model 11 Folder" on autoloading shotguns, and "Wetproof" folder on shotshells. This literature will give you full information.

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Largest Manufacturers of Firearms and Ammunition in the World
Woolworth Building, New York City

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Our Guarantee—We guarantee the reliability of every display advertiser in this journal, and agree to make good to every paid subscriber any loss that may occur thru trusting a display advertiser who proves to be a deliberate swindler. Notice of the complaint must be sent us within a month of the time of the transaction, and you must have mentioned Western Farm Life when writing the advertiser.

The Lesson of the Gale.

Extraordinarily high winds, at times reaching a velocity of 60 to 70 miles an hour, swept over the mountain and plains country about the middle of March. Great damage was done to the winter wheat in some sections of eastern Colorado. Soil drifting covered up the plants in some cases and elsewhere on exposed upland, the wind literally whipped the wheat out of the ground. No method of culture is proof against such winds on the lighter soils, but fortunately these spring storms seldom attain the velocity of a gale, although some damage occurs almost every season on the plains.

While the losses to individual farmers are serious, there is this redeeming feature—they came at a time when the blown-out fields can be put to forage crops for livestock feeding. The growing season is still before us and there is ample time to plow up hopelessly damaged wheat and plant the land to row crops. The recent storms are only another bit of evidence that livestock farming is the safe plan for the semi-arid plains. Stick to the cows and pigs and chickens; make wheat a surplus crop and be fortified with a silo and plenty of forage to see you through in case the wheat fails, either from drouth or winds.

✦ ✦ ✦

Bureaucratic Propaganda.

We have been informed by official communication from the office of the United States attorney general that "the Department of Justice has begun a campaign to educate consumers concerning the value of the less costly cuts of meat. The Department feels that this campaign, while undertaken primarily in the interests of the consumer, will also be beneficial to the livestock producer by broadening the demand for all parts of the meat animal."

Undoubtedly there is need for more educational work along this line among city consumers, but we have agencies that have been carrying on that work through the Department of Agriculture and the agricultural colleges for years. Another spurt will help. The question that occurs, however, is why does the Department of Justice concern itself about this phase of the problem? Isn't there enough to do in prosecuting the profiteers to keep the force busy?

The impression that the average editor gets from the mass of material emanating from various departments at Washington is that our governmental bureaus are overloaded with high-priced talent that seeks an outlet through publicity campaigns, financed by the government postal franking privilege and free space in the newspapers and magazines. Some inroads on the high cost of taxation could be made by eliminating a lot of this dead wood. There is no more reason for the Department of Justice engaging in a thrift campaign than there would be in enlisting the aid of the Treasury Department in prairie dog eradication.

To cite other instances: we find the Department of Labor issuing instructions on child welfare to workers of the Department of Agriculture; the Postoffice Department making "a survey of discontent" among the farmers—an agricultural department matter if it's anybody's business; an internal squabble between the Department of the Interior and the Forestry Bureau of the Department of Agriculture as to who should be who in handling the grazing on public lands; the Bureau of Education fighting for legislation that will take authority over agricultural colleges from the Department of Agriculture. And so it goes on clear down the line.

These activities at public expense are decidedly apparent to the man on the editorial desk who is flooded day after day with propaganda material from this, that and the other bureau at Washington. Out of the mess he reaches the well founded conclusion that it is time Congress were taking a hand in the situation that has grown up largely through inflated war time appropriations and is also a result of too much bureaucracy.

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Get Busy on the Fair.

An article in a recent issue of Western Farm Life calls attention to the things that are necessary to improve the livestock shows at the smaller fairs. Mention was made of a number of much needed improvements. These suggestions are timely and should be taken into account now rather than a few weeks before the fair is to be held. There are many details in connection with the successful handling of a fair that should be worked out really before experiences of the previous fair are forgotten. Of course this work is a public spirited one and it is difficult to get our minds on it until it is forced upon us at the last minute. The many needed improvements in the local fairs should be taken care of early so that they can be done to the best advantage. Fairs are of sufficient importance to the development of a section that they should receive proper attention and careful business management. At any rate start thinking about your next fall's fair now.—H. A. L.

✦ ✦ ✦

That Temple of Agriculture.

An organization styling itself The National Board of Farm Organizations is seeking to raise a large fund for the building of a Temple of Agriculture in Washington, D. C. Inquiries received from readers indicate that a statement should be made concerning the responsibility of this movement. The finance committee in charge of the fund is composed of R. D. Cooper, Gifford Pinchot and Charles W. Holman. Of these Gifford Pinchot is the best known in the west, having formerly been United States Forester. The men behind this scheme are all good men and, as far as we know, financially responsible, but they have not been authorized by any considerable number of farmers to raise money to put up a building at Washington. We fail to see how the erection of a building such as proposed will help the farmers of the nation, no matter how good the intentions of those who are raising the fund. There are more practical ways of helping the farmers in the solution of their problems, hence our advice is spend your money where it will do you some good.

A Bit of Sound Advice.

Here is a "roast" that came to the editor of the Strasburg (Colo.) News recently:

Dear Mr. Dodd:—

Here is a roast. Not the kind editors usually give, but one from a yearling steer that was fed nothing but corn ensilage, wheat straw and Russian thistles, the ones you roasted me about last fall.

"Don't sell your livestock, raise more feed." The article you printed on your front page last week was the best silo article you ever printed.

That is exactly as every dry farmer should look at it and when they do, and act accordingly, this county will prosper as it never did before.

Yours respectfully,
F. W. HAUPERT.

Employer: "For this job you've got to know French and Spanish and the pay is eighteen dollars a week."

"Lord, Mister, I ain't got no edication; I'm after a job in the yards."

"See the yard-boss. We'll start you in at forty."—Life.

Mr. and Mrs. A. M. Wilson, their Collie, Kim and Dixie, a splendid mount.

Introducing Alfred M. Wilson.

Every building must have a foundation. Builded upon the rock it will stand; if upon sand it will be overwhelmed by the elements. Organizations are buildings—the structures that grow out of mental conceptions of the needs of a class or group. It is well, therefore, to go down to bedrock and see what underlies the Farm Bureau movement. Mr. Alfred M. Wilson, the master of Manzana Orchard, Clifton, Colo., has done this in his able article on page 6 of the present issue. He is qualified to do it. He is a trained thinker as well as a practical farmer. He was educated at Denison University, Chicago University and Yale University, receiving the degree of Doctor of Philosophy from Yale. He was the first president of Grand Island College; held a professorship for several years at Nebraska University; taught in colleges in California, his branches including history, English literature and the Semitic languages. When fire and quake sought the destruction of San Francisco he was there. Monotony has not been his portion in life. For almost nine years he has found in fruit growing a wide use for his training and talents, and he has given much time and thought to marketing problems and assisted in working out practical co-operative plans. These personal touches will help us estimate the value of Mr. Wilson's opinions expressed in "Class Organization and Class Consciousness," which every farmer should read.—Editor.

Progress of Land Banks.

On February 28, 1920, there were operating in the United States 3,977 Farm Loan Associations, and the total mortgage loans made by the Federal Land Banks through these associations to 122,055 farmer-borrowers as of that date, amounted to $335,018,076. Deducting from this amount the loans paid off in full by borrowers to-wit; $8,835,900, the grand total of loans now in force is distributed within the Federal Land Bank Districts as follows:

St. Paul	$44,430,300
Omaha	42,674,440
Spokane	42,202,320
Houston	37,574,781
Wichita	27,216,800
St. Louis	25,196,880
Louisville	24,268,800
New Orleans	22,432,805
Columbia	17,734,755
Berkeley	16,676,400
Baltimore	13,215,100
Springfield	12,558,795

Up to February 28, 1920, interest and amortization payments due by borrowers to the Federal Land Banks amounted to $20,143,630.13. Of this amount all but $266,649.83, or 1.3 per cent had been paid, and of this sum $127,749.24 represents delinquent installments maturing during the month.

The Farmer's Business Methods.

To The Editor:

I see where some good man has asked for points for a debate on the subject of marketing the farmer's produce. His question is easy to answer. The farmer is the only class in the world that sells his product at wholesale prices and buys everything back at retail. He surely is the buiness man of the world! You hear of thousands of merchants and bankers going broke or claiming they do, but you seldom hear of a farmer going broke. The chief reason is that if he doesn't make good he starves through and tries it once more.—B. A. Ferguson, Rocky Ford, Colo.

The Branding Iron

A newspaper commenting on agricultural problems recently made this statement: "It must be admitted that month in and month out they (meaning the farmers,) work fully as hard as the city person." Occasionally we do find a city newspaper that is willing to give the devil his due.

* * *

Making paper out of beet pulp is the latest scientific discovery. Our farmers have been making beef out of it for some years, so we can't see anything great in the recent achievement.

* * *

Found in the El Paso County Democrat:

O Leo Margarine!
Whether the years prove fat or lean
This vow I here rehearse:
I take you, dearest Margarine,
For butter of for worse.

* * *

As a national asset the dairy cow ranks in the Liberty bond class. Total value of dairy cows in the United States is given at $2,022,000,000, on January 1, 1920. In 1915 the average value was $58.25 per cow; in 1920 it is $91.95. And the value is there, as is evidenced by thousands of examples, a notable one being a Johnstown, Colo., cow who in one year netted her owner a clear profit above cost of feed of over $300. An animal that may be bought for from $200 to $300 and will pay for herself every year for seven to ten years in succession is a gilt edged investment.

* * *

An item sent out by the Department of Industrial Journalism of Kansas Agricultural College recently says: "A salary increase of $500 for every member of the Kansas State Agricultural College faculty will be requested by Dr. W. M. Jardine, president of the college, for the ensuing fiscal year. If funds are not available for the increase the board of administration will be asked to use such funds as are available, creating a deficiency appropriation bill for the next legislature to cover the amount."

Dr. Jardine has evidently decided to take the bull by the horns. The farmers will stand back of their agricultural colleges in any reasonable action to keep them on a basis of efficiency. Fear of legislatures and political boards is going out of fashion since Farm Bureaus are finding their strength.

Reading the Advertisements.

In times past, on account of the exaggerated and unwarranted statements that they so often carried, it was considered a foolish waste of time to read the advertisements in periodicals. But times have changed. There are some lines of advertising that only a few years ago were accepted by even the best publications whose business will not be accepted at all now. This general cleaning up of the advertising columns has brought two great results: Those columns are now read and studied by the most careful readers for educational and business reasons; and by excluding the undesirable kinds of advertising the amount of highly desirable advertising has been greatly increased. The increase of advertising has made it possible for the publisher to get out a vastly better paper than he could afford to publish with the smaller amount of advertising patronage. It pays to read advertisements. The commercial history of the world today is to be found in the advertising columns.—The Ohio Farmer.

Let Western Farm Life Service Bureau help solve your farming problems. All questions promptly answered

"apr. 20"

If the label on your magazine reads "apr. 20" your subscription expires this month. You, no doubt, intend to renew. By doing so at once you not only extend us a big favor, but will make sure that you will not miss a single issue of Western Farm Life.

Send us $1 for a two-year renewal subscription, or $2 for a five-year renewal subscription.

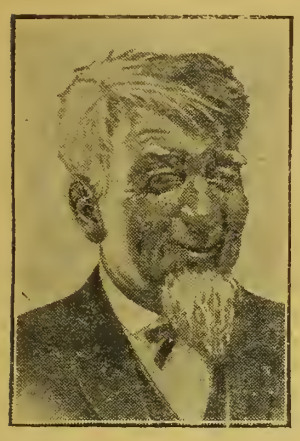
We appreciate your past subscription and hope you appreciate our magazine enough to renew now.

After you have renewed, watch the address label on your paper to see that you have been given proper credit.

WESTERN FARM LIFE,
Denver, Colo.

Comment by Farmer Putnam

OUR MISSOURI FRIEND HAS SOMETHING TO SAY ABOUT DISTRICT SCHOOLS AND TEACHERS' SALARIES.



JOSEPHINE'S been after me to write somethin' about teacher's wagis. She seen that article about the carpenter up to Fort Collins gittin' more then them professors and she's been kind-a wantin' to help out them school marms in our district that's been complainin' about the high cost of shoes and dresses. It is turrible when you think about it—ten dollars fur shoes that comes only up to the ankles and fifty dollars fur dresses that comes just below the knees, but starts only a short distance above the equator. It seems like the scanter they make 'em the higher they come in price. If it warn't that Josephine's handy about makin' over her things I reckon I'd be complainin' too. I don't like them scant styles frum a decency standpoint, but they has their advantage fur economy when they are made out of old things. Ladies dresses is gittin' so short that Josephine'll soon be able to use my old shirts by puttin' a ruffle around the bottom and a V in the neck with a little lace edgin'.

Now speakin' of wagis, I reckon I would like to say more about them Aggie college professors and the carpenter, but I'm afraid if I do the board'll cut the carpenter's wagis. I seen where the Governor called all them heads of state institutes down to Denver fur a conference to decide that they didn't have no money to raise wagis with and they decided it without a dissentin' voice. I don't know what them poor professors is goin' to do They cain't go to farmin'; that takes money and experience; they're too proud to beg and too good to steal. A lot of 'em is lookin' fur other jobs—bricklayin', carpenterin', barberin', any honest hand labor; it all pays better'n bein' a professor or a school teacher nowadays and you don't need no college degree.

It's gittin' so a feller that's got a college eddication and wants to use it to help eddicate others is looked on as a kind of a tail ender, like we used to look on hired hands and hired gals. The war sure done a lot to change the idees of the world. The times is the queerest I've seen since I been here. They is lots of money in America and them high paid laborin' people is gittin' their share of it, but it don't seem to last no time. I think we're about ready fur Bryan and some of his free silver doctrine at last.

Speakin' about wagis, I reckon them district school teachers needs a little more money then they been used to gittin'. I seen in one of the papers where they is 800 schools in Colorado closed because they ain't got no teachers, but I don't think that figger is right. It sounds too big. I been goin' around more or less and I ain't found many country school houses closed fur that reason but a mighty big sight of 'em closed because Prof. Sargent is consolidatin' the schools. It's one of the biggest things that's been done in this state. You don't hear no kicks outen them consolidated school teachers about wagis and conditions. They like their jobs and they're bein' better paid fur their work than them city school teachers—and earnin' it too, because their work is more practical.

Down in the San Luis valley they gives them school marms a chance to make extry money by drivin' the school busses that picks up the kids and brings 'em back home ag'in. They git about $25 a month extry fur that and it gives 'em a chance to git fresh air—plenty of it this last month down in the valley and out on the plains. By teachin' them country boys and gals somethin' about farm machinery, household duties and crops and such why it gives the teachers fresh subjects to talk about and brings up the young people along more useful ways then they git in the city schools.

Josephine is buttin' in on this here school reform work in our district, but I keep tellin' her it's dangerous business. It takes a feller like Prof. Sargent that has got lots of backbone and kin stand abuse to handle school board squabbles. He's had a hand in nearly a hundred of them consolidations in Colorado and fights don't scare him, because he knows when the fightin's over and the ballots is counted and people sees the fine schools and the auto busses, they furgits all about the little squabble that had to be gone through with when the old districts was abolished.

Our district schools is mostly owned by the leadin' farmers in the district. We call 'em public schools, but many of 'em is run in the interest of private parties. Bein' a member of the school board is a honor—or it ought to be—and some people don't know how to bear up under a high honor. They see only the good of No. 1 instead of the good of all, and that starts trouble. Then, a lot of good farmers has got into trouble over school matters through the fault of other people. Sometimes it's a fight over who is to teach, and sometimes the teachers gits in bad with the children of some of our best families, and sometimes it's because the teacher don't dress like she should to set them younger gals a good example, and sometimes she's too flirty and likes to dance too well. Oh yes, I been through it all and I know that it ain't allus the school board that's to blame.

I went to a district school myself and I never had no sympathy with the teacher in them days, nor with the school board, and I know how us boys and gals was abused. We never did deserve the beatin's we got. Anyhow that's what we thought in them days.

I kin recolleck one time when we had a feller named Branson teachin' our district school. In them days they didn't trust lady teachers to handle country kids. We was a live bunch and it took a man that could pass a good physical examination to teach us; it didn't make much difference about his book larnin'. Branson was red-headed, tall and kind-a thin, but wiry and quick as a cat. The board tuk him fur his looks as well as his larnin' and he was smart too. He only staid that one term and later went to studyin' law with Judge Mills at Platte City and they sent him to Jefferson City—that is to the legislatur, not the pen.

One Saturday a bunch of us boys went walnuttin' and when we got home we painted our faces with walnut hulls that gives 'em a dark brown stain that won't wash off. We figgered that if we looked like Injuns our folks wouldn't make us go to meetin' on Sunday and so it turned out to be, but we didn't figger on what Branson would do Monday mornin' when we come to school. We was all a settin' in our seats when he called the roll and he gave a kind of a general look at all the benches and seein' that four of us looked dark complected he sez:

"Jeff Putnam, Joe Applegate, Jess Burns and Ray Williams, go out to the well and wash your faces and come back here lookin' like white boys. We don't want no niggers in this school."

If he hadn't a been from Ioway he wouldn't a-said that. The minit the words was outen his mouth Joe Applegate straightened up and I seen his fist double up an' his eyes blaze. His dad was a captain under General Price in the Civil war and his folks had owned a lot of slaves.

"I want you to understand Mr. Branson, that I'm no niggah!" he yelled.

"I didn't call you that; I said you looked like one."

"You lie!" sez Joe.

Say, folks, you-all don't know nuthin' about district school life as it used to be when I was young. I wisht you could-a seen the fight that follered! This was in a country whar a lot of the Quantrell band come from and right over the line in Clay county was the Samuels farm, where the James boys was borned and raised, and us wildcats knowed all about them border troubles and we was ready fur a fight at the drop of the hat.

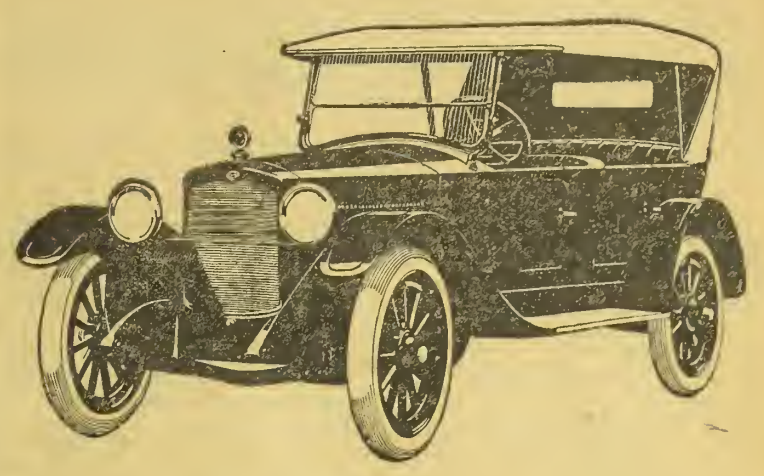
Branson had a pawpaw cane that he used on us and the fust lick in the fight come from him when he walloped Joe Applegate over the shins with the cane. The hull school was on their feet and them what wasn't helpin' Joe was hollerin' fur Branson. Jess and Ray tried to hold Branson while Joe would pound him, but the teacher was too quick and wiry. He pulled hisself loose and swung his stick around with one hand and with the other grabbed two of the boys by their gallusses and shook 'em like a pup would a rat. I never seen a better scrapper. His red hair stuck up straight in the air and his eyes was poppin' and he had a little glint in 'em like he was tryin' to laff. He looked dangerous to me and I yelled at Joe to lay off and call it quits before he got hurt.

It took him only about five minutes to tame the kids and when he seen that they had walnut stain on their faces and that it wouln't wash off he laid his pawpaw pole on the desk and sez: "We will now take up geography. Jeff Putnam, name the leading tributary of the Ohio river that flows through Kentucky."

"The Licking," sez I.

This restored order in the school and it made Branson strong with us fur the rest of the term, because we found out we couldn't put nuthin' over on him. Fur them days the district school system was all right. I've heard some folks say it was good enough fur their fathers and good enough fur them, and that may be so, but it ain't good enough fur our children.

Thos. Jefferson Putnam.



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The mechanical excellence which underlies the dependability of the Grant Six, is the natural result of long experience in building light sixes. From year to year Grant Six engineers have worked steadily to create a car that is as simple, as sturdy, as well designed in every detail as it is possible to make it.

The unusual popularity of the Grant Six among prosperous farmers has furnished a great incentive. To retain and increase that popularity has been the constant aim.

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Write for new illustrated catalog and name of Grant Six dealer in your community.

GRANT MOTOR CAR CORPORATION

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Ready to Oblige.

Mistress—Now, Ada, I want you to show us what you can do tonight. We have a few very special friends coming for a musical evening.

Cook—Well, mum, I 'aven't done any singin' to speak of for years; but, as you insists upon it, you can put me down for "The 'Oly City"—London Passing Show.

Sixteen tons of stumping powder have been ordered through the farm bureau by 102 Bonner county, Idaho, farmers, to be used for land clearing purposes in the coming year.

Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Sign Your Name.

Letters to the Service Bureau which are not signed by name and address of sender are given no attention. Sign your name. If your inquiry is of a private nature and you do not want it published, your wish will be followed. But you must sign your name as an evidence of good faith. This rule applies to all communications received by this magazine, and it is applied by all magazines and newspapers.

Roads On Section Lines.

Will you please advise in regard to establishing new roads in Colorado? Are the section lines supposed to be left open for a road, or can they be forced open for that purpose; and in that case, could the owner collect from the county for the land taken, or should he give the land without any consideration?—L. H., Huerfano County, Colo.

I know of no law making county roads on section lines, merely because they are section lines. The lines need not be left open, so far as I know, and if roads are made they must be made under law of the state which provides how they shall be condemned. It is usual for the adjoining owner to give up the land without consideration as he benefits very largely.—Hamlet J. Barry, Attorney, 724 Equitable Bldg., Denver.

Right of Redemption.

If a man owns a farm and enters a homestead exemption—then mortgages it—and it is foreclosed, can his wife redeem after it has been foreclosed and taken possession of? If the mortgage is not advertised right, that is, the amount due and interest is not stated correctly, can it be redeemed? How long a time would there be to redeem in?—Subscriber, Colorado.

The wife has the right of redemption. The amount stated should be substantially correct, but this would not interfere with the right to redeem. Nine months is the period of redemption. I am assuming in this answer that you mortgaged the farm, including the homestead exemption and that the wife signed the mortgage.—Hamlet J. Barry, 724 Equitable Bldg., Denver.

Harrowing Small Grain.

Would you kindly advise what kind of a harrow would be suitable for cultivating grain after it is up and started to grow, to be used for the purpose of making a dust mulch and conserving the moisture after rains in May? I find that a common harrow is too heavy and drags out the grain. Could one suitable for the purpose be made with spike (wire) nails? Have about fifteen acres on a side hill at present on which I raise grain without irrigation and think with proper care, should get a great deal better crop. How late should cultivation be continued?—G. W. M., Pitkin County, Colo.

Grain which has been planted three inches deep does not readily pull out with the ordinary harrow; but after it joints, harrowing may injure it by breaking it down. A light harrow in which spikes are used instead of the regular harrow teeth will not stand the work on account of the spikes bending in every direction for want of the right temper. The safest implement to use is the spring tooth weeder, which looks like a hay rake and is made on the same plan, except that the points go into the soil instead of sliding over it. When the teeth strike a root the spring causes them to bounce back and pass on one side. When the dry spell approaches it is an immense advantage to a grain or any other crop, to be properly mulched in order to save evaporation. On soil which heaves with the frost it is not good policy to harrow as soon as the ground thaws out; but later on if the stand recovers and becomes well rooted it may be harrowed with the weeder without damage. When light showers occur at intervals of a week or two there is no need of harrowing; but towards the end of May a long, dry spell may set in until the drouth is broken by the summer rains. If the weather man could tell us ahead when the dry weather is about to start we would know just when to mulch.—E. R. Parsons.

Starting a Lawn.

Will you please give me some information on the subject of planting and growing a lawn in this climate? I would also appreciate information on sturdy vines, hedge plants and flowers for a clayey soil. What types are most hardy and when should one plant them? What fertilizer is best for such plants and soil?—J. D. L., Wyoming.

In regard to lawns: If you follow careful methods of soil preparation and use good seed in starting your lawn and give it plenty of irrigation you should have no trouble in getting a good stand of bluegrass. It is necessary to spade new ground to a depth of 8 or 10 inches removing all weeds, roots and other debris and cutting up the clods preparing a well fined seed bed just as you would for a cultivated crop. Apply well rotted manure or sheep manure to the soil mixing it thoroughly. If fresh manure is used it often contains vital weed seeds which germinate and later choke out the lawn grass. The surface seed bed need not be over an inch in depth but when the grasses are established they send out long lateral feeding roots which must have a mellow, open sub-soil from which to draw plant food and moisture. After the soil has been well prepared and the surface soil well fined by raking you should pack the lawn with a heavy roller, loosening up the top soil again after this rolling. This treatment will provide a suitable seed bed for a lawn grass mixture. The best mixture would be bluegrass and white clover. White clover comes up quickly and makes a strang growth the first year protecting the tender shoots of the bluegrass. After the bluegrass is well established it will choke out the clover and you will have a fine lawn. Scatter the seed thickly; then rake and run a roller over the surface once more to pack it down and level it. Your soil must be in moist condition as the roots draw their sustenance through the soil fluid and cannot live without it. Grass needs plenty of water and it must be kept growing through regular and generous application of water, It is better to water twice a week thoroughly than to lightly water every day. Light irrigation is very rapidly evaporated and if you miss a day your grass dries out quickly because it is not rooting deeply. Test your soil frequently to see that the moisture goes well down but do not over irrigate. Be careful that there are no depressions in the surface where the water stands. In regard to the variety of bluegrass we would suggest that you try Canadian which is a very hardy variety suitable for drouth conditions and higher altitudes.

Pinto Or Mexican Bean.

I would like you to let me know the difference between a pinto bean and a Mexican bean. Is the Mexican bean white with brown spots on?—P. N., Pueblo County, Colo.

While the pintos are often called Mexican beans the latter is not the proper term for them. There are many varieties of Mexican beans of different colors. The true pinto was formerly called Mexican but the name now adopted is applied to a buff colored, speckled bean such as that illustrated in the photograph we are enclosing in this letter. We are sending you a bulletin on beans. On page 6 of this you will find a complete description of the pinto. This bean brings a better price than the ordinary Mexican bean as it is in greater demand on the commercial market.

Purebred And Thoroughbred.

What is the difference between a purebred and a thoroughbred?—A. B., Utah.

The proper use of the term thoroughbred is applied only to the American trotting horse, otherwise known as the Standard bred trotter. The term, however, has come into common use to express purebred as applied to any farm animal. Such use,, however, is incorrect. When speaking of purebred farm animals we mean such as come from unmixed ancestry of one particular breed. Sometimes such animals are registered and sometimes not.

Crops For Alkali Spots.

I would like to have some information about how to handle a little land that has alkali spots in it. I was thinking of putting it to barley. What would you advise? It lies along the Arkansas river, 18 miles below Salida.—W. H. S., Fremont County, Colo.

Yes, we agree that barley would be a a good crop to try on this land as barley is alkali resistant. If, however, the land is badly alkalied and you have tried grain crops why not give sweet clover a chance? We are sending an article from our issue of March 1 entitled "Sweet Clover on Alkali Land," which gives results in Oregon and other sections with this crop on lands that would not produce grain profitably. In the San Luis Valley of Colorado where there is much trouble with black alkali

Making Tires RIGHT

There is no longer any mystery in making tires. Anyone can do it who cares to buy the necessary machinery and materials. But to "make tires" and to *"make tires right"* are two different propositions.

The extra mileage in a well-made "right" tire is the result of painstaking, conscientious attention to details—not only material and equipment.

BRAENDER TIRES are making new friends daily because of the habit of taking pains and the sense of responsibility—call it conscience if you like—which will not permit a tire to leave the factory unless it *is* right.

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TORPEY RUBBER CO., 1909 Lawrence, Denver, Colo.

sweet clover seems to be the only crop that is able to withstand the effects of these salts. The reason for that is the extensive root system of the plant which opens the sub-soil giving better drainage for the alkali salts through the lower layers instead of bringing it to the surface where it precipitates and forms a hard crust which no plant can penetrate. On land, however, that is simply troubled with the common alkali barley should do fairly well.

Keeping Smoked Meat.

What is the best way to keep meat after it has been smoked?—G. H. Huerfano county.

During moderate weather smoked meat may be left in the smokehouse for some time. The house should be kept perfectly dark and well ventilated so as to prevent dampness. A dry, cool cellar or attic with free circulation of air is a good place to keep smoked meats after they are removed from the smokehouse. The place should be dark and free from flies or other insects. If you intend to keep the meat for any length of time it should be wrapped in waxed paper and then covered with burlap or muslin before being hung up. Keep in a cool, uniform temperature and there will be no danger of spoilage.

Water Witching a Superstitution.

Answering C. T. H., Cheyenne county, Colo: There is no virtue in the use of the forked twig in locating water or minerals. This is an old superstitution which has been the subject of discussion since the middle of the Sixteenth century. It has no value whatever in locating underground water or minerals although many people seem to believe in it.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Tumor on the Eye.

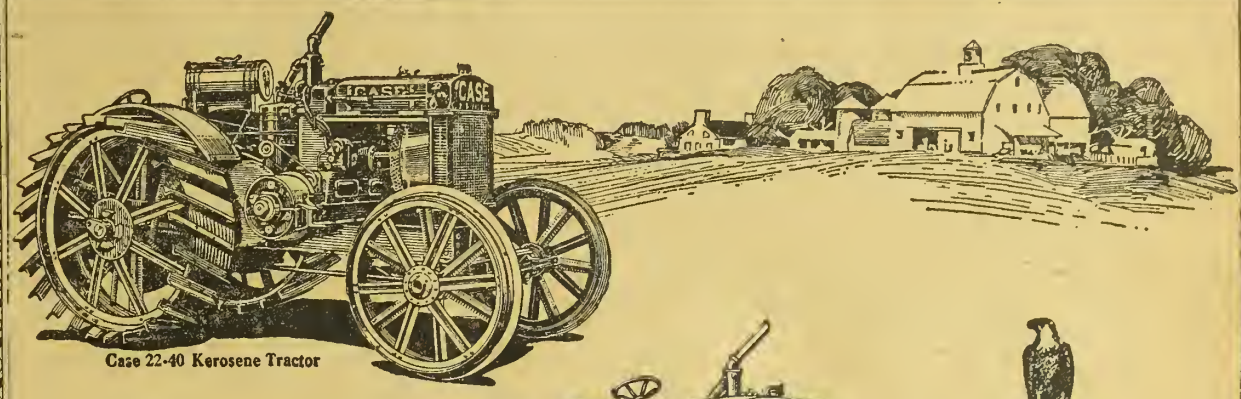
I have a purebred French bull pup 10 months old. A swelling about the size of a navy bean has developed in the corner of one eye. It looks like an enlargement of the tear duct opening and has remained red and about the same size since it first appeared. The eye seems perfectly healthy, and there is no apparent distress, but it is disfiguring. What would you advise?—A. F. S., Arizona.

Tumors that grow in the region of the eye ball usually start in the conjunctival membrane at the canthus of the eye and are most likely to be malignant. A fungus growth takes place rapidly and is amenable to treatment. The slow growth of this tumor indicates that it is most likely to be an epthelioma and has probably already affected the eye ball. The only hope is in early extirpation of the tumor. If the eye ball is involved it must be removed. If this can not be accomplished, and in the hope that it may not be malignant, (cancerous), treatment with potassium iodide might be tried, but without very much hope of success. This treatment consists in giving by drench three drams of potassium iodide, at one dose, daily, dissolved in a pint of water. Do not continue the treatment longer than ten days. This treatment might be combined with surgical removal of the tumor, but it will be better to carefully observe the extent of the growth, and if its removal appears to be impracticable, then try the other treatment.—G. H. G.

Probably Brisket Disease.

I have a cow that has a swelling along the brisket, extending back of the front legs. One of the neighbors says there was quite an epidemic of this sort of thing in North Park a few years ago, and the ranchmen called it water breast. This cow has a calf five or six weeks old, but has not done very well as a milker, and we let the calf run with her. She was a four to five gallon cow last year, but now the calf can take all the milk and does not look much better than an ordinary skim milker.—W. E. W., Mesa County, Colo.

The disease in question is probably what is commonly known as "Brisket Disease." This disease was made a project for special investigation by the Colorado Experiment Station a few years ago and the cause and symptoms were quite satisfactorily determined. It occurs in the higher altitudes and its sypmtoms are: swelling of the brisket, cough, dilated heart, enlarged liver, and generalized dropsy. It is in substance a heart exhaustion from failure of acclimatization in high altitudes. Medical treatments have failed but shipping affected animals to lower altitude will save some of them. Animals raised in low altitude, and their progeny, are most susceptibe. For further information write to the Agricultural College for bulletin on "Brisket Disease."—G. H. G.



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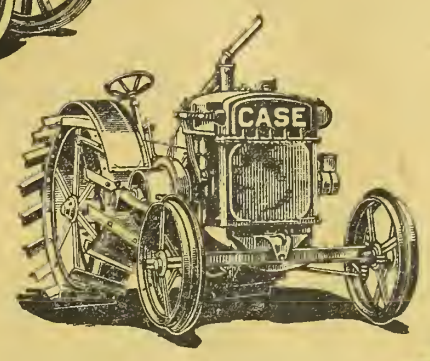
To avoid confusion, the J. I. CASE THRESHING MACHINE COMPANY desires to have it known that it is not now and never has been interested in, or in any way connected or affiliated with the J. I. Case Plow Works, or the Wallis Tractor Company, or the J. I. Case Plow Works Co.



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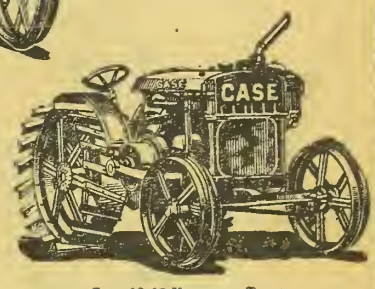

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It would cost us less to use iron castings in many places instead of the drop-forged steel we do use; but it would cost *you* far more for replacement of broken and worn out parts.

We could save a lot by using cast-iron open gears instead of cut steel gears running in oil-tight housings; but later on, you'd pay many times the difference for extra parts, and lose still more by delay.

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KEROSENE TRACTORS

Colorado State Farm Bureau News

Matter appearing in this department relates to the activities of the State and National Farm Bureaus, including official communications from the Colorado State organization and general reports, calculated to keep farmers informed regarding progress of this great educational movement.

W. G. Jamison of La Veta, who besides being president of the Colorado State Farm Bureau is also a member of the executive committee of the American Farm Bureau Federation, recently attended meetings in Chicago and Washington. At the Chicago meeting the permanent organization was formed by the federation, as a result of the ratification by 28 states of the plan formulated at the November meeting. The states ratifying were as follows: New Jersey, Minnesota, Massachusetts, Illinois, Iowa, Colorado, South Dakota, Missouri, Kentucky, Michigan, California, Georgia, Arizona, Wyoming, New Hampshire, Vermont, Utah, Indiana, New York, West Virginia, Nebraska, Ohio, Idaho, Oklahoma, Maryland, Conneticut, Kansas, Texas.

The total membership is estimated at 700,000 with a budget for the first year of approximately $200,000.

Permanent officers were elected as follows: James R. Howard, Clemons, Iowa, president; S. L. Strivings, Castile, N. Y., vice president. J. W. Coverdale of Iowa, was appointed secretary.

Executive committee members were selected regionally as follows:

Northeastern Section: E. B. Cornwall, Middlebury, Vermont; E. F. Richardson, Millis, Mass.; H. E. Taylor, Freehold, N. J.

Far West Section: W. H. Walker, Willows, California; W. G. Jamison, La Veta, Colorado; John F. Burton, Garland, Utah.

Middle West Section: O. E. Bradfute, Xenia, Ohio; Chester H. Grey, Nevada, Mo.; Howard Leonard, Eureka, Ill.

South Section: Grey Silver, Martensburg, West Va.; James W. Morton, Athens, Georgia; George Bishop, Cordell, Oklahoma.

The directors voted to pay the president $15,000 a year and allow $3,000 a year for traveling expenses. It was decided that the president should be the foremost executive and leader of the organization. The executive committee employed the secretary and determined on Chicago as headquarters.

It was voted to change the manner of paying dues from the present method of ten per cent of all Farm Bureau membership fees under the state organization, to 50 cents per member, this change not to go into effect sooner than January 1921. Under the constitution, provision is made that no amendments will be effective until approved by a majority of the member states.

A ruling was made that dues be paid on the basis of paid membership dues by members in the County Farm Bureau belonging to the state association on the first day of each quarter of the year, starting April 1st, 1920.

A Business Organization.

The executive committee was instructed to set up without delay a business organization, under direction of trained experts, and create bureaus or divisions as follows:

1.—A bureau of transportation which will look into transportation matters by both rail and water, to the end that we may secure rates on farm products which shall be fair compared with rates on other commodities, and which shall give to the farmers of the United States ocean rates which will enable him to compete on a fair basis with the farmers of other nations of the world.

2.—A bureau of trade relations which shall investigate our dealings with foreign countries to the end that the interests of agriculture may be promoted.

3.—A bureau of distribution which shall make a thorough study of the distribution of farm products.

4.—A bureau of statistics which shall inquire into world conditions which influence supply and demand, and which shall especially study the mechanics of prices.

5.—A legislative bureau which shall have to do with matters of National legislation which affect farming and farmers.

6.—A bureau of co-operation which will make a special study of co-operative methods which have been found to be successful both here and in other countries, and which shall draw up standard forms for co-operative enterprises of various kinds and aid state federations to promote local co-operative enterprises on thoroughly safe and truly co-operative lines.

Digest of the Resolutions.

The resolutions set forth in very definite terms a pledge of full support to the Constitution of the United States, condemning radicals and reactionaries.

Increased production is essential to national well being. We stand for higher individual efficiency. In determining a compensation, we believe that the result of the day's work, rather than the hours thereof should be of paramount importance.

We pledge the farmers of America to the largest possible production consistent with good husbandry, with a view of relieving the world's dire necessities and invite the workers of all other industries to join us in this spirit of service.

We declare the strike no longer justifiable and no longer to be tolerated by a long suffering public.

We favor the creation of such arbitration boards or courts, with power and authority, to adjust controversies between labor and capital as shall safeguard the rights of the parties directly interested, as well as the wefare of the general public.

Realizing the need of trained workers and a healthy citizenship in all walks of life, we urge such general course of instruction of our young manhood as shall call attention to and give promise of relieving general health conditions throughout the country.

We hail the American Legion as one of the most important factors in the life of America, pledge our support in its great work and welcome it to comradeship.

We pledge the full strength of this institution and its individual membership in support of the good roads movement throughout the country.

Deploring the waste and extravagance of the present day, we urge the necessity for a return to the more humble and prudent practices of the past.

Our country needs stability and the brakes must be applied to secure that much desired result. Waste breeds recklessness, a lack of responsibility, and is the best aid to the profiteer whose selfishness knows no country and who has no regard for the rights of masses.

We recommend legislation providing that the presence of all substitutes for virgin wool in fabrics and apparel purporting to contain wool, shall be made known.

We recommend that a committee be appointed to confer with the internal Revenue department in working out a simplified form for income tax returns, for farmers.

We definitely and emphatically oppose the proposed legislation to levy a tax of 1 per cent on land holdings in excess of $10,000.

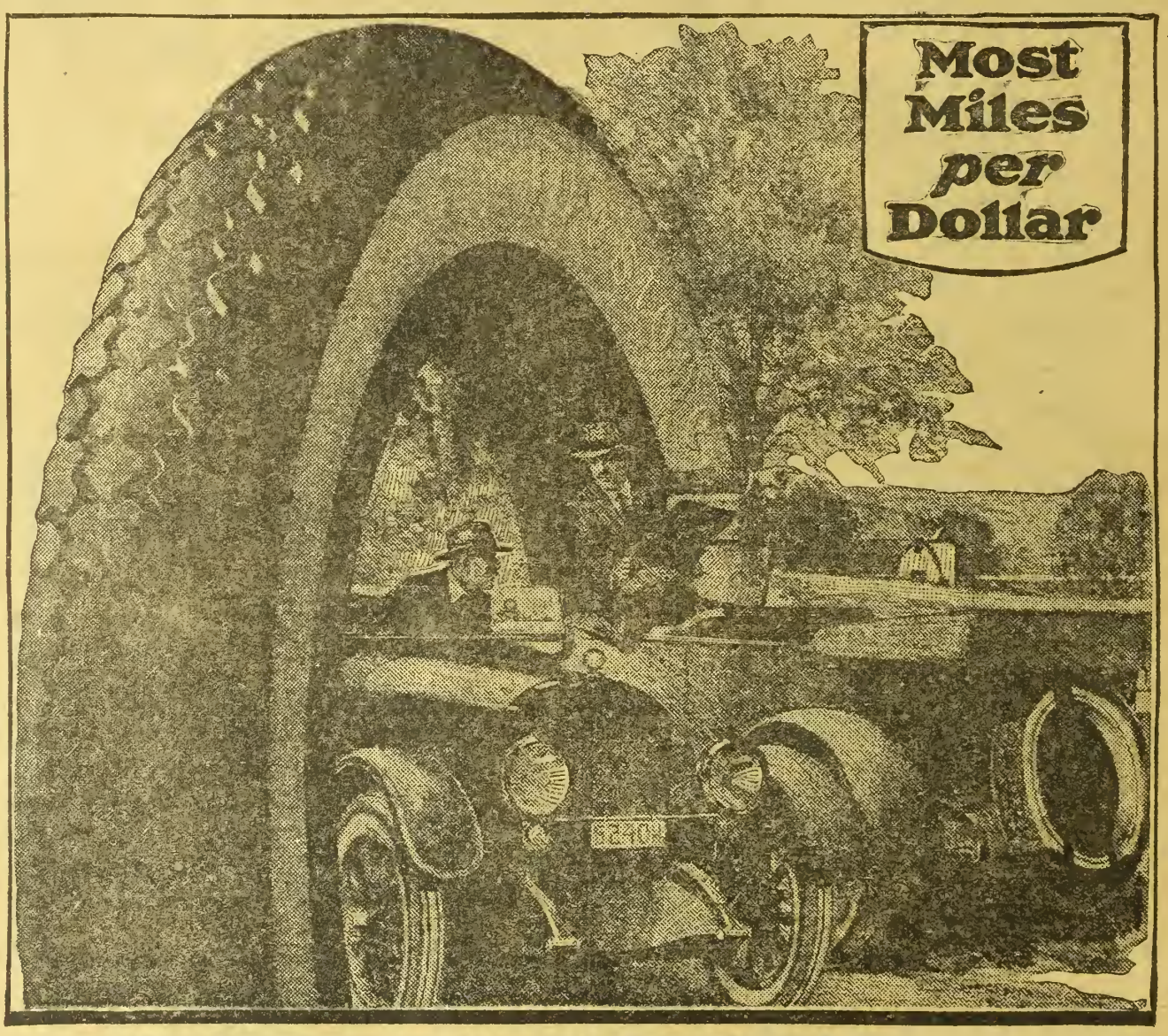
We demand for agriculture, at the hands of state and national legislative bodies, the privilege of collective bargaining.

We insist that in all tariff legislation agriculture be given equal consideration with other industries.

We wish the American people to definitely understand that the organization self-styled "The Farmers' National Council" has no authority to speak in behalf of the farmers of this country. Any and all efforts on the part of The Farmers' National Council to ally the agriculturists of America with the radicals in the industrial world is hereby denounced.

By way of encouragement to Colorado Farm Bureau members we wish to cite from the report of the treasurer of the Iowa Farm Bureau Federation for the year 1919 the fact that the total receipts were $221,467; total disbursements, $120,742.08; cash on hand January 1st, 1920, $100,725.62. The Iowa and Illinois farmers are thinking and dealing in big figures these days.

Enclosed you will find my renewal for Western Farm Life for five years. I find your paper to be wide awake and find it a great help, as it has so much practical information along agricultural lines as well as stock improvement. We were very much pleased to learn from President Jamison that you would soon commence to give us the State Farm Bureau news. We always enjoy reading the activities of old Put.—E. G. Duling, Trinidad, Colo.



Part of the "Good Roads" Program

WHEREVER men and cars meet, "good roads" is pretty sure to be discussed.

You want good roads chiefly because they improve farm conditions, facilitate the use of car and truck, and because they will increase the life of car and tires.

The Firestone cord is part of the program because it gives you most miles per dollar. It is the tire that led the industry with the new standard oversize last year. It has made good as "the best buy" in tires, because of its unequaled performance records.

The new standard oversize means more rubber and cord, more air space, better riding, better traction, and much more mileage.

Firestone cord tires are made by workers financially interested in the business as holders of its common stock. They form a practical industrial community; dedicated to low cost transportation—the most for the money in tires.

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Potatoes Under Irrigation.

Practical advice and suggestions regarding the growing of potatoes in Utah is given in a bulletin on "Potato Production" by George Stewart, Utah Agricultural Experiment Station and is applicable to practically all of the inter-mountain irrigated sections. Following is quoted from the bulletin:

Preparation for Irrigation.—Long before the plowing season approaches, land should be prepared for irrigation. This is not as simple as it may seem. In the first place head-ditches for delivering the water and the necessary distributing ditches leading out from these must be made. Since potatoes will, in practically all cases, be irrigated by the furrow system, it is necessary to determine first the direction in which water is to run. Ordinarily this problem is sadly neglected. Because many of our farm lands slope in two or more directions, it is possible to run furrows in any one of several directions: straight down the field from end to end, straight across from side to side, or at varous diagonals. Since potato roots offer little resistance to washing, the slope ought not to be exceptionally steep. Badly rutted furrows permit rapid evaporation and also render both cultivation and harvesting inconvenient. Besides, such a practice is also responsible for the carrying away of the finest particles which are either organic matter, or the soil particles richest in plant-food. Neither must the slope be too gentle, for this will encourage flooding across from one furrow to another, thereby leaving the ground too wet for potatoes.

Sometimes the land is naturally uneven or has been made so by silt deposits near the inlet head-ditches on alfalfa or other fields that have been cropped for a long period without plowing. Erosion channels and "dead furrows" too often give an uneven surface in many of the best fields. The wise plowing of "double" furrows, the proper dragging after plowing, and the judicious location of distributing head-ditches will usually overcome slight irregularities of surface. If, however, the land is badly roughened, it is highly profitable to level with plow and scraper before plowing. This not only saves labor in irrigation but enables the irrigator to distribute water evenly, thereby incresing the efficiency of both land and water. After any considerable filling of low places, enough time should elapse before plowing to allow the loose earth to settle to its permanent level. This avoids low places that will form pools during irrigation.

Manuring.—Farm manure for potatoes may be applied to a previous crop such as corn, beets, or garden stuff. It may be added as a thin coating after beans or on alfalfa, or a grass sod previous to breaking. Another practice that is gaining favor among successful growers is the fall or winter application of manure on fall-plowed land. Turning under in the fall is preferred, but to leave the manure on the plowed ground all winter to be worked into the soil in spring with a disk is also counted satisfactory. If the land is not fall plowed, it is still good practice to apply the manure in the fall or during the winter, even on top of snow. Unless the land is steep and compact, so badly eroded as to form channels, or frozen under the snow there will be little loss from the carrying away of manure in the run-off when the snow melts. Land manured in this way is best plowed as early as possible in spring.

If for any reason fall or winter application is not made, the manure should be added at the earliest possible time in spring. It is also advisable not to use manure containing much coarse straw or cornstalks for spring applications unless no other manure is available. The turning under of coarse manure at the same time that the potatoes are planted is still more uncertain, especially should a dry period follow planting. Poor stands and delayed growth are likely to result. Besides, potato scab is encouraged by an abundance of coarse manure. Finally, irrigation and cultivation are more difficult than when the manure is sufficiently decomposed to be readily incorporated with the soil particles.

Moderate quantities of manure have given better results for ordinary potato crops than either very light or extremely heavy applications. Truck farms sometimes apply 40 to 60 tons of fresh manure to the acre, but 15 or 20 tons is likely to be more satisfactory for general farming. The manure should be scattered over the land at the time it is being hauled out and spread as uniformly as possible. In these respects, manure spreaders are more efficient than hand labor. Making small piles to be scattered at another operation is wasteful of labor. Since this practice prevents uniform distribution, it is also wasteful of manure. Much of the fertilizing elements is leached into the soil directly beneath the pile, leaving only the resistant remnant to be scattered, especially if these piles are left for any great length of time. Horse and sheep manures deteriorate more rapidly in piles than do cattle and hog manures.

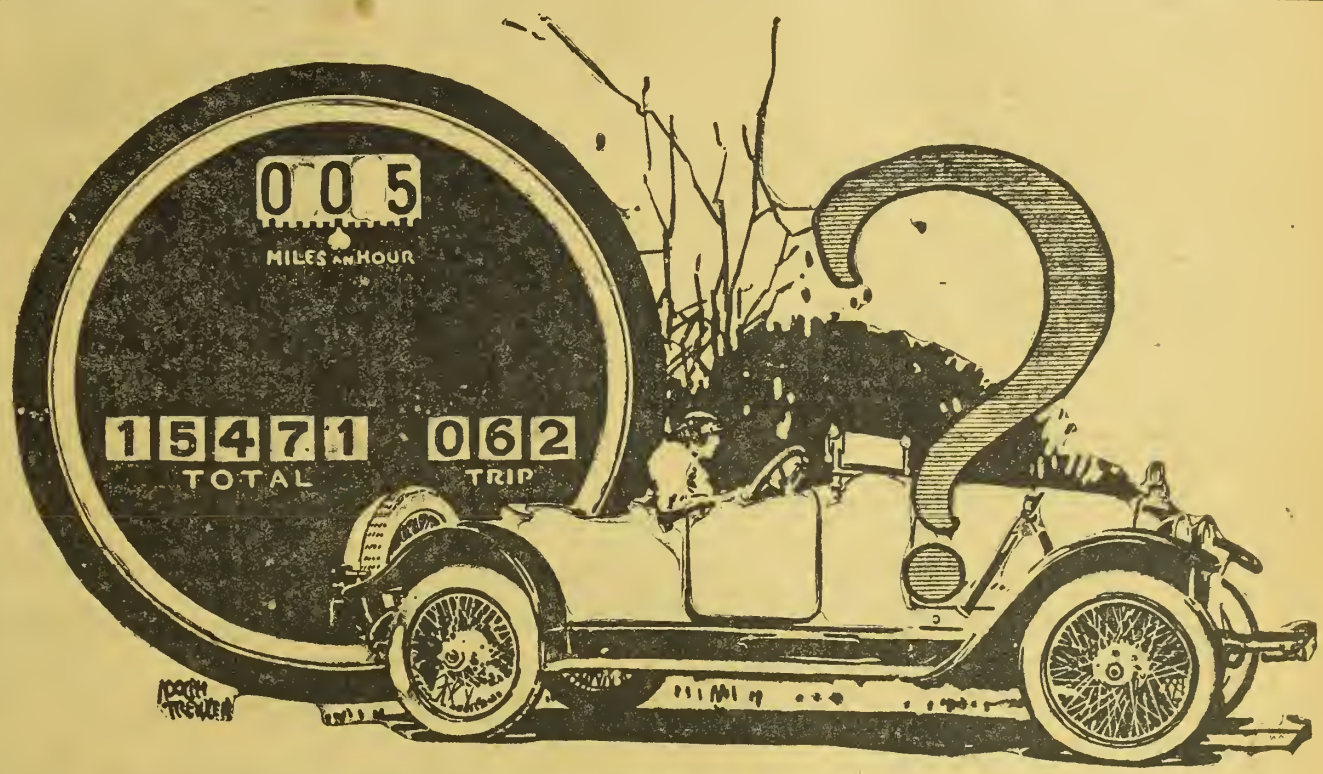
Breaking.—For potatoes following alfalfa, the land should be broken in the fall to permit settling and to allow time for partial decomposition of the coarse roots. The practice of crowning before plowing is spreading. This consists of plowing to the depth of three or four inches to cut off the roots just below the crowns. When these crowns are thoroughly dry, the plowing is done at the depth desired. Adherents of this practice maintain that fewer of the roots begin growth to cause trouble in intertillage the next season. Frequently crowning is done in the fall and plowing early the next spring. Where breaking cannot be done until spring, it needs to be done thoroughly and just as early as the soil condition permits. It may also be necessary to use compacting implements to conserve moisture and to promote decay.

Plowing should take place in the fall unless this is markedly inconvenient. With a late-planted crop such as potatoes it is easy to neglect fall plowing even when other work is not crowding. With potatoes as with beans and beets, this should not be allowed to happen except under unusual circumstances. If for any reason plowing is to be left until spring it is advisable in the fall to work stubblue and other residues into the soil with a disk. This is also a good practice when manure is applied in autumn and is not to be turned under until spring.

Plowing, like manuring, is best done early whether in fall or spring. In no case should potatoes be planted immediately after plowing. Poor stands are likely to result unless enough time is allowed for the soil to settle into a firm seedbed. Shallower plowing often fails completely to cover manure or plant residues, whereas deeper plowing is likely to be too expensive in both time and horse labor.

Fall-plowed land, except where the blowing of the soil is troublesome in winter, should be left rough without harrowing or dragging of any sort. This gives the frost a chance at the clods, insects, and plant diseases. Fall, winter and early spring rainfall can also pass at once into the subsoil there to be stored for the growing season. Because fall-plowed land will settle enough during winter, it is not necessary to use packing implements such as the disk or culti-packer unless this is de-

(Turn to Page 28.)



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Feeds For the Dairy Cow.

How about feed crops for the dairy cow? Probably outside of the hay crop which is usually well taken care of in the middle west, the matter of succulent feed requires the most attention. The ideal feed is a grass pasture for the summer. In most any section it is possible to grow some good pasture mixture. This is especially applicable under irrigation. A good pasture will support from 1 to 2 cows per acre. This brings good returns where the right kind of cows are kept. It will not stand heavy pasturing the first year. Frequent watering helps to keep it growing and makes it produce more feed. Nothing will tend to stimulate milk production so well as good grass.

Very frequently the farmer does not feel that he has land available for pasture. In such cases, some other good succulent feed needs to be provided for early summer green feed; a soiling crop of rye will help. Corn supplies a place in this respect. It can be fed green from the field. Such feeds as kale are valuable for early feeding. Kale has not been grown extensively in the middle west, but there is no reason why it could not be grown where cabbage will grow.

Of course, the silo is the best means of providing succulent feed for winter use. Not every farmer is in a position to own a silo, either because of a small herd of cows, or for some other reason. For that condition there is nothing better than an acre, or several acres of roots, such as mangel wurtzels. They yield heavily and supply the wants for succulence in the cow's ration very satisfactorily. Roots are not used as much as they should be. For keeping up milk production they are very valuable. In the higher mountain sections they yield a big tonnage and no other succulent feeds are available.

Dairy cows will not produce their maximum without a succulent feed. These crops mentioned will under ordinary conditions, prove more efficient than an expensive grain ration. Put in enough roots to supply each cow with at least 1,000 pounds per month for the winter. It will certainly pay in helping to reduce the cost of production and keeping up the milk flow.

Sudan grass is important for the farmers in the non-irrigated sections, who need a drouth resistant and quick maturing hay crop. This crop is relished by all classes of hay eating animals and it has no bad effect on the digestive organs. It is juicy and sweet, though rather coarse. On irrigated lands it is apt to be more stemmy and coarse than on the dry lands. As to feeding value it compares with timothy, being a little lower in protein than barley hay or rye hay. It makes a much greater yield per acre than these hays and is consequently a more economical feed, as well as a surer drouth resister. It has not proved very satisfactory as a pasture crop in Colorado.

We are often asked about the grain sorghums as dairy feeds. Nothing excels them in sections where these crops are better adapted than corn. Kafir, milo and feterita are the principal grain sorghum varieties grown in southeast Colorado and northeast New Mexico. They take the place of corn for grain and roughage and are far safer than corn in the hotter, drier regions. They make practically as good silage as corn and when allowed to fully mature and harvested for grain, answer every purpose that corn answers.

Sweet sorghum, or cane, is another important feed crop, either for hay or pasture, that should not be overlooked. When intended for pasture thick seeding is necessary, to keep the stalks from getting too coarse. Cane is a quick growing crop and may be fed green, or cured either in the stack or bundle, and it also makes good silage.—H. A. L.

Feeding the Dairy Cow.

Underfeeding a dairy cow is a waste of feed, effort and money invested, yet this is one of the most common mistakes that dairymen make. Some dairymen are born poor feeders. Some acquire the practice of stinting their cows, thinking it is economy, while others have this misfortune thrust upon them because of the shortage and high prices of feed. But when we consider that dairying is primarily a matter of converting feed into milk, the fallacy of such a course is apparent.

To enable her to produce to full capacity a dairy cow should have, not only a sufficient amount of feed, but a ration that is palatable and containing the elements necessary to produce milk and butterfat. There is less danger of loss in overfeeding a dairy cow than any other animal, because one of the chief characteristics of the dairy cow of quality is to make use of all the feed given her. If conditions are such that immediate returns are not possible, she stores it up in the form of bodily strength and fat which will be accounted for in her next lactation period. This applies not only to the producing cow, but to the dry cow as well. If she is well fed while dry and she begins her year's work in good condition, that extra feed will show up on the cream check.

Underfed, impoverished cows are always unprofitable. The less number of cows kept to produce a given amount of milk, the greater the profit there will be for the owner. In other words, why keep two cows when the same amount of feed given to one will produce as much as both. By proper feeding, two cows can be kept in one hide.

This is illustrated by a two years' record of a herd that changed owners at the end of the first year. The herd consisted of nine cows which produced 1,409 lbs. of butterfat the first year. The second year they produced 2,717 lbs. of fat—the same cows, but a different owner. The records do not show the difference in profits, but without doubt an increased production brought increased profits and greater satisfaction to the owner.—Western Office Dairy Division U. S. D. A.

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That means from $36.50 to $182.50 a year—and not only for the first year but for every year the separator continues in use.

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It should always be remembered that the cream separator saves or wastes in quantity and quality of product, and in time and labor, twice-a-day every day in the year.

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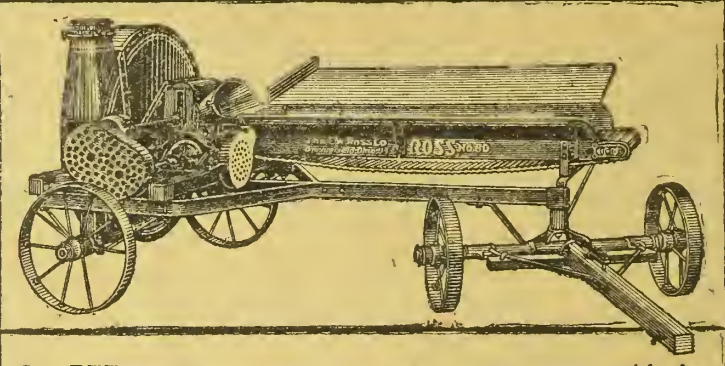

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How I Broke Her Record.

There are some men who can tell whether a cow is worth testing or not, and some can't. I remember one time getting instructions from the Agricultural College to call at the farm of a man who had written them for advice in his dairy operations. I called at the very earliest opportunity. I found a herd of 40 head of cows, a good barn, but some of the other equipment was meager. There was no silo and no preparation for records or testing. I studied the situation over and advised that a scale for weighing the milk be obtained at once and a record kept of the indviduals of the herd; for I had an idea that there would be more money made on about 25 of those cows with the other 15 disposed of than was being made by the entire 40 head. The The man had realized that there was a leak somewhere, but did not know just how to locate it, so he was in a receptive frame of mind. He said he would bring a scale "home with him tomorrow." I told him I would be there in the afternoon with some blanks for record-keeping and we would start the record.

I was there and found he had hung the scale and was ready for milking at half past 4 o'clock. There was one cow that on my previous visit he had pointed out to me as a cow that was giving seven gallons a day. I believe she was a good cow, but in my own mind I doubted if in her condition at that time she could quite reach seven gallons a day. Well, she was the third cow milked, and I was not hanging around too close when the pail went on the scales. I heard him call, however: "Oh, Mr. Eldredge, come here, is this right?" I walked over and looked at the scale and read it, "13½ pounds." I looked in the pail and there was a lot of foam. I tried the scale with added pressure and said: "What seems to be wrong with it?" "Why," he said, "that is only 13½ pounds." I said: "Yes, that seems about right." "Well, how many pounds to the gallon?" I answered: "Eight and six-tenths." He studied for a minute and then slowly poured the milk into the can, then went and looked at the cow and came back to where I stood, saying: "She is chewing all right, her eyes are bright, seems to be all right, but I thought she was giving seven gallons a day," and he went slowly on in a deep study.

Well, after everything was going pretty well that afternoon I left and went back ten days later. The old favorite cow was plugging along fairly steady at about three gallons a day, and it looked like that man had found the leak. I have visited him several times since, but his herd has grown smaller. If he will build a silo now I think his salvation as a dairyman will be assured.—Ben R. Eldredge, Dairy Field Agent for Utah.

Are You Paying for a Silo?

If you have a dozen head of cattle or more and do not have silage to feed them, you are losing enough money each year to pay for a silo. Many dairymen who now have silos say that it paid for itself the first year by saving in cost of feed, the increased flow of milk, and the improved condition of the livestock. Dairy cows will eat only about one-third as much alfalfa when they are receiving a full feed of silage. Silage will cost about one-fourth as much per ton as alfalfa hay, but the combination of the two will bring better results. A few tons of alfalfa will pay for the silo. Build a silo and let the livestock pay for it.

Here are ten good reasons why a silo should be on every farm where livestock is kept:

1. The silo preserves the palatability and succulence of green crops for winter feeding.
2. It conserves the entire crop.
3. The silo increases the livestock capacity of the farm.
4. Silage can be fed in summer when pastures are short.
5. Silage is relished by dairy and beef cattle and sheep.
6. It is digestible and aids in the digestion of other feeds fed with it.
7. Silage reduces the cost of production of milk, beef and mutton.
8. It will increase the milk flow.
9. Silage promotes the health of the herd.
10. The silo provides an economical method for the storage of roughage.—J. E. Dorman, in charge Western Dairy Division U. S. D. A.

Logical.

"I want some good current literature."

"Here are some books on electric lighting."—Baltimore American.

Plain Mary, World's Champion Jersey, 1,040 pounds of fat in one year. Owned by F. W. Ayer, Bangor, Maine.

New Jersey World's Record.

Where is the man who said that an ordinary farmer, under everyday working conditions, cannot make a world's record with his cows? Thrice within a year this theory has been contradicted by Jersey cows in working farmers' hands. First by Viva La France, an Oregon farmer's cow which made the 4-year-old and breed record of 1,031 pounds fat; then by Lulu Alphea of Ashburn, a yearling which made 800 pounds fat for her owner, who only two years before had graduated from grades to purebreds.

The third and latest case is that of Plain Mary, a registered Jersey, that found her way into the barn of two farmers who had decided to try their luck with purebreds. Their cow has made 15,255 pounds milk and 1,040 pounds of butterfat in one year, and gained the title of world's champion Jersey. She is now owned by F. W. Ayer of Bangor, Maine, who bought her at a fancy price from Kelly & Cossar of Winn, Maine, the men who owned the cow until the sixth month of her present test, at which time Mr. Ayer bought her. She was sold on condition that she remain at the old home farm to finish her record and she will now be sent to her new home in Bangor.

Mary started her test at 8 years and 11 months of age, and during the first six months she averaged more than 100 pounds of butterfat per month. From then on she had reverses and did not make as large a record as expected.

The country in which she lived is subject to severe extremes of weather and the setbacks were due to a weather variation of 34 degrees in one day in June and then in December she was subjected to 45 degrees below zero in an unheated barn. The farm is located in an unprotected spot on the shores of the Penobscot river and Mary had the benefit of all the fresh air that blew across fields of ice and snow. In spite of her handicaps she finished strong and averaged 28 pounds of milk a day during the last month of her record.

Plain Mary's record is more of a tribute to official test work than it is to breeding, as she does not belong to any particular strain. She reverts to St. Lambert blood chiefly, but no plan of breeding is brought out in her pedigree. As an individual she is much better looking than her picture. Cattle experts who have seen her say she is an almost perfect specimen of the producing dairy cow. She has plenty of barrel, strong constitution, good udder and teats, a very fine hide and every evidence of "dairy temperament," or willingness to work.

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Because:

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The increases in the general cost of raw materials and labor have been practically offset, in the case of Primrose Cream Separators, by the reduced costs of unit production and distribution, due to the increased demand.

Therefore the prices of **Primrose Cream Separators** still stand at the old figure of 1918—considerably less than the present high-priced separators. Make the most of this rare opportunity. See your International dealer.

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Fattening Growing Barrows.

On November 11th, 1919, seven pure-bred Duroc Jersey barrows averaging 84.43 pounds and average age of about 170 days, were placed in the feed lot at the Wyoming Station.

These barrows were following 20 head of growing cattle that received a grain mixture of about 27 pounds of shelled corn daily. In addition to this the pigs were fed free choice on self feeder containing shelled corn and meat meal tankage for 38 days. It was observed that the pigs failed to work over the manure thoroughly and recover all the waste corn and their feed allowance was cut to 20 pounds of shelled corn daily and about 10 per cent as much tankage as corn.

Summary of results for 70-day feeding period: Total corn consumed, 1,734 pounds, total tankage consumed, 104 pounds; total feed consumed, 1,838 pounds; total gain in weight for 70-day period, 543 pounds; average daily gain per pig, 1.11 pounds; corn consumed per 100 pounds gain, 319.34 pounds; tankage consumed per 100 pounds gain, 19.15 pounds. Total feed consumed for 100 pounds gain, 338.49 pounds. With tankage costing $105.00 per ton and corn at $61.50 per ton, and hogs at $14.50 per 100 pounds, the feed cost of 100 pounds gain was $10.81. Gross profits on the group of seven pigs, $20.04. Gross profit per 100 pounds gain $3.69. Gain per bushel of corn self fed 17.56 pounds.

It will be observed that these pigs consumed about sixteen times as much shelled corn as tankage. It is probable that the undigested part of the cattle manure contained considerable protein constitutents which helped to balance the corn in the pig ration. Results are gratifying in that they show that fattening pigs can make excellent use of the undigested part of the grain in following cattle. This is further evidence of the advisability of following cattle with pigs when the cattle are fed whole corn.—F. A. Hays, Associate Professor Animal Husbandry, University of Wyoming.

Urges Trial of Field Peas On the Dry Lands.

The little work that has been done in the county with field peas is encouraging and this should be enlarged and continued.

From observations in this and other counties the writer is ready to recommend that we give them as careful and thoughtful a trial as we did the Pinto, Mexican and other field beans. They have yielded at the rate of 300 to 400 lbs. of threshed peas per acre and when planted with oats or barley have cut three-fourths to one ton of cured hay per acre. This hay takes the place of alfalfa or clover in balancing our feeds. The acreage of field beans dropped approximately 95 per cent last year due to the low price for them nd also the destruction that occurs to bean land during high winds because of the movement of soil. The latter can be lessened providing it is not too dry for fall listing.

The method of harvesting beans contributes largely to the soil movement by winds. In cutting them the knife blade of the cutters loosen 2 or 3 inches of the top of the soil. This loosened soil "blows" badly, as it is commonly expressed. In harvesting the beans the entire plant and some of the tap root of the bean stalk are hauled off of the land, leaving no stubble to help prevent soil movement.

With the field pea the growing and harvesting are different from several standpoints. In the first place, field peas will aid greatly in the seasoned distribution of labor, in that they can be planted late in March and during April with good success. The San Luis Valley farmers which have been interviewed by the writer say that early planting is essential. Whether that holds good in our county is to be demonstrated. Most of those that have been planted in the past were planted in May. Since they are planted early they are harvested early, especially if cut for hay, while the bean must be planted late, after any danger of frost is past and must be harvested before frost in the fall. Beans always compete for attention at the same time that corn must be cut for filling silos and for fodder.

Second, the field peas being planted broadcast or in rows 6 to 8 inches apart requires no cultivation as beans do, and do best if planted in some stubble ground left over from the past season and which has been disked to conserve moisture while beans should be planted on plowed or listed land.

Third, the field pea leaves a stubble which will prevent soil movement. The mower can not be run close enough to the soil to get all the vines, and the oats or barley stubble is also left for protection to the soil.

Fourth, they enrich the soil as much as beans do.

Fifth, they are equally as drouth resistant and will grow at higher altitudes than beans.

Sixth, they encourage the keeping of more livestock, the forage yield being greater than beans and the dried, shelled peas are more palatable to the stock than beans.

Considered from every standpoint, then, they warrant our careful consideration as an addition to our irrigated as well as our dry land agriculture.

The cost of seeding per acre is the only chief objection which is not serious, when we consider that we save cultivation costs. Sixty to seventy-five pounds should be planted on dry land and one hundred to one hundred and fifty pounds on irrigated lands.

It is the writer's opinion that we should not give up beans but rather that we divide the acreage usually planted to beans equally between the two.

Ask the seed men for the white or green field peas which come from the San Luis Valley. The price is usually 5c to 6c per pound.

Plant them in April or May on stubble ground, if possible.

W. H. LAUCK,
In El Paso County Democrat.

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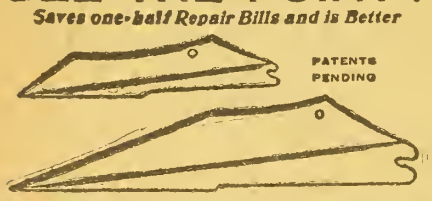

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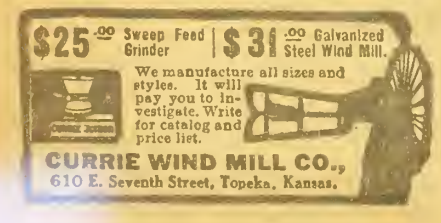

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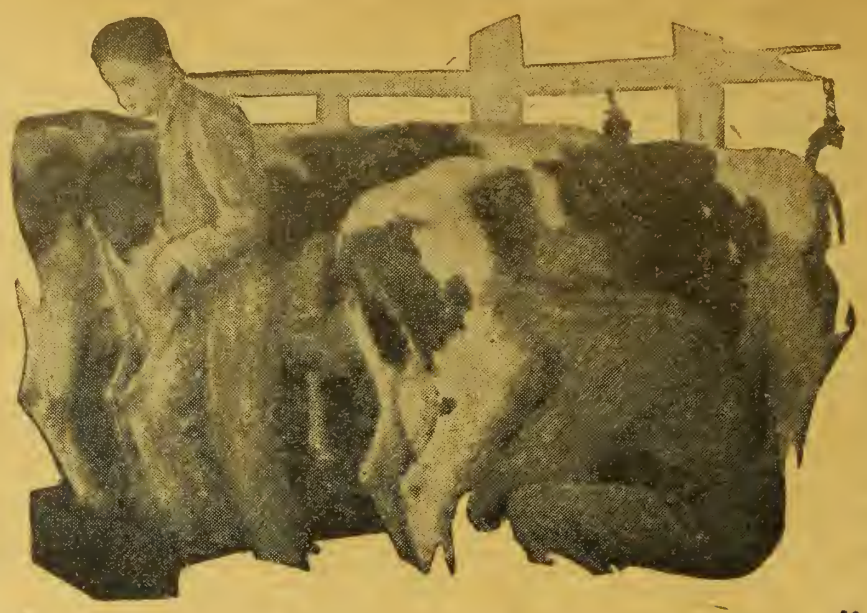

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Building a Purebred Herd.

Many beginners in the purebred livestock business lose heart because they do not meet with immediate success. Losing a calf, a brood sow, or, a colt discourages them to the extent that they are ready to sell out at a sacrifice and quit the business. In addition these men are often a detriment to the industry by spreading the news of their hard luck among friends and neighbors, always placing the blame on the animals in question and never upon themselves. They will tell you that there is no money in such business and that certain failure stares you in the face if you dare attempt it.

It is not to be denied that misfortunes do occur in such business and frequently they come in the early stages of the game because of a lack of experience on the part of the beginner, and, unfortunately it is at this stage that a man is most easily discouraged. However, if he has foresight enough to see the thing through and profit by his losses he will eventually be successful. Among the men who are counted as as big breeders of livestock today there are very few who have not at some time been badly discouraged over their efforts, and yet they were determined to stick by the guns with the result that they eventually come through with flying colors. T. G. Twyman, Poland China breeder of Grand Junction, Colo., belongs to the latter class.

Five years ago he made his first purchase of purebred Poland Chinas, and, it consisted of three young sows brought in from Missouri. When these sows were unloaded at the ranch it is needless to say that his hopes and aspirations ran very high. But at farrowing time his troubles began. The first sow to farrow brought two living pigs, while the second sow died in attempting to farrow without producing a single, living pig. The third sow farrowed several dead pigs but only one that was alive. The total of three pigs from the three sows was not very encouraging for a beginner, and, in addition the loss of one sow plus a considerable veterinary bill that had been incurred in attempting to save her.

Mr. Twyman decided that two of the three pigs would be for sale but the local people were not much impressed with purebred stock of any kind and it was just six months before they were finally disposed of, and, even then at a price that would be a disgrace to most any breeder of such stock today. The third pig was kept on the ranch to replace the sow that was lost, but, she proved to be a non-breeder and went to the local butcher. Following this experience the situation became more favorable as far as raising the pigs was concerned, but, the big problem turned out to be in disposing of surplus stock and for the first three years the prices received were very little above that of grade stock. Determined to win he stuck to the game because he had a very definite goal in mind and presently he found things turning out as he had originally hoped they might.

At present Mr. Twyman is unable to fill the orders that come to him for breeding stock and his herd consists of twenty brood sows and two excellent boars. Last year he shipped a foundation herd to a man in Connecticut and this man was so well pleased with the stock that he ordered two more animals to be shipped soon after the arrival of the first ones.

This breeder is a little different from the ordinary man in that he is an employee of a local business house which takes all of his time from eight in the morning until six in the evening and yet he hires very little help on the ranch, employing a man only during the rush season and for occasional add jobs. He drives to and from the ranch morning and night and with the assistance of a good wife takes entire care of his herd. After getting started in a small way two years ago he decided to keep a hired man on the place during the day to feed and take care of the hogs, but carelessness on the part of the hired man resulted in the loss of a very high priced herd boar. From that time until the present Mrs. Twyman has taken care of the Poland Chinas while the husband is absent during the day. One of the three sows purchased originally is still in the herd and with the exception of her first litter she has averaged more than ten pigs to the litter for each farrow.—L. M.

Find herewith enclosed my check for $1 renewal of Western Farm Life for two years. We are very well satisfied with your paper and keep getting more on the side of the farmer and common people.—W. D. Rule, Lamar, Colo

Western Sir Koopman, sold by the Western Holstein Farms to Curtis & Sons, Sedalia, Colorado.

Curtis & Sons Buy a Bull.

Hall Brothers, proprietors of the Western Holstein Farm, Denver, report the sale of Western Sir Koopman, a great young show bull to C. W. Curtis & Sons of Sedalia, Colorado. These people had been in the market for some time for a high class sire of the Holstein Friesian breed to head their herd and after inspecting the offerings of various herds decided that Western Sir Koopman was just what they wanted. They asked Hall Bros. to put a price on the animal but they said he was not for sale. However, Curtis & Sons finally offered a check so large that the offer could not be turned down and they got the animal whose picture appears above. Carlos W. Hall, in answer to a question as to the price, said: "Holsteins have been selling high around Denver lately We got a little less than a million dollars for Western Sir Koopman."

This bull has been a persistent winner at the shows and fairs in the last three years and he has been showing steady improvement both as a breeder and a show bull. He was looked over by Col. Robert Haeger a few weeks ago, and this veteran breeder pronounced him capable of winning in America's strongest shows.

His dam is a sister of one of the four cows that won the blue in get-of-sire at the National Dairy Show at Chicago in 1910 and he is also closely related to Sarcastic Lad, the noted St. Louis World's fair grand champion. His grand dam is Dutchland Hengerveld Ascalon with a record of 1,263 pounds of butter from 26,485 pounds of milk. His own dam is the holder of a good 7-day record and is a cow of splendid conformation and still a great producer at 12 years of age. Curtis & Sons are to be congratulated upon having secured such an outstanding young sire.

Value of the Manure Spreader.

In applying manure to the soil it is important to get an even distribution over the field, says F. L. Duley of the University of Missouri College of Agriculture. This can be done most satisfactorily by means of a manure spreader. A spreader is not absolutely essential, however, and if care is taken a fairly good job can be done by hand. That is, if a man cannot afford a spreader he should be all the more dilligent about applying manure. The all-important thing is to get the manure back on to the land with the least possible loss. However, most farmers will succeed in getting more manure on the land when they have a spreader, since it can be kept where it can be loaded as the manure is produced and unloaded whenever a team is available for a few minutes' time. The labor and time saved will soon pay for the spreader. The advantage in using a spreader is not due so much to the saving of labor as to the fact that the manure is spread evenly and in a thin layer so that it will go farther. Where manure is scarce it is advisable to make it cover as much land as possible. The spreader also serves to tear the coarse material to pieces so that it may be readily worked into the soil.

If you give the hen half a chance, she will do you a real service, and will reproduce regularly and freely. A little care often is worth a lot of feed.

Makes Hogs Grow Fast

With corn and other grain at present prices, you can not feed costly grains at a profit. Even if corn and other grains were cheap, you could get **far better results** by feeding pure, rich buttermilk—the feed that "makes 'em grow fast." Semi-Solid Buttermilk furnishes the necessary protein, gets hogs ready for market quicker and cuts the cost of fattening materially. Hogs fed on **Semi-Solid Buttermilk** during winter make as good gains as in summer. It's an all-season feed.

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Hogs fed on **Semi-Solid Buttermilk** are healthy hogs. Do not go "off feed". It keeps them in keen appetite and sound normal health. Nothing better for poultry—keeps hens healthy and increases egg production. Makes 'em all lay.

Semi-Solid Buttermilk is sold in barrels, average weight 500 pounds. One barrel makes approximately 1000 gallons of pure, rich, buttermilk feed. Factories located in nine different states. Try Semi-Solid Buttermilk. Quick results assured. Write today for Free Book on Feeding for Bigger Profits. Order **Semi-Solid Buttermilk** today and get quick results!

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Treatment for Smut Control

SIMPLE AND INEXPENSIVE METHODS EXPLAINED.

J. G. LEACH.

THE smuts of cereals are among the most destructive of plant diseases. The smuts affecting wheat, oats, barley, and rye caused a loss of approximately 133,000,000 bushels of grain in the United States in 1917. The losses in Colorado alone from these smuts amounted to nearly 2,000,000 bushels. Fully 90 per cent of this loss was due to those smuts which can be prevented by careful seed treatment.

Did you ever see mistletoe growing on the branches of a tree? Did you ever see dodder growing on alfalfa? Smut is caused by thousands of very small plants that grow on the wheat plant just like the mistletoe grows on the tree, or the dodder grows on alfalfa. These small smut plants or fungi as they are called produce thousands of small round bodies known as spores which, seen in quantities, appear as a black smutty mass. These spores are the seed of the fungus and the fungus lives over the winter in this form just as the wheat lives over in the form of seed. The smut spores are scattered about by the wind, and threshing machines, many of them clinging to the surface of healthy grains of wheat. When such grain is planted these smut spores germinate at about the same time the wheat germinates, and immediately infect the young seedling. The smut grows up through the stem of the wheat plant but does not show up until heading time when instead of forming grain the diseased plant forms a black powdery mass of smut spores.

How to Prevent Smut.

Seed that have smut spores clinging to their surface when planted are almost sure to produce diseased plants, but if there are no spores present the resulting plants will be free of smut. Since the disease depends upon the presence of spores on the seed at time of germination the logical way of preventing smut is to disinfect the seed grain before planting. Formaldehyde is the best disinfectant for this purpose. Copper sulfate or "blue vitriol," as it is sometimes called, is often used but careful and extensive experiments have showed it to be less satisfactory than formaldehyde. Blue vitriol is often injurious to the seed, is more expensive and more difficult to apply.

Does It Pay to Treat Seed Grain?

Before spending money, time and labor in any undertaking the good business man asks himself the question, "Will it pay?" Will the increased yields obtained as a result of seed treatment be sufficient to pay dividends on the money, time and labor invested? Let us see. Formaldehyde costs 65 cents per pint. One pint will treat 40 bushels of grain. The labor of treating 40 bushels of grain would cost not more than $2.00, a total investment of $2.65. It was estimated by the Office of Plant Disease Survey of the United States Department of Agriculture, that there was an average of 7 per cent covered smut of wheat in Colorado in 1917. Some fields showed as high as 50 per cent smut. Since smutted wheat is a total loss, not to speak of the loss for dockage, it is safe to assume that a field with 7 per cent smut produces 7 per cent less yield than a field free from smut. Assuming that this field produces normally 15 bushels per acre or a total of 450 bushels, there would be a loss of 7 per cent of this or 31.5 bushels due to smut. At $2.00 per bushel this amounts to $63.00. Since the formaldehyde treatment is practically 100 per cent effective we can safely assume a saving of $60.00 on an investment of $2.65. Have you any money invested that pays larger dividends? The above figures are based on an average of 7 per cent smut while many fields had a much larger percentage often running as high as 50 per cent. You can figure for yourself the loss in such fields.

The writer has talked to many farmers, who claim, without a careful examination, that their fields are free from smut but closer inspection in most cases have showed from 3 per cent to 15 per cent. The percentage of smut in a field can be pretty accurately estimated by picking a row at random in your field and counting out 100 heads and then carefully examining these for smutted heads in the 100 will be the per cent of smut in the field. Several lots of 100 should be counted and the average taken to insure extreme accuracy.

Treating Grain to Control Smut.

There are three standard methods of treating grain with formaldehyde. Twenty years of use have shown these to be efficient and reliable. These are: (1) The soaking method; (2) The open tank method, and (3) The sprinkling method. Directions for the use of each of these methods are given below. Select the method best adapted to your conditions and equipment and then follow the directions carefully.

The Soaking Method.

1. Estimate the amount of seed to be treated and purchase formaldehyde (40 per cent strength), one pint for forty bushels of grain.
2. Clean the seed thoroughly by fanning so as to remove all unbroken smut balls.
3. Dilute the formaldehyde at the rate of 1 pint to 40 gallons of water.
4. Put a sufficient amount of the diluted solution into a barrel or tank to immerse one or more sacks of seed.
5. Put seed in gunny sacks and immerse in solution. Do not fill the sacks too full; allow room for agitation of the grain so that each seed will become thoroughly wet.
6. Leave the seed in the solution length of time specified in table No. 1.
7. Remove the sacks and drain, allowing the excess solution to run back into the barrel or tank. Replenish the solution when it gets too low.
8. Leave the treated grain in the wet sacks, for not less than six hours nor more than twelve hours. Place the sacks where they will drain rapidly.
9. Plant immediately or empty the grain and spread out in a thin layer to dry. Drying may be facilitated by frequent shoveling.

The Open Tank Method.

1. Make the formaldehyde solution the same as for the soaking method.
2. Pour the loose grain slowly into the solution in an open vessel. Stir thoroughly and skim off the smut balls.
3. Soak for length of time specified in Table No. 1.
4. Remove the grain, pile, and cover with wet sacks or canvas for not less than six hours nor more than twelve hours.

The Sprinkling Method.

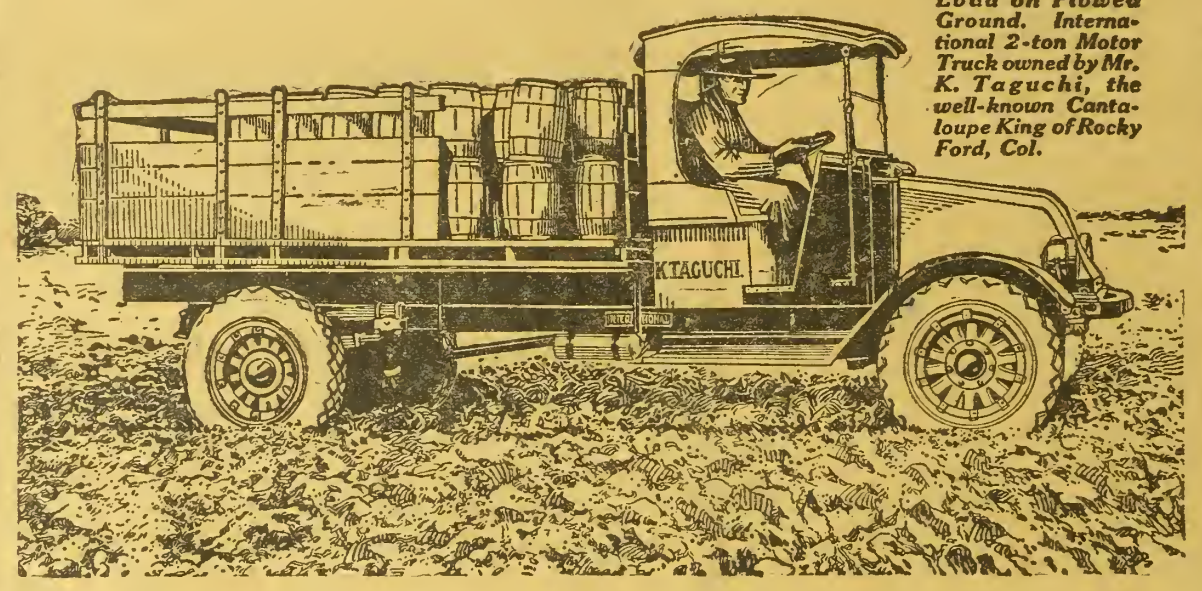
1. Clean the seed thoroughly by fanning so as to remove all unbroken smut balls.
2. Use a clean floor. wagon bed, or canvas in the open.
3. Spread out a few bushels of grain. Make the formaldehyde solution the same as for the soaking method, and sprinkle it over the grain as it is being shoveled around.
4. Sprinkle at the rate of one gallon of diluted formaldehyde solution to one bushel of grain. A garden sprinkling can may well be used.
5. After all the grain is treated, pile and cover with disinfected sacking or canvas for from six to twelve hours.

Spinach has great aperient qualities and is far better than medicine for sufferers from constipation.

Corn Stalk Disease.

The annual reports of cattle dying in the stalk fields are arriving in due form and with equal regularity. It must be true that most people do not remember longer than one year, otherwise farmers would not take a chance on their livetock, under conditions which only last winter proved disastrous. Pasturing cattle in stalk fields in the winter time is dangerous. An exclusive ration of corn stalks and water that is not easily accessible, and of poor quality, means death to many animals. Corn stalks are bulky and take up water like a sponge. Cattle simply overload and die of impaction. This may be prevented by providing a part ration of alfalfa, roots, pumpkins, or other succulent foods and an abundant supply of water. Salt should be accessible at all times. Cattle will not rustle much for water, and unless it is easily attainable they will not drink as much as they should. Snow will not take the place of water for cattle in stalk fields.

Again there is the so-called "corn stalk disease" which is common in eastern Colorado, Kansas and Nebraska. It is thought to be the infectious disease, hemorrhagic septicemia, in which case vaccination should prevent it. Corn from the same field, if cut and fed in the feed lots will be perfectly safe. This disease is still involved in much mystery and until the cause is definitely determined it will pay to be very cautious about pasturing cattle in stalk fields in the winter time.—C. A. C. News Notes.



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In the loose sandy soil of the California orchards and along Florida's sandy forest roads —

On the steep and rocky slopes of the mountains of Pennsylvania, West Virginia, Colorado, and Tennessee, where the up-hill hauling is severest —

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The toughest hauling problems are being solved with International Motor Trucks. They are conquering the difficult jobs. They are proving beyond all question that Internationals are built to do the work and keep going. They are making good where others fail.

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San Francisco, Cal. Spokane, Wash.

Great Decrease in Consumption of Beef.

The United States consumed several pounds less per person of beef in 1919 than in 1918. At the same time, its exports of beef declined 56.8 per cent from the previous year. The United States Department of Agriculture attributes the decline in domestic consumption to high retail prices, and the falling off of exports to the fact that the European countries which took so much American beef during the war are returning to the cheaper sources of supply in South America and Australia. The decrease in beef was so large as to bring down the total meat production 4 per cent lower than in 1918, in spite of the fact that production increased greatly in pork and considerably in mutton and lamb and veal.

Exports of pork and lard in 1919 were unparalleled. The exports were equivalent to 18,000,000 hogs weighing 200 pounds each. A million more hogs were slaughtered than in 1918. Domestic consumption of lard declined to the extent of 2 pounds per person.

The slaughter of calves in 1919 was greater than ever before—1,250,000 head more than in 1918. Veal is not exported and domestic consumption increased about one pound per person.

Twenty per cent more mutton and lamb meat were produced in 1919 than in 1918, but the consumption of mutton and lamb is so small that the increase meant only one pound per person. This source of met supply, which decreased steadily for many years, has been on the upward trend since 1917.

The two factors previously mentioned —restricted beef supply and heavy shipments of pork products—had some effect on the home meat consumption, which in total fell from 150 pounds per capita in 1918 to 142 pounds in 1919, a decline of 5.4 per cent. Last year's figure nevertheless was 12 pounds higher than that of 1917, when the people partly abstained from eating meat.

There was a sharp decrease in lard consumption during 1919, amounting to 2 pounds a person, but there was also a relatively large increase in the consumption of mutton and lamb. As a whole, however, the fundamental reason for the decreased meat consumption in 1919 may likely be found in the high retail prices which prevailed throughout the greater part of the year.

About 2,000,000 fewer beeves were slaughtered last year than in 1918. It is estimated that the cattle yielded 6,571,226,000 pounds of dressed beef in 1919 as against 7,640,712,000 pounds in 1918, which is a decrease of 14 per cent. The lowest yield in the last six years was 5,638,565,000 pounds in 1914, after which there was a gradual rise each year, culminating in the big record of 1918. Last year's total goes back to slightly below that of 1917. Approximately three-fourths of the cattle slaughter is now conducted under government inspection.

Relativey the most striking item of all the meat exports in 1919 was the falling off in beef shipments. Compared with 1918 the decrease was 56.8 per cent, the respective totals being 728,236,000 pounds in 1918 and 314,381,000 pounds in 1919. Beef exports from the United States, however, have been almost wholly coincident with Europe's war needs. The trade, it is predicted, will revert to the sources of cheaper beef from South America and Australia.

Home consumption of beef decreased 11.7 per cent in 1919.

A million more hogs were slaughtered last year than in 1918 and 13½ millions more than in 1917, and although 2 million more hogs were marketed in the record year of 1916 their average weight was almost 13 pounds less a head, so that 1919 stands easily first in pork production. The year's slaughter yielded the enormous total of 9,269,185,000 pounds of pork and 2,119,222,000 pounds of lard.

The record breaking exports absorbed 20.5 per cent of the pork and 37 per cent of the lard. The large foreign demand helped to reduce the home consumption 3 per cent on pork and 14 per cent on lard, as compared with 1918. Last year's per capita consumption of pork was, in fact, smaller than in any recent year except 1917.

Horses Slaughtered for Meat.

As a sign of the times it is of interest to note the federal inspection of horse slaughter, which began in September, 1919. Up to the end of the year 433 horses were so slaughtered, and about one-half of the resulting meat was certified for export.

There had been no previous federal supervision of horse slaughter since 1903. At that time inspection was limited to a single establishment which had been in operation for several years. The inspection was necessary, as in the present case, to permit of consignments being made interstate and for export.

The consumption of horse meat is not uncommon in certain parts of continental Europe, and was in vogue long before the late war. The fact that horses are slaughtered in non-federally inspected establishments in the United States is perhaps not so well known. Inspectors of the Bureau of Animal Industry reported in 1918 that horses were being so slaughtered at six widely separated places situated in the east and middle west and on the Pacific coast.. The output of these places aggregated about 2,000 or more carcasses annually. As to the consumption of this horseflesh, it is known, of course, that zoologicl gardens, menageries, etc., account for a large part of it for the feeding of flesh-eating animals.

Per Capita Consumption of Meat.

The following data are quoted from a table, prepared by the Bureau of Animal Industry, showing the annual per capita consumption of meat in the United States. They present some interesting contrasts:

Meat—	1917 Pounds	1918 Pounds	1919 Pounds
Beef	61.23	66.74	58.95
Veal	6.39	6.90	7.96
Mutton and lamb	4.59	4.95	5.90
Goat meat	0.18	0.14	0.09
Pork (excl. lard)	57.59	71.35	69.08
Total meat	129.98	150.08	141.98
Lard	11.51	14.57	12.48
Total meat and lard	141.49	164.65	154.46

Don't Let Straw Go to Waste.

When not too valuable for feed, oat straw makes an excellent bedding material, as it is a good absorbent for the liquid manure and gives a higher percentage of nitrogen than wheat straw or almost any other bedding material. Owing to the increased value of straw for roughage it is not always desirable to use it as bedding. The only excuse, however, for not using it in this way is that it shall be fed on the farm where produced. It is rarely good practice to sell straw from the farm. It is worth more when fed or used as bedding and as an absorbent for the liquid manure. Every year hundreds of straw stacks are allowed to rot in the field and lose much of their organic material, while still others are burned with the loss of both organic matter and nitrogen.

When straw is not available, other materials may be substituted for the purpose of absorbing the liquid manure. Sawdust, shavings, leaves, or other coarse organic material may be used Farmers as a rule use too little bedding. Bedding not only affords comfort for the animals but is the easiest and most practicable means of conserving liquid manure. All straw or other coarse materials which cannot be fed should be worked through the barns and returned to the soil as manure. Substances of this sort do not decay as rapidly as the manure itself and therefore tend to keep up the organic matter content of the soil, afterward releasing their own plant food through slow decay.

Lucky Adam.

Little Charles had just been chastised by his father. "Mama," he asked, "was Adam the first man?"

"Yes, dear."

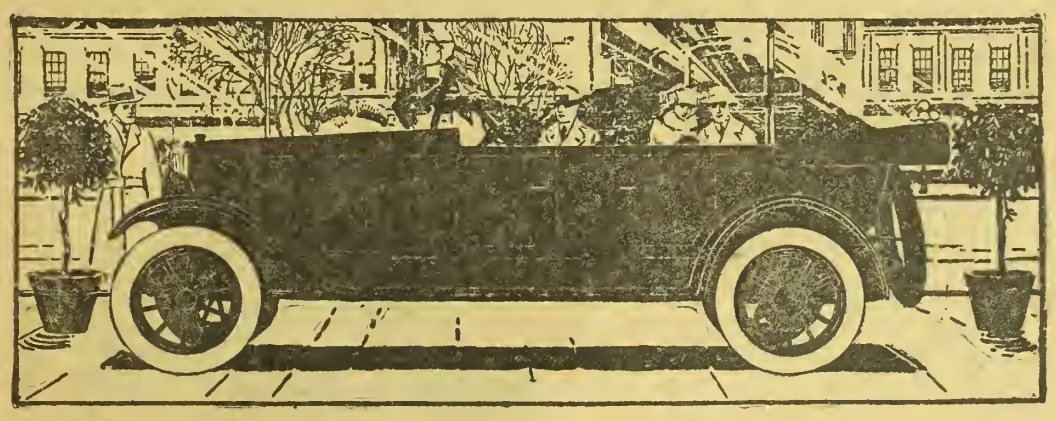
"Didn't he have any papa?"

"Of course not," said Charles's mother.

"Gee!" said the little fellow, "but he was lucky."—Cincinnati Times-Star.

CHANDLER SIX

Famous For Its Marvelous Motor



Chandler Leads Because of Its Real Worth

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Chandler advertising has never carried boasts or unfounded assertions to the public. It has never extolled some single performance as final evidence of superiority.

The Chandler Six is so distinctly the leader among medium-priced high-grade cars because of its own worthiness, which for sales purposes does not need the support of exaggeration.

Chandler worthiness comes primarily, of course, from its great chassis, light, strong and enduring, featured by the famous Chandler motor developed throughout seven years of constant manufacture with no change of type of design, but with refinements and developments which have kept it long strides ahead of any other six.

This isn't a claim. It's a fact, and over sixty thousand Chandler owners would tell you so if you could ask them.

Six handsome bodies, splendidly built and finished, are mounted on the one standard Chandler chassis.

Other cars of some similarity are listed at hundreds of dollars more

If you do not know the Chandler dealer nearest you, write for catalog now

SIX SPLENDID BODY TYPES

Seven-Passenger Touring Car, $1895 *Four-Passenger Roadster, $1895*
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CHANDLER MOTOR CAR COMPANY
CLEVELAND, OHIO

CHAPTER XXII.

Of a Buccaneer In a Hurry.

Edith Perham sprang to her feet, but the second man shouldered himself between us, blocking her way, though with no unnecessary violence. For me there was less consideration. The attendant thrust me over the threshold, and toward a group gathered in the clearing. Behind me were sounds of a brief struggle. Once the girl's voice rose in a cry for help, then I heard a half stifled moan and knew that Old Louis's minions had had their orders to gag her, if need be. I tried to break from my captor, to turn back to her aid, but bound as I was the attempt was a pitiful failure. I was dragged into the presence of the chief and a dozen of his crew.

A lantern and a brace of torches of resinous wood gave light enough and to spare, revealing the brutal faces of the gang, and certain ominous preparations for what was to come. A rope had been passed over a limb of a tree and dangled conveniently near Old Louis, who held a pair of heavy braided whips, which he was examining with the loving interest of a connoisseur. A little apart were Jose and the skipper, in charge of an armed squad.

As I was forced into the illuminated space, Old Louis looked up, grinning wryly.

"Ah, my frien'!" he said, and his voice was at its softest. "Eet is well. We entertain you—yes? Maybe we help you remember?"

"You won't!" I trust my tone was steadier than my nerves, for the sight of the old villian fondling the plaited thongs of his instruments of torture was an evil sight to see.

"Poof!" He shrugged his shoulders contemptuously. "Poof! Yes, you will remember. I predic' eet. An' you will tell everyzing."

To that I made no reply.

"T'ink again, my frien'," he urged. "No? As you will, then. Eet will be bad, ver' bad, for—for zem and for—you."

His little pauses were rich in unhappy suggestion. The skipper groaned, and a hand was clapped upon his mouth. Jose neither spoke nor moved.

Old Louis seemed to have made choice of his whip, for he dropped one and drew the other, lingeringly and lovingly, through his fingers.

"For zem and for—you," he repeated. "T'ink again. You speak—now?"

Still I was silent. Old Louis bared his teeth in that ominous grin of his, and nodded to the men in charge of Jose and the skipper. Evidently the programme was arranged, for while the Spaniard was suffered to remain where he was, a brawny wrecker drew the skipper forward.

At first the little man offered no resisance. Indeed, he seemed to show the docility of the fatalist who yields to the inevitable. Three steps he took as tamely as a lamb going to the slaughter. A fourth would have brought him fairly under the dangling line.

Then, with a quickness which was like a cat's he broke from the hold of his guard, big and powerful as the fellow was. They had bound his wrists, but bound them before him, and he drove an elbow into the big chap's stomach with a force which doubled him up and promptly put him out of action. A furious wrench parted the cloth of the skipper's shirt collar, leaving but a rag in the clutch of the guard, while he dodged Old Louis, bowling over the man next him and slipping under the arm of the third. For an instant it seemed that he might win free, but the last of the enemies in his path struck at him with a clubbed gun, the butt falling against his shoulder. It was only a glancing blow, but it did its work. The skipper lost his stride, reeled against a tree, tripped, and pitched upon his face.

It happened so swiftly that not a man had cried out, but as the skipper dropped and the pack hurled themselves upon him, there rose a babel of shouts and yells, drowning sounds of a minor disturbance, of which I had become vaguely aware, and to which I gave scant heed in the absorbing interest of the skipper's dash for liberty and its approaching punishment.

Old Louis fell to tearing away his followers who had thrown themselves upon the prostrate man, and who, if undisturbed, were like to beat the breath out of his body, and thus cheat their leader of the telling object lesson arranged for my benefit. He tossed them this way and that, rescued the quarry from his hounds, and began to drag him back to the rope. But the skipper was in no mind to yield. Bruised and beaten as he was, he fought desperately, kicking, writhing, jabbing with his elbows, striking with his bound hands, sinking his teeth deep in his captor's arm, and relinquishing his hold only when half-stunned by a tremendous buffet between the eyes. Round the pair surged the gang, more like wolves now than hounds, and wolves that had tasted fresh blood. Old Louis drove them back, however, cleared a space, and with his own hands, made fast the rope to the cords knotted about the skipper's wrists.

Half a dozen men caught the other end of the line and hauled lustily. The feebly struggling arms of the skipper were dragged above his head. Another turn on the line, and he swung almost clear of the ground. Old Louis himself ripped the remnants of the shirt from the wretch's back, then stepped aside.

"Zis fool is like a door that opens only par' way," he said addressing me. "Perhaps I persuade him to swing a lettel farther, but you—you, my frien'—can open ze door wide—ah, so wide!" And he spread his hands in a sweeping geture.

I glared at him, but said nothing. The grin had come back to his face, but suddenly it vanished, as he turned toward the spot where Jose had been.

The Spaniard was gone.

Old Louis burst into a roar of rage, and bounded among his men. For a moment there was a medley of oaths and shouts and jabbered excuses, while a very dark fellow paused in the operation of binding a wound in his arm to give a lively description of what had happened. Joe had contrived to catch a knife from his guard's belt, wield it with effect in spite of the lashings on his wrists, and finally gain the cover of the surrounding wood, thanks to the general attention centering on the skipper. Two or three wreckers had gone in pursuit, and had not yet returned.

All this the fellow told with an accompanying pantomime which was a deal more intelligible than his speech, so far as I was concerned, and which was not wasted upon Old Louis, who turned back at last, scowling savagely but evidently accepting the version of the escape. Very probably he reflected that Jose's liberty would be brief, at the best. And there were still two birds in hand to one in the bush.

The men who had tailed on to the line still held the skipper with his toes barely touching the ground. Old Louis grunted and raised the whip. It descended with a shrill whish, and a shriek burst from the victim's lips. Where the biting lash had fallen, a line of red stretched across the poor devil's back.

Again Old Louis struck, and again and again, with all his strength, with a sort of torturer's skill. He was going at his task deliberately, with brutal delight, bringing blood with every stroke, and working out a pattern in the shrinking flesh. The skipper's shrieks had sunk to sobbing moans; his head had fallen forward on his chest.

Old Louis paused, and turned to me. He was breathing hard from his exertions, and big drops of sweat shone on his face.

"You—you nex'!" The significant leer was more eloquent than the spoken threat.

The skipper began to babble, weakly, incoherently. Old Louis stepped nearer him, in hopes, it may be, that under the torture the wretch might reveal something of the great secret of the Zenobia. Plainly, though, what he heard was meaningless, for with suddenly renewed fury he brought down his whip upon the bleeding flesh. This time the blow was followed not by a groan but by an anguished sigh; the skipper's head sagged lower. Old Louis grunted contemptuously and flung a command to his men. The line was slacked and the skipper sank in a heap on the ground.

Of what befell in the next moment or two I have but a confused recollection. I was fighting desperately to break my bonds, battling vainly against hopeless odds. The pack closed in upon me; I was borne to the ground I was lying, face down, oppressed by a crushing weight of adversaries; the lashings at my wrists were cut; the men on my back relieved me of their burden; I was turned like a turtle, and they fell upon me again, while the end of the dangling line was passed about my arms and made fast. Then the line tautened, and for one instant I was hoisted almost to the bough.

At a signal from the leader they lowered me, after this taste of torture to come, till once more I had footing. Old Louis leering horribly, put his face close to mine.

"Ze wise man save himsel' ze pain," he

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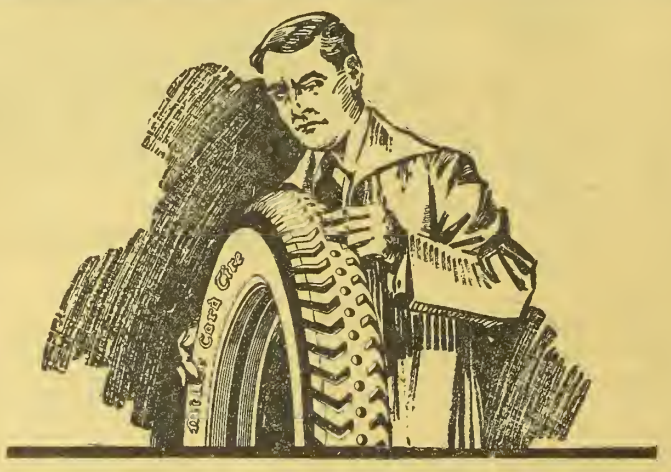

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It may change your whole conception of tire service.

What We've Added

Miller experts have spent ten years in perfecting these super-grade tires.

In the past few years they have almost doubled Miller mileage.

They have perfected a tread which, in our tests, outwears the best of others by 25 per cent.

They have perfected a Cord Tire which, in our ceaseless factory tests, averages 15,000 miles. And which often yields in road use from 20,000 to 25,000 miles.

They have secured uniformity. A Miller Tire very rarely fails of expectations.

They spend $1,000 daily just to watch and test these tires.

Test them on your car.

If you buy a new car, get Miller Tires on it. Twenty makers now supply them without extra cost.

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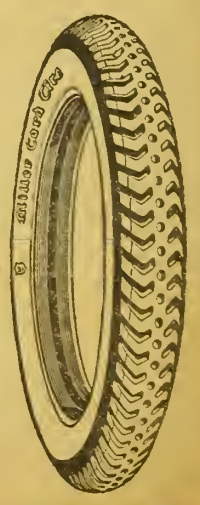

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chuckled. "Zere is yet ze chance—you may be wise."

"You—you demon!" I gasped.

He laughed in the fashion of one well pleased, complimented, it may be, and falling back a pace, swung the whip close to my shoulder.

"Bravo!" he jeered. "Eet is a brave man of words, but he shrin', he shudder from ze demon's love-pat."

"Lay that cursed thing on me, and you'll pay dearly!"

"But you pay firs'. Zink eet over, zink eet over. And you need not pay at all. Eet is but to speak ze little word, to whisper. Zen you are my free, you are my frien'."

I'm no hero, no willing martyr, I confess temptation surged upon me. Why not tell him what he sought? It would be little enough. Indeed, it would be no more than declaring what he knew—that there was a secret locked in the hull of the wrecked yacht. Grayson and I believed we should find the solution of the mystery in the mummy cases. As the situation was, there was nothing to prevent Old Louis from finding it for himself in due course.

The hand of Old Louis was upon the collar of my shirt, his long, curving, talon-like fingers seemed to sear the flesh they touched. Involuntarily I shrank, and he laughed jeeringly.

"Aha! you will speak ze word. You have not the hear' to resis', you—you white man!"

I stiffened as if under an electric shock. Where courage faltered, pride of race stood firm. Whatever came to pass, these mongrels should not see a white man cower before them.

"If you were either clean white or clean back," I taunted, "you'd not fear to face me, man-fashion, man to man; you'd not have to have your curs tie me before you'd risk laying hand on me. Cast me loose. Give me a chance against any one of you—if you dare."

It was pure bravado, but it served. He swore viciously, tore the shirt half from my body, and fell back a pace to gain distance for effective play with the knout, at the same time roaring to his men to hoist away on the line.

The rope tightened. I was raised till my arms seemed about to be torn from their sockets.

Then off to the left there was the crack of a rifle, and another and another, in a sort of irregular volley. A stray bullet sang through the limbs above us, and a twig fluttered to the ground.

The crew on the rope let go, and jumped for their weapons. Down I came with a rush, so sudden and unexpected that I lost footing and pitched forward. And there I lay, while the fusillade went on spasmodically, doing no harm, so far as I could observe, to the wreckers, but throwing them into such a confusion that for the moment I was forgotten. Half a dozen of the bolder spirits had dashed toward the firing line, but the others lingered, jabbering in tremendous excitement. None of them gave heed to me as I began to crawl toward the trunk of the nearest tree.

The firing, as has been said, was to the left but now there was a stir in the brush on the other quarter.

Something shot from the edge of the clearing and fell close to the group about Old Luis. And as it struck the ground, there was a blinding sheet of flame, followed by the roar of a deafening explosion.

CHAPTER XXIII.

The Turn Of the Tide.

After that frightful detonation was silence; after the blinding sheet of flame, darkness as of the pit by contrast. Then the silence was broken by groans and cries of anguish, but the darkness continued, for lantern and torches had been swept away by the explosion.

A man, staggering from the centre of havoc stumbled over me, and falling, lay moaning in terror, but serving me a lucky turn, in that my groping hands reached the knife at his belt. Then it was that I could thank my stars my wrists were bound before me instead of behind my back, for it now was possible, though none too easy, to saw away at the cords, which parted presently.

The panic into which Old Louis's gang had been thrown continued, and there was none to stop me when I rose to my feet. Men were running hither and thither. One collided with me, reeled out of my path, and went his way, howling dismally. Another brushed by, whipped about, and ran back toward the spot where lay the victims whose groans filled the air.

Truth to tell, my brain was working hardly more clearly than theirs, save for the instinct of self-preservation, and for a little I was content to gain the shelter of the undergrowth. There, however, finding no pursuer hot after me, I bethought me of the hut and its fair captive, and making a detour, came up to the shack from what I reckoned to be the rear, though I was far from clear as to the points of the compass. A glimmer of light through a chink in the wall proved that the structure had been beyond the radius of destructive action of the explosion. That meant, also, that the armed sentry at the door probably was unharmed. Knife in hand, I stole forward—and, of a sudden, was seized in a grip which closed about me with the crushing strength of a constrictor's folds.

I did my best to free myself, but all in vain. I could not wield the knife, for my arms were pinioned to my sides. More, I was lifted bodily and borne deeper into the thickets as powerless as a babe in arms.

"Help! Help!" I cried graspingly, and my captor halted. "Help!" It was hardly more than a whisper, for that vise-like hold was cruel tight. "Help! Hel-p!"

I was lowered to the ground, the enfolding arms released me.

"I beg your pardon, sir," said a husky voice.

"Hoban!" I had breath for but the word.

"Yes, Mr. Scott. And thank you, sir, for asking kindly." Though I could barely see him in the darkness, I'd have sworn that he was standing at attention.

"And Miss Perham—she's safe?"

"Miss Edith is safe, sir, thank you."

"Where is she?"

"With Mr. Grayson, sir. We came directly, sir, after he threw the bomb. Yes, sir, it was a bomb, made with dynamite, sir."

"But there was a fellow with a gun ——"

I must suspect the well trained Hoban of a solecism—a chuckle, no less. "Te he! There was a man at the door, but he seemed to agitated, sir. He made no trouble, sir, Mr. Grayson coming upon him unawares, as you might say. I have his gun, sir. Then we came away, Miss Edith with Mr. Grayson, but, hearing somebody stirring about—it was you, sir,—I waited a bit."

I peered at him, made out the muzzle of the rifle projecting over his shoulder, and was impressed anew at the strength that lay in his arms, and had enabled him to deal with me and at the same time keep possession of the weapon.

"Well, I'm glad you're you," said I.

"Thank you, sir," he said.

"And where's Grayson?"

As if in answer, the firing, which had dwindled since the explosion, broke out briskly near at hand.

"That means Mr. Grayson and Miss Edith have reached our friends, sir," said Hoban respectfully. "And now he will be for pressing the attack, I think. The yachtsmen are assisting, sir, you understand, and they gave us rifles, sir."

"Good!" said I, vastly cheered to learn that the girl's doubts of the Fair Lilians were unfounded. "Let's get into the game ourselves."

With that he began to plow a way through the brush, circling an end of the advancing force, and guiding me so cleverly that in a surprisingly short time we had flanked the line and come up with it from the rear.

Grayson gave me a hasty clasp, and thrust a weapon into my hands.

"It's the Pera's old gun—good as a howitzer," he told me. "If you see anything or hear anything, blaze away. No time for fancy shooting. And keep 'em moving, that's the whole plan of campaign now. And you, Hoban, look after Miss Edith and Mrs. Vincent. They're at the rear—out of harm's way. See they stay there."

"Very good, sir," Hoban answered, though with a trace of reluctance.

A bullet whistled overhead—it must not be supposed that the wreckers were not showing fight—and Grayson took a snap at a flash among the trees. I fired, too, at the same uncertain target, the old fowling piece making a noble roar, at least. Then I followed his example in crawling forward, taking cover at every opportunity and letting drive now and then with no notion of the result.

To right and left other men were firing and advancing in much the same fashion, and in a moment or two it was clear that the resistance offered was neither increasing nor sufficient to check the attack. The bomb, in short, had served a double purpose in not only putting a part of Old Louis's force hors du combat but also—and this was, perhaps, more important—in destroying the morale of the rest and the slender discipline among them. So, while a few showed fight, as has been said, it was no last ditch struggle, and they gave ground after a half-hearted resistance, making it more of a running fight than the sort of thing we might have looked for. Why! so far as mere numbers went, they still outheld us, three to one. Perhaps they feared another bomb. At any rate they retreated.

Fighting in the dark, among the trees, was thrilling enough, but not likely to show heavy casualities. None of us was hit, and I gravely doubt that the enemy fared much worse while we forced them back, past the clearing and into the thinner growth near the beach. Then they broke, and in a moment more we had reached the edge of the timber, and were viewing a panic-stricken rush for the boats, one of which had already put off for the big schooner.

It was not so dark on the beach that we could not make out the groups huddled about the remaining boats, and even distinguish a figure here and there. One in especial I marked, a heavy figure, moving painfully and with difficulty. It was engaged, apparently, in a last effort to rally the fugitives.

"Old Louis!" I cried, and mindful of what I had suffered at his hands, threw up my weapon for a shot. Something, though, made me hesitate to press trigger. It was not pity nor faltering of resolution, but a premonition that another was to exercise a prior right of vengeance and a greater.

A little man broke from the cover, and ran down the beach, straight at the surging mob about the boats. The heavy figure detached itself from the mass and moved forward, limping to meet him.

"Good Lord, the skipper!" said I under my breath. "And I'd thought they fair cut the heart out of him!"

The little man hurled himself at his big opponent, broke down his guard by sheer ferocity of onslaught, grappled with him furiously. They swayed to and fro; the right arm of the little man rose and fell once, twice, thrice. Old Louis dropped to his knees, and as the other loosed his hold and sprang aside, the big figure crumpled and sank limply to the ground.

The skipper stole away like a shadow. Old Louis lay where he had fallen, unnoted by his crew, who were shoving off their boats as if the devil were upon their heels.

We sent a volley after them, which I fancy did no harm, but set them into greater panic than ever; for their oars splashed wildly amid a chorus of yells.

"Cease firing!" Grayson sang out. Alone he crossed the beach, and bent over the

(Turn to Page 27.)

ESSEX MOTORS

Essex Almost Doubles Light Car Endurance

Essex Has Performance Like the Costliest Fine Cars—
Its World Endurance Record Has Never Been Rivaled

The most important thing Essex has proved is that weight and size are no longer necessary to finest car quality.

Its 3037 miles in 50 hours is a world endurance record. The test was official. Supervisors of the A. A. A. certified the Essex stock chassis in every detail.

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What car, Essex size and weight, can even attain a mile-a-minute speed, much less keep it up for 50 hours?

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These decisive tests proved Essex not only the supreme performer of the light car field, but they showed that the moderate priced, economical Essex has such endurance and dependability as few large, high priced cars offer.

Greater size could add nothing to Essex. It has the qualities weight and size are built to give—riding comfort, solidness, distinction and smooth, quiet pace. But in addition it has fuel, oil and tire economy. And its great durability means freedom from repair costs and positive, dependable transportation.

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That is why so many women are Essex owners. They appreciate its safety, too. Its controls are simple and instantaneous. It makes fast time, with security, even in difficult traffic.

Essex Wins On Quality Minus Useless Weight

Essex won recognition on the issue of finest quality without useless weight and size. That issue is uppermost today.

You will take pride in your Essex from the first. Its beauty, luxurious fittings and its performance give it distinction everywhere. And time will increase your respect for it. You will come to rely absolutely on its dependability. You will find it always ready for any demands you may make.

These are reasons why Essex set a world's sales record in its first year. And orders are now so far ahead it is certain even that unrivaled mark will be surpassed this year.

Thousands, realizing this, are placing their orders now. We advise that you do the same, to avoid disappointment.

Essex Motors, Detroit, U. S. A.

165)

The Western Potato Situation

PROOF THAT FARMERS ARE NOT HOARDING SPUDS.

STUART L. SWEET, Chief, Colorado Office of Markets.

The Colorado potato crop is nearly all marketed. There are fewer potatoes on hand today than at any corresponding time since the spring of 1917.

On March 8 the railroad records showed, according to the U. S. Bureau of Markets, that Colorado had shipped 8,361 cars compared with 10,627 cars shipped to the same date last year.

The total shipment from the 1918 crop was 13,647 cars. On this basis, Colorado had approximately 3,000 cars on hand a year ago.

Today Colorado has shipped 8,361 cars from a crop which will not exceed 9,000 cars. We have today less than 650 cars of marketable potatoes still on hand—a truly unusual condition at this time.

Western Conditions.

Conditions in western competing states are similar. Idaho has shipped 5,883 cars from a commercial crop which is estimated at 6,000 according to the U. S. Bureau of Crop Estimates. A year ago at this time Idaho had shipped but 5,529 cars, 300 less than have been shipped to date this year, and the total shipment for the 1918 crop was 7,726 cars. In other words, she had approximately 2,200 cars on hand at this time last year while today she has less than 117 cars.

The California crop is unusually short and the majority of the Idaho stock for the last three months has gone west. This has kept Colorado's big competitor, Idaho, from effective competition on the middle western and southern markets.

The Great Lakes section is the other district which plays an important part in competition with the Colorado potatoes. According to unofficial local estimates received from this district and published in the March 9 issue of the Weekly Crop and Market Review of Fruits and Perishables, published by the Bureau of Markets, Michigan has probably 3,300 to 3,500 cars still to ship; Wisconsin about 3,500; and Minnesota 3,500 to 4,000. This makes a total maximum of probably 11,000 cars to be shipped from Michigan, Wisconsin and Minnesota. Maine is reported unofficially to have approximately 8,500 cars left. These are the large late potato producing sections of the country and are the only districts where there is a considerable supply of potatoes on hand at this time. Even these states have less than 20,000 cars of potatoes to meet the demand for approximately the next three months.

National Conditions.

(Figured in term of carload shipments).

On March 8 last year, the United States had shipped from her 18 late potato producing states approximately 98,000 cars, and the total shipment for the entire shipping season of 1918-1919 for the U. S. A. was 133,000 cars. Balance on hand last year at this time was approximately 35,000 cars.

The total shipment this year for the United States from the late potato producing sections has reached 101,000 cars, or 3,000 more than were shipped to a corresponding date last year. The important point to note is that the total estimated stock on hand at this time is less than 24,000 cars, or approximately 10,000 cars less than were on hand at this time last year.

Blaming the Producer.

The above is a photographic reproduction of an Associated Press dispatch which appeared in a Denver newspaper on March 10th and was published also in many other western papers. This dispatch did an untold lot of harm. It started talk of potato boycotts among city club women; it caused thousands who read it to believe that farmers in Colorado and Idaho were deliberately withholding food from the market. The truth about the potato situation is set forth in an official review of market conditions given in the adjoining column. This review from the U. S. Bureau of Markets shows that potatoes are not being hoarded because there are none to hoard.

If because of the shortage, which is nation wide, some dealers advanced retail figures to an unjustifiable degree, the farmers certainly were not responsible. They have been getting no unusual figures.

In this particular instance it was possible for the newspapers to get from the Colorado Office of Markets information regarding actual conditions. However, one could hardly blame the newspapers, for they quoted a California state official, whose word should be good.

What we wish to bring out is that combatting false statements about the farmer is legitimate work for the State and National Farm Bureaus. Such apparently official statements emanating from a political officer who was grossly ignorant of the status of the potato supply, need to be nipped at their source. Newspapers should be asked to carefully scan all matter that concerns agriculture to determine its degree of reliability before publishing, but the Farm Bureau can go further in this case and ask California's state purchasing agent whether he was deliberately or ignorantly playing into the hands of the retailers and dealers when he sought to protect them against the cry of high prices by blaming the Colorado farmer, whose potatoes have been leaving warehouses and farm storage as rapidly as cars could be provided. The truth about the situation is first, a nation wide potato shortage; second, an acute shortage in Colorado and Idaho; third, a disposition on the part of the trade to lay on a little extra because of this shortage. And, lastly, as usual, an attempt to shift the blame to the producer.

The time has come for the farmer to protest with vigor against such misrepresentation.

Colorado Farmers Hoarding Potatoes, Californian Claims

By Associated Press.

SACRAMENTO, Calif., March 10.—High prices of potatoes in California are due to the storage of large quantities in Idaho, Washington, Oregon and Colorado, held by farmers for still greater prices, W. G. McMillin, state purchasing agent, said today. Potatoes have been deleted from the menu of most state institutions in California on account of high prices, McMillin said.

More Seed Is Condemned.

Laboratory analysis in the office of the state seed commissioner, from January 1, 1918, to January 1, 1919, shows that 46.5 per cent of the alfalfa, 29.5 per cent of the red clover, 44.5 per cent of the white clover, and 24.5 per cent of the alsike clover samples submitted for test were condemned. Of these condemned samples, 90 per cent were rejected because of the presence of dodder. B. F. Sheehan, field agronomist of the university extension division, who is also state seed commissioner, says dodder is "the worst weed that can get into alfalfa and clover fields." In 1916, only 21.3 per cent of the alfalfa samples were condemned. To prevent the grades of Idaho seed from deteriorating, Mr. Sheehan urges that farmers send in their seed for test.—Idaho University News Letter.

I take several farm papers but consider your paper in a class by itself for the western farmer. Wishing you every success. Sure do enjoy Farmer Putnam.—Edw. Shone, Kendrick, Colorado.

A Boy's Idea.

The small boy's idea of hell seems to be an empty wood-or coal-box when it is time to go skating.—Leavenworth Post.

Rocky Mountain Grown

Thoroughbred **Mile High** *Seeds*

BEST FOR THE WEST

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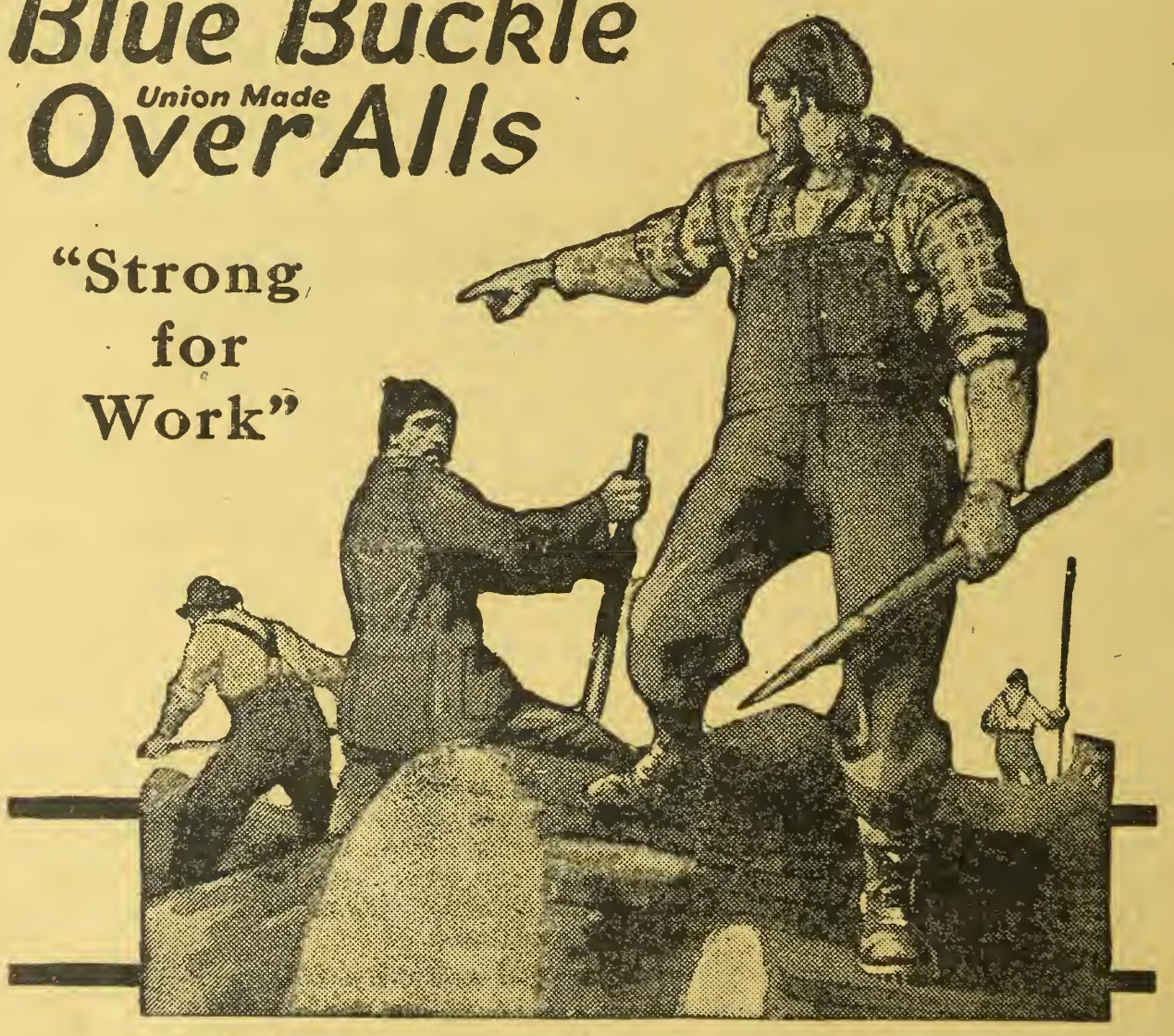

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JOBBERS OVERALL COMPANY, Lynchburg, Va.

Witch's Island.

(Continued from Page 25.)

motionless form of Old Louis. Then he rose and came back to us.

"The skipper evened accounts," he said gravely. "His knife went home."

"I'm not for blaming him," said I, and my tone matched Grayson's. "I saw it all, remember! And I thought him done for—after that flogging."

"Aye, aye. Jose brought word of what was afoot."

"And what was in store for me?"

"Yes," said Grayson. "It hurried our move, rather. I'd been rigging the bomb—told you about the dynamite cache, didn't I?"

"You did."

"Well, the bomb had to be a crude affair, of course—cross between a shell and a hand-grenade. And when Jose arrived with his news—well, I asked the doctor to take his men and begin a diversion, under cover of which I could get in range for strong-arm mortar practice. Old Louis, you see, had managed things pretty well; half his crowd were posted around the clearing, protecting the other half who were in for the big show."

"Umph! I was there!" said I, between my teeth.

Grayson turned to the doctor. "Abels," he said, "you and your people have behaved mighty handsomely. I'm sorry I can't show my appreciation in something more than words, and as sorry that the words I command fall so short of what I want to say to you and to them."

"We made common cause—of course," Abels answered a bit shortly. It seemed to me that he was embarrassed, certainly he could hardly have said less.

Then Hoban and his charges joined us, and for a little Mrs. Vincent saved anybody else need of speech, for she burst into hysterical inquiries, with never a pause for a reply to any of them. She fell upon the doctor's neck, and clung to him with a display of affection not always existing between brother and sister. Yet, at a word from him, spoken after due acceptance of her endearments, she recovered her self-control and called upon Miss Perham to voice her thanksgiving for victory.

What the girl said was very little, very well phrased, but a trifle reserved.

"Confound her! She's an iceberg," said I to myself, and with reason, for she had put a practical query as to the probable course of the defeated and leaderless enemy.

"Oh, I think they'll lose no time in sailing away," said Grayson. "They've had enough. Nothing more to fear—from them."

It was the irony of fate that as he spoke thus, the fleeing foe was moved to fire a parting shot or two. There were flashes from a couple of their boats, and a bullet struck the sand almost at our feet.

Grayson uttered an exclamation, took a step toward me, and sank upon the sand. I tried to reach him first but another was before me. Edith Perham had dropped beside him and his head was pillowed on her breast.

CHAPTER XXIV.

The Secret Of the Mummy.

Now, as it chanced Grayson was not doomed to perish in the moment of victory. A bullet, ricocheting and grazing, had toppled him over and half-stunned him for a little, but as hard knocks go, his was not a very serious affair. Presently he was sitting up, and Edith Perham, her services as nurse no longer required, had risen to her feet and retreated a pace or two.

Nobody, as I recall, had much to say about the incident, for after congratulations to Grayson on his lucky escape the talk dragged oddly. Even Mrs. Vincent was subdued, and Abels and I dropped to monosyllables. In the darkness one might easily be mistaken; perhaps it was not a fact that the girl's arms at first clasped Grayson very tightly. Admittedly after the first she seemed to be as cool and clear-headed as ever, and had promptly resigned her role of nurse when need of it was ended.

Sounds from the big schooner gave warning that she was getting under way. In silence we watched her shadowy shape glide between the islands. And then we turned to the task which had to be done, and that without loss of time.

Old Louis lay dead on the beach, with the skipper's knife between his shoulders, and the bodies of three of his men testified to the deadly work of the bomb. If the rifle fire had winged anybody, the would had not barred retreat. There was, of course, danger that some of the crew, cut off from the rest, might be lurking in the cover of the woods, and Abels told off his yachtsmen to make a search. So, with one thing and another, there was business for all hands on Witch's Island until the sky reddened in the east, and another day was come.

And then was made a discovery. The Pera's yawl was missing, and the Pera was gone from her anchorage.

Grayson shrugged his shoulders. "The milk's spilt; there's no profit in tears," said he. "We ought to have reckoned on the skipper making some such play. Crafty little beggar, but a fool for all that—managed to break with both sides. Lucky for us, again, that the Fair Lilian had to put in here for repairs. All of which leads up to the truth that it's our interest to finish on the wreck before another strong-arm claimant heaves in sight."

We went off to the Zenobia, Grayson Jose and I, and found the forward deck littered with the big cases, most of which had been opened. Old Louis's gang had pushed the job, and having forced the covers of the boxes, had tossed the contents about with fine disregard of damage by water. Grayson's face lengthened, as he surveyed the scene.

"I reckon the chance of a glutted mummy market is avoided fast enough," quoth he. "Dry 'em out? Doubt if it can be done. Still, we'll see what's left below."

Donning the diver's dress he went down and presently, having made fast a line, came back to aid Jose and me in hoisting still another case to the deck.

"Last of the lot," he told us. "Clean hold now. If this fellow fails to yield something, there'll be mighty little to show for our trouble."

Again Jose took to mallet and chisel. The case was like all the rest, with a metal lining within the wooden covering, and a mummy shrouded in voluminous wrappings. We examined it, of course, but half-heartedly; there had been too many disappointments.

I looked at Grayson across the box, and shook my head. "End of the hunt?" said I.

"Not quite," he answered quietly. "There's still the safe."

"Which isn't for us," I growled.

"But which, none the less, we're bound to overhaul," said he.

Hardly a word was spoken, while the diving outfit was shifted aft. By every indication our venture had failed. The secret of the Zenobia was a secret still. Risks to life and limb had gone for naught. There was no treasure, there was even no tale of a sea mystery solved, to be made a sensation of a day. Trifling salvage there might be—too trifling, perhaps, to meet the cost of the expedition.

Hoban and Miss Perham came off to the wreck, while Grayson was below. They remained while the tedious task went on, Hoban at last aiding in the mighty tug with which the safe, its braces having been cut, was dragged from the niche and across stateroom and cabin to the companion-way. Luckily, it ws a small affair and not thick walled, or I doubt if we could have managed it with our simple tackle. But finally, after a deal of puffing and hauling it was raised to the deck.

And here rose a fresh difficulty. Though an old-fashioned strong-box, it had a keyless lock.

"You have the combination?" I asked the girl.

"The combination?" she repeated.

"Yes, the Open Sesame," said I, "the deft twist of the wrist, so to speak."

"I—I don't know it."

Now, this was a condition which all well might have foreseen, but which had entered into the calculations of none of us. There we were, surrounding the safe, a squat and ugly object of contemplation, a most obstinate nut to crack.

Grayson picked up a chisel and pried at the door, with a manner of making a test doomed to failure. Then he cast a glance seaward. It was easy to guess what was in his mind, and how high he reckoned the danger of interference before we could drill through the barrier with the poor tools at hand.

"We'll have to transship this," he said. "Of course, Abels will be accommodating. What we need is a return to civilization and an expert safe-breaker. Best way out, and quickest, I fancy."

He had turned to Miss Perham, half questioningly, but his plan met opposition.

"It might be, and yet—" she hesitated—"yet I can not bear to leave the island until I know the truth. There are papers—or there should be papers here—of vital importance. And if we went away—back to St. Thomas or to New York, for instance—and then opened the safe, and did not find them——"

Again she paused. Grayson completed the sentence for her. "Then you'd wish to return for a search of every drawer or other hiding place in stateroom and cabin."

"Yes."

"I understand," Grayson told her. "And, being here, you'd prefer to avoid need of a return."

"Yes."

I couldn't resist the temptation to take an apprehensive squint to sea, but Grayson met her gaze.

"It shall be as you wish," said he. "One way or another we'll open that safe!"

"It's not a whim; it's not caprice!" she cried. "It's a question of honor, of fidelity to trust. There was an estate in charge of my father and after—after his death—" her voice grew tremulous—"the claim was made that there had been no payments to the heirs. Yet he must have made them. There must be papers to prove it. They must be here!"

"I understand," said Grayson again and very gently.

"There is one thing more," she went on. "My father's affairs have proved to be complicated. He had so many of his papers with him on the yacht that we have been unable to clear the tangle. But this claim was the greatest trouble of all. If it were just, it meant a debt was owed, a debt of honor. But I—I know my father, though his own fortune might have dwindled, could not have been faithless to a trust. I must clear his name. To clear it I came here, as I would have gone to the end of the earth."

"I believe you!" said Grayson with conviction.

"And so do I!" I echoed. Yes, it was true enough. Here was a girl, clean souled and brave, who would go, as she said, to the ends of earth in such a cause.

Grayson wheeled sharply, and called to Jose.

"Ashore with you, and fetch what's left of the dynamite!" Then he dropped his voice. "I'd a premonition that stuff'd be useful, Scott."

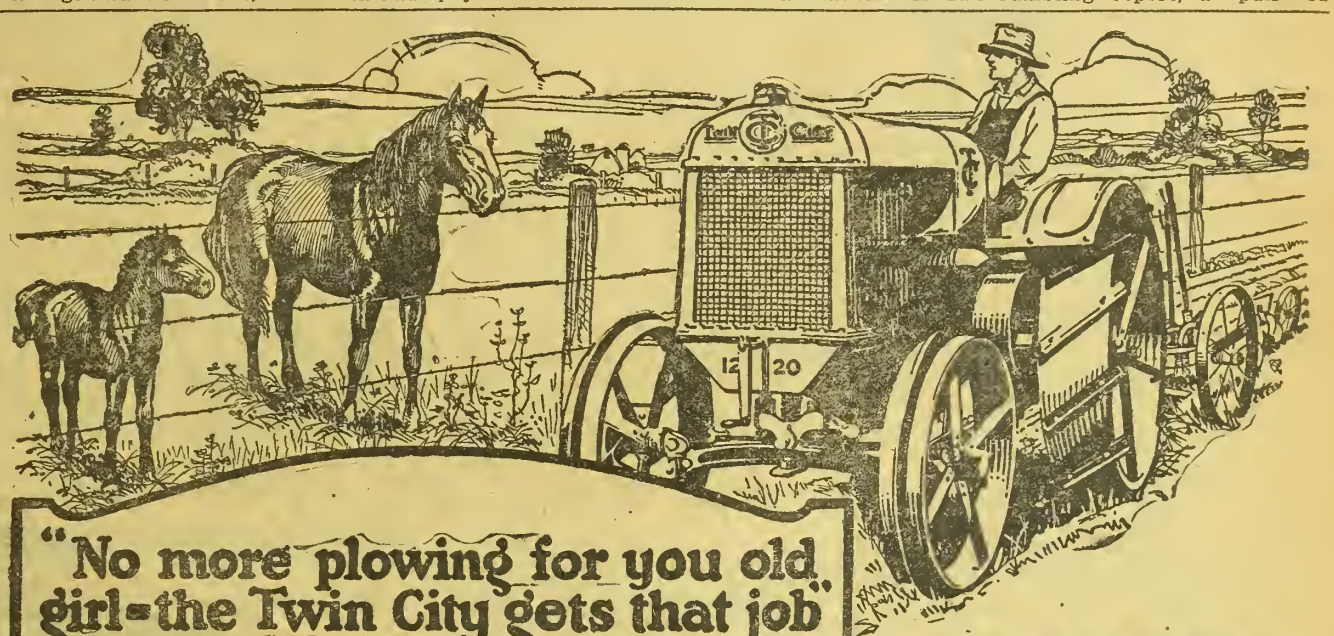
"As it was," said I.

"As it will be once more," he declared.

There was no reason to suspect Grayson of practical knowledge of burglary, but he had followed some odd trades in his day. No doubt, we wrought clumsily, slowly, but in the end effectively. Perhaps the metal had not the temper of more modern processes; at all events, by dint of toil and muscle, some slight impression was made. Then it was time for the dynamite.

Abels and his sister had rowed out to the wreck, while these things were doing, and the doctor lingered longer than caution might have prescribed, while Grayson packed his explosive against the door of the safe. Whereupon it was a case of everybody to the boats to await the explosion.

A dull rumbling report, a puff of



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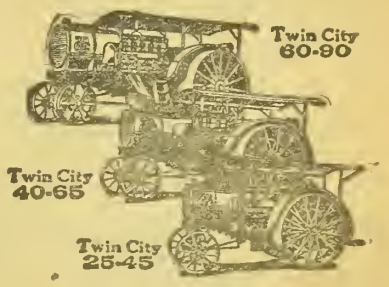

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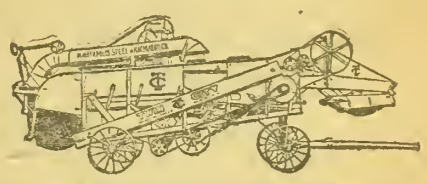

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smoke, and it was over. Back we pulled in haste, to find the safe on its back and its door gaping sufficiently to permit the insertion of a bar of iron. With the leverage thus obtained, the rest was easy.

Some water had reached the interior, and part of the documents had suffered. Others, however, were legible. We left Miss Perham busily engaged in gathering them together, and went forward again with the mood of silence upon us.

Grayson lighted a pipe, and I followed his example. Jose was nailing on a cover of one of the cases, and I watched him, ruefully calculating the percentage of probable returns upon our venture "One lot of mummies—more or less water soaked and roughly handled!" Nice heading that would be, for advertisement of the wares we'd have to offer! I smoked and meditated, and was no happier. At last, roused by the creak of oars, I looked up to see Miss Perham and Hoban rowing shoreward. Dr. Abels and his sister were far aft, killing time apparently.

Jose finished with one case, and moved to the next, which chanced to be that which had been last brought to the deck. For no very clear reason I bethought me of the small box, which had served as bait for the trap which Old Louis set, and I asked Grayson if it had had any content of value.

"No," he answered. "As a matter of fact, it was empty."

Jose had been delving in the foot of the case, but now he raised his head.

"Ze lettle box? I make two—three of heem."

"Yes!" Grayson encouraged.

"Zat beegest—ze leetlest here," Jose said, and plunging a hand into the depths dragged from under artfully concealing packings a wooden chest, which had escaped our first search!—a chest very like those in which silver is stored by careful housekeepers. "I feel heem—just now," he explained tersely.

Grayson and I pounced upon the box together, but it was he who seized a chisel and set himself to force the lock—for locked the box was, and supplied with catches at the ends as well. Wood gave, where metal held fast, and the lock was ripped from its moorings.

On top of all else in the box was a thick plush-like cloth laid very smoothly. This removed, there was revealed a number of small flat packages, each covered with heavy paper.

Grayson took one at random, tore away the paper, uttered an exclamation. In his hand was a thin sheet of metal, engraved and burnished.

"What is it?" I asked eagerly.

"A plate of some sort, apparently—hanged if I know just what sort! Looks like——" He bent lower to study the design. "By the gods of war and peace, Scott! it looks like money."

"What! Counterfeit plates?" I gasped.

"Right you are, counterfeits!"

It was not Grayson who spoke, but Dr. Abels, and there was a note in his voice I'd never heard there before.

So soft had been his step that he had approached, undetected, to within half a dozen feet of us, while close behind him tiptoed Mrs. Vincent.

It was the man's manner and bearing more even than his unheralded coming which startled me. The mandarin spectacles were gone, and a pair of vigilant eyes were upon us with no softening, tinted lenses to rob them of their keenness. His hands were behind his back, but something warned me they were not likely to remain there long.

"Eh, eh?" said I stupidly. "What's the meaning of this, anyway?"

"The meaning," he answered curtly, "is that I confiscate those plates."

His hand came from behind his back. It held a big revolver. Another weapon, as big and as threatening, was in the grasp of Mrs. Vincent. There was no trembling in her smooth, rounded wrist, and the baby blue eyes had caught the cold glint of steel.

(To be Concluded.)

Potatoes Under Irrigation.

(Continued from Page 17.)

sirable for some other reason. As soon as the land dries enough to bear the horses in spring, the harrow or disk should be used to smooth and mulch the surface.

Harrowing.—To get the best results from spring plowing not only must it be early, but it should be followed each half day with a spiketooth harrow, or with an equivalent implement. If the land is cloddy, or if much coarse organic matter is turned under, it may be wise to use the disk or the culti-packer to pulverize clods or to firm the sub-surface in order to promote decay.

Other harrowings may take place advantageously. These will break up any crust which might form and will mulch the surface, besides further firming the seedbed beneath and pulling out weed seedlings before they can become established. This is the most economical time to kill weeds, because wide implements may be used and because the weeds are killed by slight scratching. Should the soil be badly infested with weed seed, this cultivation will bring them to the surface where they can germinate and be killed by the next cultivation. If the seedbed contains many weed seedlings when the time for planting has come, a final harrowing should precede the planter. In spite of all that can be done weeds sometimes get too large for the spiketooth harrow. The springtooth or disk harrow must then be used. The farmers of the Pacific northwest use a rod weeder. This is merely a rod about an inch in diameter fastened on wheels in such a way that it can be let below the surface. Some "brands" of the machine have cogs to give the rod a rotary movement. This prevents clogging due to weeds catching on the rod. It is particularly well adapted for clearing fallow land of weeds.

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"No," answered Mr. Meekton. Henrietta is very unassuming. merely says she has done her Pittsburgh Chronicle-Telegrap'

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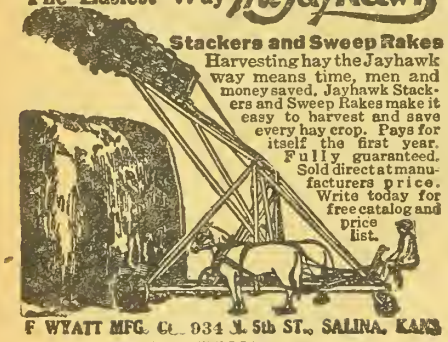

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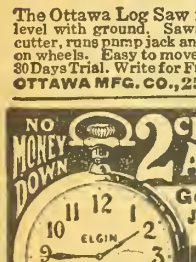

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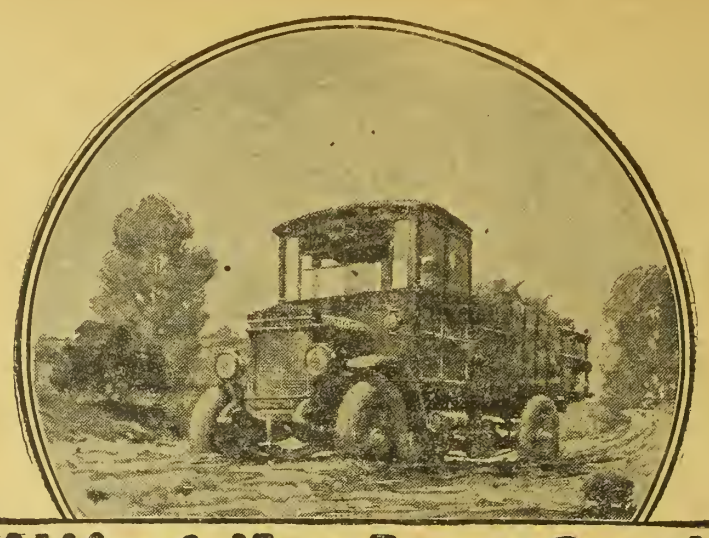

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Marquis vs. Defiance.

Last month we published the results showing the comparison of Marquis and Defiance spring wheats on ten of the best fields of each during the last year. We wish to offer in this issue, figures showing the comparison of the two varieties as they have produced during the past four years:

MARQUIS.

Year—	Acres.	Ave. Amt. Seed per A.	Ave. Time to Mature.	Ave. Yield per Acre.	High Yield per Acre.
1916	214.5		.....	42.95	60.
1917	556.4	71.8	136.	43.4	54.
1918	367.	79.3	126.3	36.5	52.
1919	158.33	79.6	131.7	41.57	50.75

Average yield per acre on 1,296.23 acres over period of 4 years is 41.96 bushels for Marquis.

DEFIANCE.

Year—	Acres.	Seed per A. Ave. Amt.	Ave. Time to Mature.	Ave. Yield per Acre.	High Yield per Acre.
1916	32.		.....	44.06	51.
1917	45.2	61.2	146.	51.3	61.5
1918	244.1	66.25	145.2	46.64	62.
1919	232.	71.1	128.6	41.6	56.

Average yield per acre on 960.1 acres over period of 4 years is 47.53 bushels for Defiance.

Difference in yield in favor of Defiance has been 5.57 bushels per acre.

Difference in time of maturing, 7.6 days in favor of Marquis.

Average amount of seed used per acre for 3 years: Defiance, 66.21 pounds. Marquis, 76.9 pounds.

During the four years of this test a comparison of the quality has also been made, and some of these were published. However, since the prices paid for the different grades and different classes of wheat vary from year to year according to the supply and demand of certain classes, we realize that such figures would be misleading and so do not publish them. For instance, some year there may be a scarcity of hard red spring and consequently the millers in bidding for supplies of this to use in mixing with softer classes would push the price higher and the price on the soft varieties would decline because of an over supply of it. Other years it may be the reverse and so the difference in price between the same two classes and grades would not remain in the same ratio.

The Marquis wheat classes as hard red spring; sub-class either dark northern spring, northern spring or red spring. The Defiance classes as common white; sub-class, either hard white or soft white, according to per cent of hard berries. There is a difference of 2 cents between grade No. 1 dark northern spring and grade No. 1 hard white, based on government minimum prices. This does not mean that this difference in price will always be apparent when you take your wheat to the mill, because the millers may offer as much for Defiance as for Marquis. The above prices are minimum and not maximum rates. Consequently, although we recognize the fact that wheat is a better milling wheat, higher quality, the only comparison we can offer you from the results of what the two varieties are doing in Boulder county is the comparison of yield. With the above information farmers should be able to wisely choose what wheat will give him more dollars under his conditions.—Boulder County Farmers' Exchange Bulletin.

The above report is a summary of the results shown each fall at the Boulder county fair by farmers who are testing the relative merits of Marquis and Defiance spring wheats under irrigation.

Saving Beet Labor.

Using larger implements and more horses has enabled sugar beet growers greatly to reduce their expenses for man labor and increase their operations. The normal man labor required in growing sugar beets will vary from 80 to 135 hours or more an acre, say specialists of the United States Department of Agriculture in Farmers' Bulletin No. 1042. Under average conditions, where more horses and larger implements are used the man labor on machine operations will be reduced approximately 25 per cent.

A direct comparison of plowing crews in Michigan and Ohio, where conditions under which the work is done are uniform, shows that approximately one hour an acre less of man labor is necessary to operate a plow drawn by three horses than by two. With the larger outfit; as also when a tractor is used, a float or plank can be attached to the plow, and thus the breaking of a cloddy surface can be done with little additional effort or cost. In disking in the Michigan and Ohio districts it was found that a four-horse outfit saves one-quarter of an hour of man labor an hour over the two-horse equipment.

Cultivation of sugar beets furnishes a striking contrast in crew efficiency. In Michigan and Ohio it was found that 1.9 man-hours an acre were required to cultivate once over with a one-row implement, 1.6 man-hours with a two-row cultivator, and only .9 of a man-hour for a four-row cultivator—a distinct saving in man labor by using the four-row machine. As many fields require attention before it is possible for the grower to get the work accomplished, any saving of labor and time is an advantage to the growing crop and affords more man labor for crops competing with the sugar beet in the distribution of labor.

Under average conditions a crew of one man and two horses working continuously will lift approximately 1½ acres of beets a day. A crew of one man and four horses will probably increase this area to two acres, or possibly 2½ acres a day under favorable conditions. The performance of the lifting implement can be improved still further with the addition of more horse power. If, by using an extra horse on the lifter, this work can be performed in a shorter period, more time will be available for hauling the beets to the factory or loading station.

An appreciable saving in farm labor will undoubtedly be accomplished through the development of mechanical harvesters. The hand labor on sugar beets, comprising such operations as blocking, thinning, hoeing, pulling, topping and loading, constitutes from 52 to 75 per cent of the total man labor required in growing the crop. The pulling, topping and loading, when combined, make up 24 to 42 per cent of the work. Estimates made by several growers show a variation of 24 to 30 hours in the labor requirement for the hand work in harvesting. It is very apparent, says the bulletin, that this amount can be reduced to a few hours an acre with the introduction of the mechanical harvester. This will in turn release man labor for other important work during the fall months.

Dr. Chilcott Is Wrong on Subject of Plowing.

(Continued from Page 4.)

Another is not working it enough. All plowing should be disked any time before turning under. This should be done as soon as the frost will allow in the spring and then again as soon as the crop is taken off. After plowing the best work is alternate disking and harrowing, enough to thoroughly mellow the surface and keep all weeds out until planting time. Another cause of failure is trying to farm where the soil is too shallow, and plowing up gopher clay and other mixtures which contain no available plant food.

It is only good agricultural soil that will respond to deep plowing. Some have tried deep plowing on the sand dunes and report failures. These lands and those where the gopher clay comes close to the surface are fit only for grazing purposes. There are some farmers who see no virtue in deep plowing, because their farms are situated on old river bottoms and basins, where there is water at no great depth; but some of them do not know it, and are apt to think deep plowing is not necessary on the dry farm—but they are not dry farming.

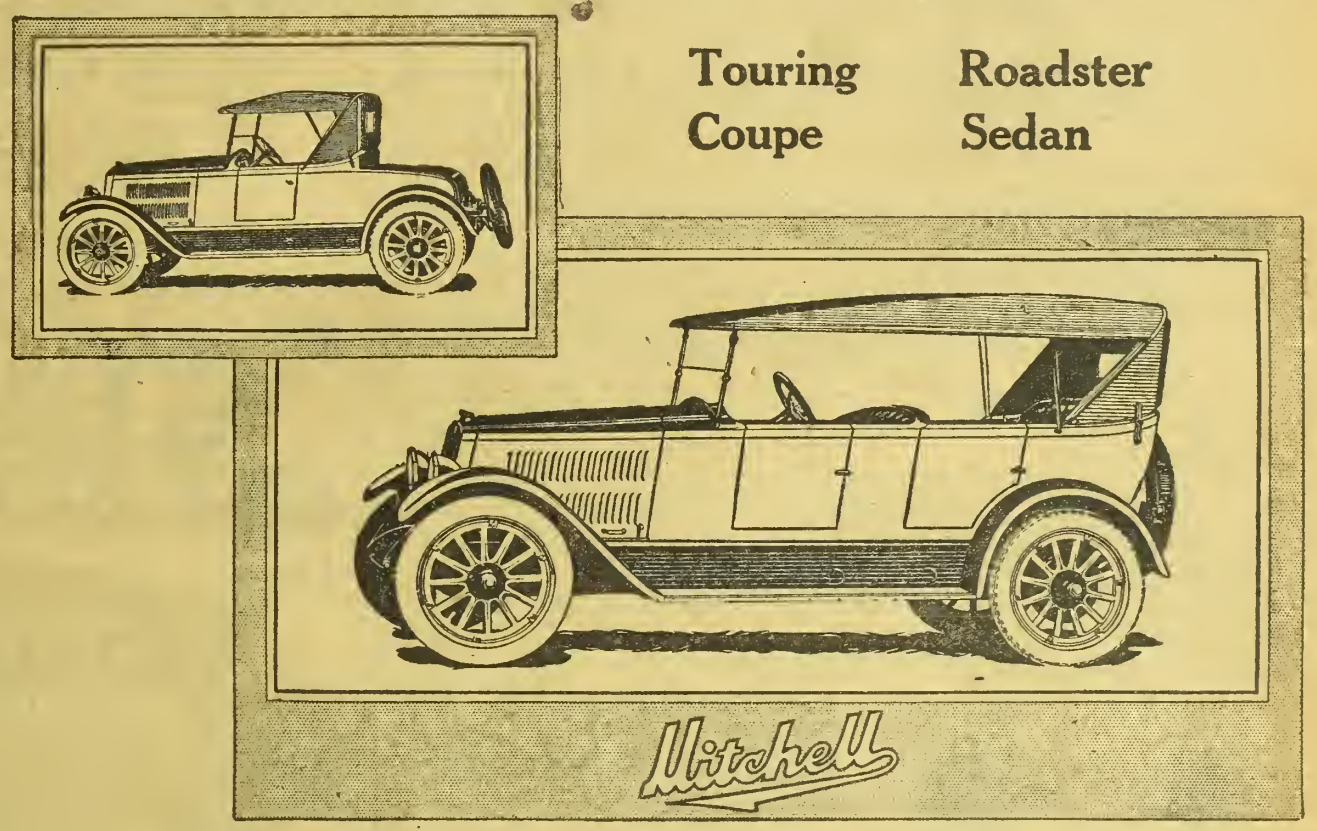
A widower had engraved on his wife's tombstone the words: "The light of my life has gone out."

A little later he married again, and one day was standing with No. 2 before his first wife's grave.

Reading the above sentiment, the lady inquired in a rather huffy tone: "Is that so?"

"Yes," replied he, "but I've struck another match."—Truth-Seeker.

Forget doubts and fears, and remember hopes and faiths.



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Racine, Wisconsin

The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Save Your Steps and Health.

Don't stand to prepare vegetables and fruits, sit down and if you do not have a rubber apron put a paper on your lap. Or better yet, saw the arms and back off a baby chair and sit on the stool at the table to work, iron, etc. By the way don't iron everything, no use ironing underwear and hosiery, nor dish towels and towels. I like to sleep on pillows and sheets fresh from the line, bone dry, of course. I like to smell the ozone. You can eliminate a lot of work and be neat and clean too.

When washing make it as easy as possible and get all the dirt out at the same time. Never boil everything in a bunch. A few years ago I saw a woman taking clothes from a boiler and among the dish towels was an embroidered baby bonnet! Wash the white clothes first sorting the nicest and cleanest of them. Boil and rinse them first all the way down, and remember, dirty water doesn't clean anything. If the weather is cold don't hang out the clothes the same day you wash, you'll take cold if you do. Put them in rinse water, divided as to kind, and leave until morning, except clothes which you do not wish to fade and the woolens. Hang them in the house. The next morning heat and blue the rinse water, wring out, put on wraps and a pair of canvas or canton flannel gloves and hang out the clothes. By hanging out of warm water in the morning the clothes will dry much quicker.

When the windows are sweating take a clean cloth and wipe dry; they will look fresh without slopping all around with water. I do not mean to always clean them so, but occasionally, and save a lot of work. Don't mop the same day you wash. You are too tired, wipe up the wet spots. Don't ever get down on your knees to mop. Do that for a better purpose.

To prepare the water for scrubbing, soften if hard, and put in about a tablespoon of kerosene to a pail of water and make a good suds. It is handy if you melt up soap and add a little borax and household ammonia, put in some water and let it boil until it is dissolved. If your floor is very dirty change the water often and rinse with clean, warm water sweeping it out of doors, then wipe dry. Any accidental bad spots scrub with a broom. You will be satisfied, much better satisfied than if you had mopped when tired, or with dirty, discolored water.

Don't stand and rub your dish cloth on a piece of soap; that is wasting time. Pour your hot water directly on the soap, or have some prepared soft soap. Have a dish drain too; they don't cost much. Eliminate that standing and wiping dishes, wipe nothing but silver and glassware. Scald the dishes and they will dry, even the cooking vessels; except the deep kettles you may wring the cloth and wipe them; (of course the dish cloth is clean). Scald all of them and drain the flat ware and dry on the back of the stove or in the oven. Then on wash day you won't have a line of dish cloths to wash,—no, make cloths of your flour sacks.

Don't wear yourself out polishing stoves and ranges. Get some enamel and enamel all except nickle finish and top of range which wash with suds. Wet a woolen cloth with kerosene and rub nickle parts, also teakettle, coffee pot, etc.

If the water is some distance from the house get the men to haul on a stone boat in barrels. Horses and a little time is cheaper than doctors, nurses, hired girls or taking time to hunt for wife No. 2. Barrels are cheaper than coffins.—Mrs. Rhoda E. Herron, Rifle, Colo.

Children Need Milk.

No food can take the place of milk in the diet of a child. If a mother expects her child to grow, to be well and strong, and to have good teeth, it is absolutely essential that she see to it that the child has milk every day. Every normal child should have from a pint and a half to a quart of milk a day, at least until he is twelve years old; and after that, until adult life and beyond, he should have a pint of milk a day. The mother who does not provide sufficient milk for her children, who does not train them to drink it, or if this is impossible, who does not furnish it to them disguised in their cooked food, is not fulfilling her duty. Whole milk is best. Skim milk can not take its place unless the child uses an abundance of cream and real butter. There are a very few children who cannot take milk because they are made ill by it, but such cases are extremely rare.

Some reasons why children do not like milk are:

1.—Milk is a bland, comparatively flavorless food. Young children who are early given meat or other highly flavored foods, foods which are highly seasoned with pepper or spice, or very sweet foods, often lose their appetite for milk because of its mild flavor. If candy or other sweets are eaten between meals, the liking for milk is quite certain to be destroyed.

2.—Children are naturally imitative and often from just a whim or temporary distaste for milk, begin to say "I don't like milk," or "I can't drink milk," because they have heard parents say it. Children should be taught a respect and a liking for all wholesome food. This is not possible if grown-ups or older children are permitted to criticize certain foods or express a dislike for them before children.

3.—Too much milk, as too much of any food, if taken at one time, may satiate the palate and leave an aversion for milk which only time and patience can overcome.

4.—School children have a habit of making fun of the occasional child whose sensible mother puts milk in his lunch box. If all the mothers would agree to send milk with the school lunch, and the teacher would explain to the children the value of milk, this difficulty would be overcome.

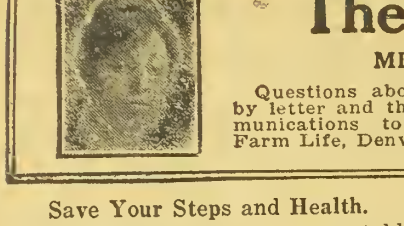
Some children can be tempted to drink milk if it is served in a colored tumbler (pink or red making an especial appeal), or if served in bottles with straws, or in glass measuring cups so that the child can make a game of measuring the amount he drinks.

The Bride's Library.

There are two books for which a bride finds much use her first year in double harness. One is the Bible, which she reads to teach her patience, and the other is the cook book, from which she learns to compound a satisfactory line of eatables, for 'tis all too true that the way to the heart, especially of a young man, leads through his stomach.

The Bible covers are not likely to become wet, except by an occasional tear, but the cook book is laid down in grease, molasses, butter, milk and water. The covers soon look like the baby's rag doll. Now a more or less bedraggled rag doll is all right, but anything used around the food is supposed to be clean and sanitary.

A bookbinding material of comparatively recent use is becoming very popular for cook books. It is a pyroxylin coated cotton fabric made to resemble leather. It is waterproof; can be washed over and over again without spoil-



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Tell us all this, and we'll tell you how many cups.

We'll say this anyway: Schilling Tea costs less per cup than any tea we know of—and certainly less than any tea selling at a lower price.

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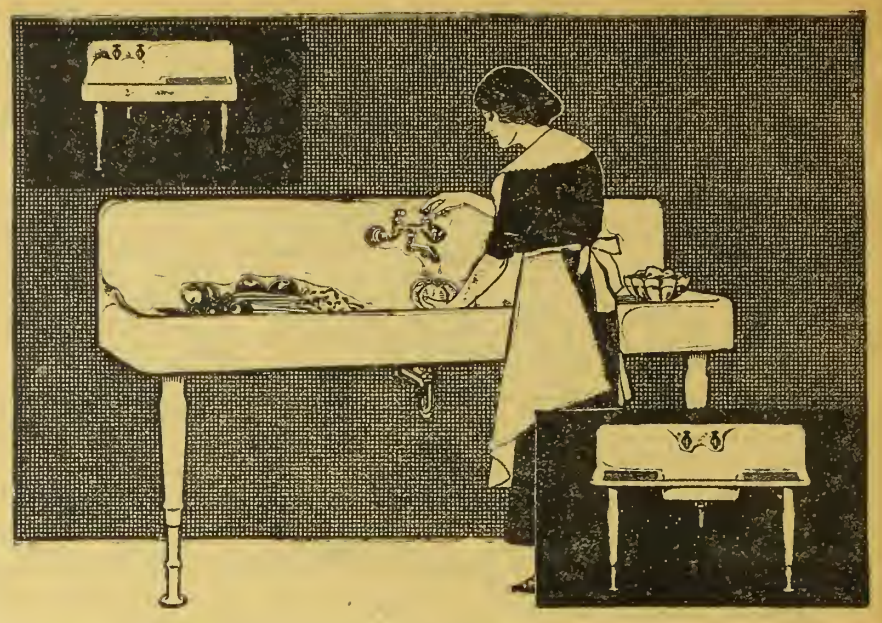

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Ways of Cooking Pork.

CARRIE E. FREDERICK, Montrose, Colo.

Now that "hog killing time" is over, and the beeves are butchered and packed away, our good farmer housewives begin to plan seasonable menus by which they can vary the meat dishes. The hams and bacon are going through the "smoke;" slabs of side met are salted down or pickling in brine, and it is to be hoped there will be plenty of the latter for baked beans, pork chowder and to fry in thin crisp slices occasionally for breakfast. Nothing is more satisfying, rolled in corn-meal and browned nicely, with a thickened milk gravy, and served with mealy boiled potatoes. There are strips of lean beef salted or smoked and hung to dry, other strips pickling for corned beef. The sausage is made and packed in jars or stuffed skins; the headcheese and scrapple, pickled pigs' feet and ears are ready for a hearty lunch; there is a big cake of suet and a five gallon can of lard "tried out;" so the thrifty housewife stands back, views it contentedly and pronounces it "very good."

There are many savory dishes that may be made, many appetizing ways of preparing meat so that it need not be served twice alike during the week. We will begin with pork.

We have gorged our stomachs with liver, fried plain, with onions, or "deviled;" we have had our prime rib and loin roasts, perhaps spareribs and saurkraut, but have we had baked spareribs with Yorkshire pudding? I recall a very satisfying dinner eaten at a farm house where I fortunately stopped at the noon hour when on a motor trip. "You are heartily welcome, but I warn you we have nothing but spareribs," said the genial hostess.

"But mother, they are not very spare," added her daughter; which we found to be a fact, some of the tenderloin having been left on. Baked in the drippings was a Yorkshire pudding, a dish to which my palate had been a stranger for many years. But I had not forgotten how it is made. I give it here: Beat two eggs until light, add one pint of sweet milk, a pinch of salt and flour enough to make a slightly stiff batter, two level teaspoons of baking powder. When the ribs are nearly done put them into another pan and pour the butter into the hot drippings. It will bake in 20 minutes, cut in squares and serve on the platter around the ribs. Accompanying this there were baked potatoes, mashed turnips, and pickled beets, with chili-sauce and chow-chow for condiments and an old-fashioned bread pudding for dessert. Could anything else have better satisfied our motor appetites?

Baked tenderloins with bread dressing makes a good dinner. Slice the meat, parboil it 15 minutes, season, put in a baking dish with the gravy and make a bread dressing seasoned with sage, adding a little chopped onion if liked; cover the meat with this and bake 35 minutes. With this serve plain boiled Irish or sweet potatoes and hot rolls or biscuits, with cheese and apple pie for dessert.

Or how is this? Score the rind on half a pig's head and bake 'till thoroughly tender and the rind is crisp. Accompany this with mashed potatoes, creamed onions, corn bread and cold-slaw or pickled red cabbage; hot ginger bread and baked apples for dessert. A friend says: "Finish up with a dyspepsia tablet."

To which I retort: "Don't stuff yourself with the meat and you'll not need the tablet." Though I admit this bill of fare is meant for a normal stomach, not a tender, finicky one.

I will close with a recipe for pork-apple pie, a recipe brought from Scotland and used in our family for five generations. There will be no need of a dessert with this: Use a deep two-quart baking dish. Cover the bottom of the dish with two-inch pieces of fresh pork, fat and lean, sliced thin; season with salt and pepper; cover this with thinly sliced apples, adding a little sugar and a sprinkling of either nutmeg or cinnamon as preferred; alternate the layers of pork and apples till the dish is nearly full; cover with a biscuit crust slit in the center, and bake for an hour in a moderately hot oven till meat and apples are tender.

Pinto Bean Recipes.

I have read with interest a letter from a New Mexico farmer appearing in your magazine commenting on ways to cook beans and asking for recipes. I have tried out several good ones which were sent out by O. H. Liebers, the Colorado representative of the United States Food Administration during 1918, and here they are for the benefit of this New Mexico and other readers:

Pinto Beans Espanol.

1 cup pinto beans, 1 onion, 3 or 4 fresh green chili peppers, 1 pint can tomatoes, salt, pepper and Worcestershire sauce, grated cheese.

Directions: Part I—Wash pinto beans well, soak over night, and cook in plain water. Part II—Fry the onion and chili peppers, both chopped fine, in butter drippings. When done add the tomatoes. Season with salt and pepper and one tablespoonful of Worcestershire sauce. When part two has cooked to a nice sauce, add part one, boiling hot, and simmer together for 20 minutes. Just before serving, four tablespoonfuls of grated cheese may be added. Let stand until the cheese melts. Spaghetti may be used in place of beans.

Pinto Bean Muffins.

2 cups bean flour, 2 tespoonfuls baking powder, 2 eggs, well beaten; 1-3 cup melted fat, 1 cup cold boiled pinto bean pulp, 1 teaspoonful salt, ½ cup milk.

Directions—Combine ingredients as given. Bake muffins in greased pan 20 or 25 minutes. Serve with brown gravy. This is a good border for pot roast.

Pinto Bean Pie.

1½ cups sugar, 3 eggs, well beaten; 2½ cups cooked beans, mashed fine; nutmegs to taste.

Directions—If the mixture seems too thick, a little milk may be added to form a custard much like that for pumpkin pie. The crust is prepared and the pie baked in much the same way as pumpkin pie.

Puree of Pinto Beans.

1 quart pinto beans, a ham bone or ½ pound salt pork, celery, parsley and onion, salt, 4 pepper corns and cloves.

Directions—Wash the pinto beans and soak over night. In the morning drain and put the beans into a saucepan and cover with hot water. Simmer as slowly as possible for three to four hours. As the water evaporates add more hot water. One hour before the beans are done, add a ham bone or half pound of salt pork, a bunch of fresh herbs—celery, parsley and onion—salt, four pepper corns and two or three cloves if desired. When done, pour the soup through a sieve, remove the ham bone or pork and seasoning, and rub the beans through the sieve; then add the pulp to the stock, add croutons.—D. W. L., Las Animas County, Colo.

Hard Butter And Cool Milk.

We know that the good old well built cellar keeps the butter hard and the milk cool and you'll probably need it for the butter or cream which is going to market; but how long are you going to keep taking three steps off the porch, walking some ten or twenty feet and then down eight more with every bit of cream and butter you use on the table, not to mention the left over foods and so forth, you want to save until the next meal? Because as we have said before, you really don't have to, you know.

Beside the much talked of iceless refrigerator, there are several other ways of keeping food cool and in good condition. There are cold shafts built into cellars, cold boxes—which are nothing more than well ventilated boxes, placed on the outside of a north window, so that the window is the door to the cold box. Then there are porous jars and California coolers. But here is a home made one from a home made idea, which is only another way of saying "original."

This was sort of a dumb waiter down a cold shaft in the home of Mrs. H. B. Teller at Byers, Colo. There was no cellar under the house, so under the pantry floor, with an opening in the floor itself, a shaft was dug down into the earth. This shaft is approximately four feet long and three feet wide. This is cemented up to within a foot of the top. The cement really should extend all the way to the top, as was later found by the users. The rest of the cooler consisted of a rack of three shelves, arranged like those of a drying rack. This is lifted by means of wires fastened at each of the four corners and drawn together in a central loop. Heavy picture wire passing over pulleys in the ceiling, is used instead of a rope to lift the frame and another pulley and small home made windlass are the rest of the lifting apparatus.

This rack is used to keep butter, cream, left over food, etc., and in all except the very hottest weather, is quite adequate, for the shaft maintains an astonishing coolness.—E. D.

You can find buyers from among our 50,000 readers for all the poultry and eggs that you have to sell. If you will send in a little "ad" for the "Farmers and Stockmens Exchange." A little "ad" in this department will do the business. Try it.

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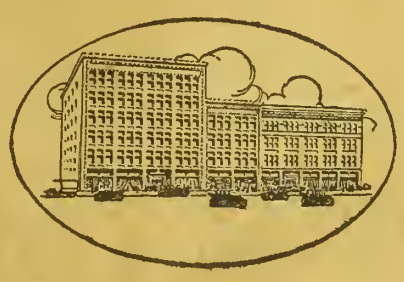

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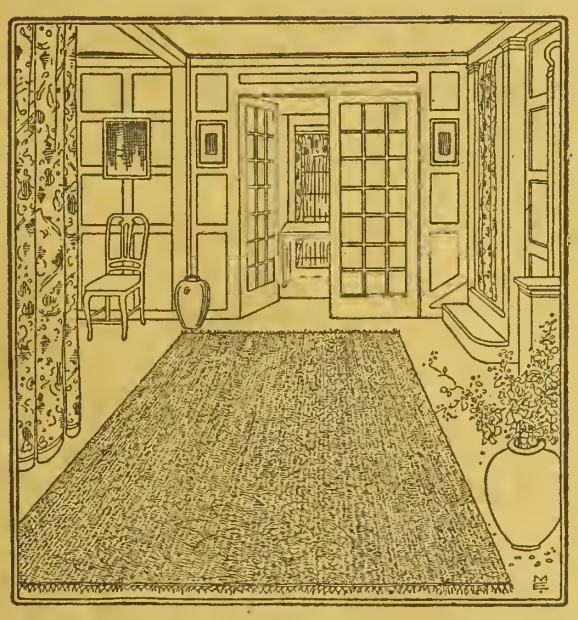

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The Curse of Our School System.

The act of 1789 in Massachusetts which created the school district was the worst piece of school legislation ever put on the statutes. Had it been limited to Massachusetts it would have been bad enough, but when copied by every other state it spread the curse broadcast and down through the generations. There is no telling how long it will take to get that law wiped off our statute books. Petty offices are hard to abolish.

The direct result of the 1789 act was the little one-room school in a district too small to support a decent school because of scarcity of children and lack of funds. The unit of our school system should be the county. The township is small enough for a school district, but the matter of district boundaries should be left to the county school board who survey the situation and place schools where they serve the greatest numbers.

Topography, roads, population, all these should determine the boundaries of a school district. On a county unit basis the taxes would be more justly used for educational purposes, and results would be greater for money expended.

The educational board should be the county's best men and women, selected not for political reasons or to deposit school funds in a certain bank, but for their broad understanding of school problems. This board should select the county superintendent from any place it sees fit. The schools must be taken out of politics, and this can only be done by making the superintendent an appointive office, and deposit school funds in the county treasury. The system is wrong as it now operates and the fault began back in 1789.—Successful Farming.

New Fashion Service.

All Patterns Now 12 cents Each: Address WESTERN FARM LIFE, Pattern Department, 1518 Court Place, Denver, Colo.

Please note change in price, a reduction from 15 to 12 cents which becomes effective on patterns ordered from this and subsequent lists. We also wish to announce that we have been able to make arrangements for mailing patterns from Chicago, instead of from New York. This means a saving of several days' time in filling orders. Please be sure to specify size, and to give your complete postoffice address.

5 GREAT NOVELTIES 20 cts. The glorious crimson **Wooflower** recently introduced by us has succeeded everywhere and proved to be the most showy garden annual. Nothing can surpass the mass of bloom which it shows all Summer and Fall.

We now have three new colors—pink, yellow and scarlet, as well as crimson. All these colors mixed. **20 cts. per pkt.**

With each order we send 1 trial pkt. each of **Giant Mochia**, most decorative foliage annual.

Salvia Hybrids, white, pink, striped, scarlet, plumed, etc., mixed.
Japan Iris, new hybrids, all colors. Magnificent.
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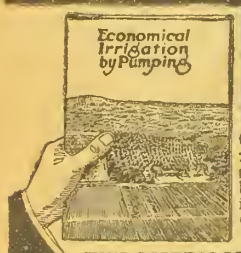

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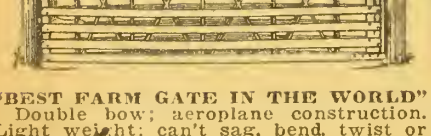

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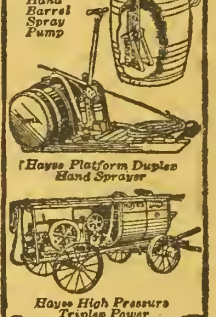

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Pruning An Old Orchard.

Will you tell me what to do with an apple orchard, which has not been trimmed for seven years? I went away and rented the place out and now the branches are so thick that it is next to impossible to get into the trees to pick the fruit. They are also so shaded that they do not get sunshine enough to color the apples. Would it be best to cut out a part of the large branches, or cut off the tops. What would be best to do with the wounds made by removing the large branches? Would you recommend painting them?—M. C., Idaho.

Fruit trees that have been neglected for a number of years should not be pruned too heavily one season, because if they are, this will cause excessive wood growth at a sacrifice of fruit production. Therefore, I would say that trees of this character should be pruned rather lightly, keeping in mind the fact that it will take at least two or three years to remove all of the wood that should be taken out of the trees. For your conditions then I would say that you should remove all dead or diseased limbs and burn those that are affected with blight or other serious disease. All broken limbs should also be removed, as well as limbs which seem to strike against the body of the tree. Large limbs should be removed only when absolutely necessary and then long stubs should not be left, as they will not heal over. Any large limbs that are removed should be painted over with white lead. When two or more limbs extend in the same general direction, the weaker one should be removed. Thin out the head of the tree enough to admit plenty of sunlight and air to all parts. If you will follow these suggestions, I think that you will have no difficulty in pruning these neglected trees. —C. C. Vincent, Horticulturist, Idaho Experiment Station.

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Big Horses In Demand.

Prices on good Percherons are going up rapidly. The draft horse is coming back. In January an Illinois Percheron sale had a $710.00 top on mares. In February a Kansas Percheron sale had a $1,000.00 top on stallions and a $680.00 top on mares. In February an Iowa Percheron sale had an $875.00 top on stallions and $515.00 on mares. In February another Iowa Percheron sale had a $4,800.00 top on mares and $2,700.00 on stallions. In this sale twenty-one mares averaged $910 and thirteen stallions, including a number of yearlings, brought $518 a head. Thirty-four head made a general average of $760.

A farmer in England writes that he is coming to America to buy 50 head of Percheron mares. The United States and Canada have already sent two exportations each of Percherons to Great Britain. A party from South America writes that they will soon be ready to come to North America to buy Percherons.

Of the farm demand W. S. Corsa says: "Farmers are determined bidders in country sales and prices for good horses have gone $35 a head in the last thirty days, while mules are bringing from $800 to $1,000 a pair."

Of the shortage W. T. McGreavy of the McGreavy Transfer company, Minneapolis, says: "What we teaming contractors want is good horses. We don't want scrubs, light of weight, incapable of hard work and selling cheap. We want horses that will weigh 1,700 pounds or more and we are willing to pay for them. A teaming contractor in this city paid $800 for a pair of five-year-olds yesterday that weighed 3,200 pounds. The big trouble is that the farmer expects us to pay a high price for a green horse, one that is liable to distemper and isn't properly broke. The buyer of such a horse is taking a big chance that he'll die or be laid up and, consequently, won't pay as much for him. Give us good, sound, big horses with a little experience behind them. We can't get enough of them and the demand will never run out."

Sow Hulled Seed Now.

Editor Western Farm Life:

I notice that Dr. Cooke in issue of February 1 advises sowing unhulled sweet clover seed from now on till fall. I wonder if that is just what the doctor meant? We have been raising sweet clover for several years both the yellow and the white varieties and have always made a practice of sowing the hulled seed in the spring along with a nurse crop of wheat or oats.

We have never had any trouble securing a stand where the soil was well compacted before sowing. We have never sowed the unhulled seed except on the snow or early before freezing weather is over in order to have the frost crack open the hull.

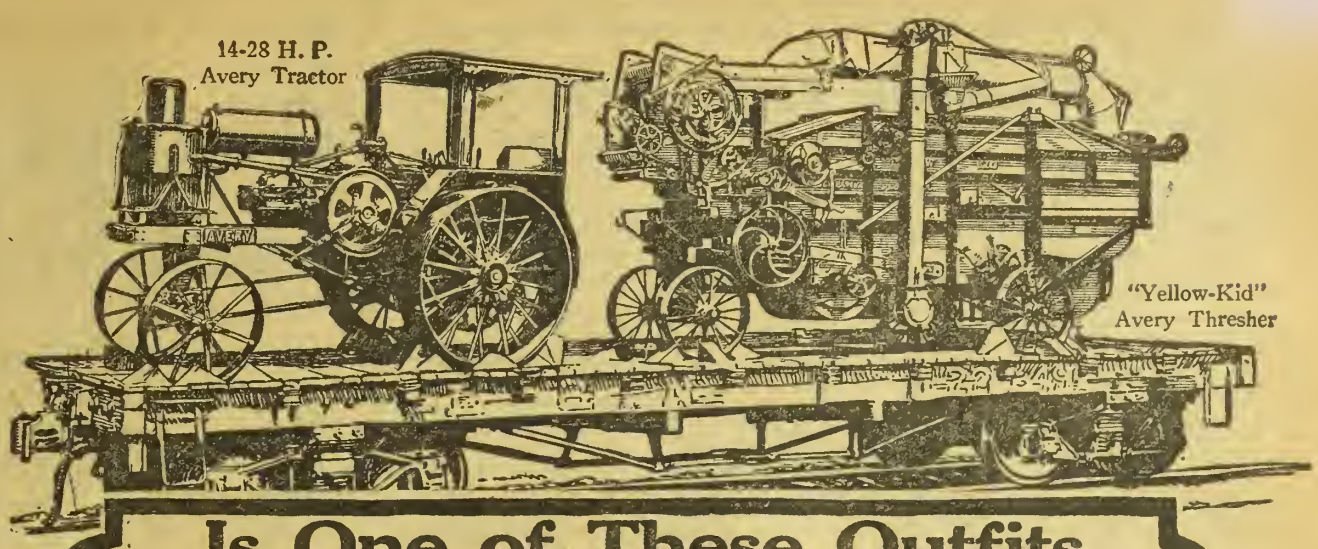
But this spring we wish to sow some unhulled seed with a nurse crop and wish to know if Dr. Cooke is right about sowing the unhulled seed any time in the spring.

We prefer to raise the yellow blossom variety as it makes better pasture, can be grazed closer without killing it out and is easier handled for the seed crop. Another point in its favor where the bee man is concerned is the fact, that it blooms about two weeks earlier than the white variety and thus furnishes a valuable bee food at a time when most needed.—W. E. Carkhuff, Olathe, Colorado.

I was made to say something I did not intend to say, namely sowing unhulled seed from now on. I should have been quoted as saying, "sow hulled seed in the spring." The plan you follow for getting a good stand of sweet clover is, in my opinion, the best. I am glad to notice your mention that you sow on well compacted soil. Undoubtedly very many failures of good stands of sweet clover have been due to too loose a soil, which necessarily dries out very rapidly..

My observations the past season show that what you say about the yellow sweet clover is absolutely correct. As an all around plant in making comparisons between white and yellow, I have found in Colorado that the yellow is the best, one very important point being that the yellow, as you say, is at least two weeks ahead of the white in maturing. I suppose you have water to irrigate with which gives you the privilege of sowing a nurse crop with your clover. For those who are doing what is called dry farming, that is, using the natural precipitation, I am most certainly against nurse crops, and believe in utilizing all the moisture and fertility in the soil to get good stands of clover of whatever kind I am sowing.—Dr. V. T. Cooke.

I send you my renewal of subscription for two years and I send you one new subscriber for Western Farm Life for two years. You can send me the Income Tax set.—Reinemer, R. F. D. 1, Arriba, Colo.



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DO you realize what this 14-28 H. P. Avery Tractor and Avery Thresher could do for you? With it you could Averyize all your farm work. With the tractor you could do your spring plowing *on time*—get your seed bed in condition for a bumper crop. You could use the tractor not only for plowing but also for pulling harrows, drills and similar tractor-drawn tools. Later you could use it for pulling the binder and operating the thresher. Also for filling the silo, sawing wood, grinding feed, pulling road graders, etc. You could use this Avery Tractor profitably *every month* in the year.

This is one of the six sizes of Avery Tractors built with "Draft-Horse" Motors, renewable inner cylinder walls, adjustable crankshaft bearings, kerosene gasifier, etc., and "Direct-Drive" Transmission which gives you the greatest percentage of the power at the drawbar and *all* of it in the belt, and which is always in direct-drive in high, low, reverse or in the belt.

With this Avery Thresher you could do your own threshing. Not only thresh when you are ready and at a lower cost, but you can also be sure of saving your grain with this thresher, for it made the champion grain-saving record of 99 9-10%, which beat even the government tests.

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includes tractors for every size farm. Six sizes, 8-16 to 40-80 H. P. with "Draft-Horse" Motors and "Direct-Drive" Transmissions. Two small tractors, Six-Cylinder Model "C" and 5-10 H. P. Model "B." "Self-Lift" Moldboard and Disc Plows, Listers and Grain Drills, "Self-Adjusting" Tractor Disc Harrows. Also roller bearing Threshers, Silo Fillers, etc.

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Motor Farming, Threshing and Road Building Machinery

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(Continued from Page 6.)

the productive demands, however great, that, in the interest of all the people, shall be made upon them. I venture, moreover, this prediction: that in this hour of the country's supreme need the farmers of the country will, through the Farm Bureau and other great farm organizations such as the Grange and the Farmers' Union, prove to be the intelligent, loyal, and conservative force that shall conserve and maintain our most dearly bought and our most highly cherished institutions, economic and political.

Enclosed you will find $2 which you will please give my account credit for and send Western Farm Life to this address until further notified. I thank you for all past favors and wish you the best possible success in the future. I consider your paper one of the very best in the Rocky Mountain states.—F. M. Shank, Creston, Mont.

Mr. Corderlan—Is this the office of Cento's Certain Cure?

Patent Medicine Man—Yes.

"Gimme six bottles for my wife."

"Tried all other remedies without success, eh?"

"No, she ain't ill at all, but I saw in your advertisements where a woman wrote after taking six bottles, 'I am a different woman!'"—The Medical Pickwick.

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These seeds are miles ahead of all others. They are hardier, purer, possess greater vitality, and will yield more to the acre than any seeds you ever used. They are your best investment.

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Is an extremely hardy strain with a wonderful branching root, and rarely winter-kills. It withstands extremes of temperature that often range, in our mountain valleys, from 30 degrees below zero in winter, to 110 above in summer. This seed is acclimated to the arid regions, cold climates, and the higher altitudes. That is why the yield is so large.

Ask for our "Mile High" grade of alfalfa. It is guaranteed to be free from dodder and other ohnoxious weeds. It is plump, healthy seed, bright as gold, and of the highest purity and vitality.

Our "Grimm" or "Everlasting" Alfalfa

Is grown in Colorado's mountain valleys, and is guaranteed pedigreed stock. It is the hardiest, most productive of all alfalfas. No better, purer, more virile seed is grown anywhere.

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Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, WESTERN FARM LIFE, Denver, Colorado.

Care of Brooder Chicks.

FRANCES H. BROWN. Kit Carson, Colo.

In all my twenty-five or more years' experience in chicken raising I seldom lose a baby chick, or any chick for that matter, except by accidents, rats, hawks, or some other prowling enemy, and these losses are not great. My "secret of success" was learned in my early married life. It's so simple, so sensible and easy—yet, very few, even professional chicken raisers, know anything at all of it. It positively insures the lives of practically all your baby chicks, especially from the dreaded white diarrhoea.

The first week of a chick's life is the danger period—safely over this his chances for reaching the crowing or laying age are pretty well assured, if he doesn't fall in the frying pan. The baby chicks must be kept dry and comfortably warm at all times. When they are comfortable they keep a satisfied or sleepy little song as the case may be, or busily chatter as they gobble up their food. When a cry of distress is heard it must be heeded at once.

One spring my incubator babies came peeping out in extremely cold, stormy weather. Not having a sufficiently warm shelter outdoors I brought the brooder in the kitchen. In moving that spring a section of the pipe had been lost and a short piece of gas pipe was pressed into service as a substitute. Try as I would, I could not make it fit up good and tight, consequently the temperature could not be managed successfully. I improvised an artificial hovering "stepmother" out of shredded rags and placed the chicks under it; filled, trimmed and lighted the lamp and went to bed, with a clear conscience, expecting to get a good night's rest. But, alas! for all my plans—pretty soon a chorus of cries for "help" came floating to me from the brooder. Again and again I arose in answer to their call. They simply could not be made comfortable for any length of time, no matter what I did. Thoroughly exasperated, cold and sleepy myself, I procured a basket, put some soft cloth in it and dumped every chick inside the basket and took them to bed with me. My, but it was comforting to hear their contented "sweet," "sweet," "sweet," as they cuddled down under the warm covers.

"What in the world are you doing?" asked by sleepy husband. "Taking care of the chickens," I replied, "that old brooder won't do it."

"Well," he ejaculated, "of all things I ever heard of—if that doesn't take the cake; all you lack of being an old Plymouth hen is the feathers."

"Well," I retorted, "anybody that can sleep while helpless babies are crying with cold must have a gizzard instead of a heart."

"They seem to be pretty thankful," he smiled, and we both literally, for once, went to sleep with the chickens.

I give nothing for the first twenty-four to thirty-six hours, put an inch or so of dry warm sand on the brooder floor, and place the chicks in after the lamp has thoroughly warmed it up. I never use a thermometer; the chicks themselves are the best one you can find. They are sure to give the alarm whether the temperature runs up or down, and it's an easy matter to tell whether the little downy balls are too hot or too cold. If they are comfortable each one stretches out all to himself in the most interesting careless little heap. When too cold they will pile up together, each one trying to get under the others, as they utter their pitiful little cry of distress, and if not attended to at once you will quite probably have some "smothered chicken"—not the delicious, edible sort, however, or indeed, much prospect of future fries.

But in all my experience I never had a brooder chick smothered that was not from being cold in the first place. For their first feed, after I have seen that each little fluffy has had a drink of clear water, I give hard boiled eggs, crushed up fine, shell and all, and made quite peppery with black pepper and a pinch of salt; then follow a variety of feeds. Nice light, well cooked cornbread, just as I like it myself, rolled raw oats, millet seed, or prepared chick food and cheese made of milk, salted and peppered as for table use, and I might add that this is a favorite with the chicks evidently. I never give heavy, sloppy or spoiled food.

I keep skim milk where they can help themselves and if by chance it be forgotten, the chickens will yelp and yelp, keeping up their hungry call so insistantly that I am half inclined to think they had not been fed, until I discover a suspiciously dry milk trough. After greedily gulping down their milk they go off to scratch contentedly until the next feed time rolls around. Proper feed, care and cleanliness are my watchwords. Doctoring or doping are unknown, or at least unpracticed and unnecessary arts in my chicken yard. Their life insurance is taken out in infancy with a fully paid up policy.

Advice on Baby Chicks.

The care of baby chicks is most important. They must be kept warm and comfortable, have proper feed and water, and be carefully watched to detect any indications of sickness and disease that may appear, if they are to get the necessary start in life to enable them to grow and develop into large, hardy chicks and mature fowls.

When the mother hen is hatching she should not be disturbed except to remove the shells, unless she becomes uneasy and steps on or picks the chickens. In such cases the chickens should be removed as soon as dry. Place them in a basket or box lined with flannel or some other soft material and cover the top, keeping the basket in a warm place until the remaining eggs left under the hen are hatched.

Newly hatched chicks are delicate little fellows and must be treated with care. They hatch in a temperature of 102 degrees to 105 degrees F., and their first and most important requirement for the next 48 hours or more is warmth. As soon as the chicks have been taken from the nest or incubator and placed in the brood coop with the mother hen, or in the brooder, they must be kept warm and comfortable until they are old and strong enough to run about and withstand the changes of weather.

When brooded by hens they remain under the mother of their own accord nearly all the time for the first two or three days. If they are to be reared in a brooder, the brooder should be warmed to the proper temperature (about 95 degrees F.), regulated and made ready in advance. Never wait and heat up the brooder after the chicks have been put in. This same rule applies if you purchase day-old chicks instead of hatching them. Always have the brooder ready so that when they reach you they can be transferred at once from the shipping box in which they arrive to the brooder, where it is warm, roomy, and comfortable.

If the mother hen should die, or in case the brooder is ordered and fails to arrive in time, a temporary or home-made brooder may be made as follows: Take a box, without cover, about 18 to 24 inches square and 10 inches high. In one side next the bottom cut an opening 3 inches high and 8 or 10 inches long for the chicks to pass through. Protect this opening with a strip of woolen cloth; tack at the upper edge, having perpendicular slits cut from the lower edge to within one-half inch of the top to allow the chicks to pass through. This box covered over the top with a heavy blanket or any warm cloth may be used without heat when the room temperature where the brooder is located is 70 degrees F. or over. If the temperature is lower, however, or the chicks appear to be cold, take a large bottle or jug and fill with hot water and place inside the box, refilling it as often as necessary to keep the chicks warm and comfortable.

Baby chicks should not be fed for from 24 to 36 hours after hatching, and will not suffer if given no feed until the third day. The yolk of the egg which is absorbed by the chick when hatching furnishes all the nourishment required during that time. After the third day they should be fed four or five times daily for the first week or ten days, but only a small amount at a time. Chicks will grow faster if fed four or five times daily than by feeding three times daily, but they should be given only what they will eat up clean each time. Overfeeding will do more harm than underfeeding; therefore care should be exercised and only a sufficient amount given each time to satisfy their hunger and keep them exercising.

The first feed should consist of johnnycake or hard-boiled eggs, mixed with stale bread crumbs or pinhead oatmeal, using a sufficient amount of the latter to make a dry, crumbly mixture. These feeds or combinations of feeds may be used with good results for the first week; then gradually substitute for one or two feeds daily a mixture of equal parts of finely cracked wheat, cracked corn, and pinhead oatmeal or hulled oats, to which may be added a small quantity of broken rice, millet, rapeseed, and charcoal if obtainable. This mixture makes an ideal ration. If corn can not be had, cracked kafir corn, rolled or hulled barley may be substi-

How to Prevent White Diarrhea

Dear Sir: Last spring my first incubator chicks when but a few days old began to die by the dozens with White Diarrhea. I tried different remedies and was about discouraged. Finally, I sent 63c to the Walker Remedy Co., Dept. 443, Waterloo, Ia., for a box of their Walko White Diarrhea Remedy. It's just the only thing for this terrible disease. We never lost a single chick after the first dose. We raised 700 thrifty, healthy chicks, where before we never raised more than 100 a year. I'd be glad indeed to have others know of this wonderful remedy. Ethel Rhoades, Shenandoah, Iowa.

Don't Wait

Don't wait until White Diarrhea gets half or two-thirds your chicks. Don't let it get started. Be prepared. Write today. Let us prove to you that Walko will prevent White Diarrhea. Send 63c for box on our guarantee—your money back if not satisfied. Walker Remedy Co., Dept. 443, Waterloo, Ia.—Adv.

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In foreign lands the modernized dwelling is found only in the better sections of the larger cities. Everywhere in America you find the piano, the vacuum cleaner, washing machines, up-to-date heating systems, telephones and numberless electrical appliances.

There is a well-kept look about residence, store or out-buildings, with an atmosphere of prosperity and content. Did you ever stop to realize why this is so; how this condition was brought about? It is largely due to advertising.

Stop and think how many of the foods you eat, the things you wear and other articles entering into your everyday life, you first heard of through advertisements. You will then realize what a part they do play, or should play, in your daily life.

Read the advertisements regularly and thoroughly, if you are not already doing so. They mean more to you than you can tell.

Have you had trouble or misunderstandings over the division of water for irrigation? Do you know if you are getting all the water to which you are entitled? The Burnham measuring device is the answer.

The R. Hardesty Mfg. Co.
1837 Market St. Denver, Colo.

We manufacture a complete line of Irrigation Supplies, such as Flumes, Pipe, Gates, and other accessories. Write for catalogues and information.

DO NOT FORGET TO ORDER THAT PLANO BINDER

While they last at $170

Small payment down, balance on delivery. All kinds of repairs carried.

DENVER IMPLEMENT CO., 1429 Wazee Street Denver, Colorado

Sick Baby Chicks?

There is only one way to deal with baby chicks and that is to keep them well. Doctoring a hundred or more chicks is mighty discouraging work.

It's pure carelessness to lose more than 10 per cent of chicks, from hatching to full growth. Many lose 40 per cent to 60 per cent, and even more. No profit in that.

Our book, "Care of Baby Chicks" (free) and a package of Germozone is the best chick insurance. WITH BABY CHICKS YOU MUST PREVENT SICKNESS—NOT ATTEMPT TO CURE. "I never had a sick chick all last season"—C. O. Petrain, Moline, Ill. "Not a case of white diarrhoea in three years"—Ralph Wurst, Erie, Pa. "Have 800 chicks now 5 weeks old and not a single case of bowel trouble"—Mrs. Wm. Christiana, Olive Ridge, New York. "Two weeks after we started last spring we were a mighty discouraged pair. Every day from three to six chicks dead. A neighbor put us next to Germozone and we are now sure if we had had it at the start we would not have lost a single chick"—Wm. E. Shepherd, Scranton, Pa.

GERMOZONE is a wonder worker for chicks, chickens, pigeons, cats, dogs, rabbits or other pet or domestic stock. It is preventive as well as curative, which is ten times better. It is used most extensively for roup, bowel trouble, snuffles, gleet, canker, swelled head, sore head, sores, wounds, loss of fur or feathers. 25c, 75c, $1.50 pkgs. at dealers or postpaid.

GEO. H. LEE CO., Dept. F-28 Omaha, Neb.

tuted. A commercial chick feed containing a variety of grains may be used instead if desired, and can be bought from most feed dealers.

How to make johnnycake:

Cornmeal, 5 pounds.

Infertile eggs (tested out from sittings or from an incubator), 6.

Baking soda, 1 tablespoon.

Mix with milk to make a stiff batter, and bake thoroughly.

Note.—When infertile eggs are not available, use a double quantity of baking soda and add one-half pound of sifted beef scrap.)

When the chicks are from 10 days to two weeks old, a dry growing mash composed of the following should be given:

2 parts, by weight, of bran.

2 parts middlings.

1 part cornmeal.

½ part, or 10 per cent, sifted meat scrap.

When the chickens are 8 or 10 weeks old, add 1 part of ground oats and increase the meat scrap to 1 part.

This mash may be placed in a hopper, where it will not be wasted, and left before the chicks at all times.

As soon as the chickens are old enough and will eat whole wheat, cracked corn, or other grains, the small sized chick feed may be discontinued and the larger sized grains fed instead. In addition to the grain feed they must be supplied with grit, oyster shell, and charcoal at all times, and the better way is to place these in a hopper, hanging it in a convenient place where the chicks may help themselves. If chicks are kept in confinement they must be furnished a liberal supply of tender, green feed, like lawn clippings, lettuce leaves, and such other things as may be available.

Whenever possible, however, chicks should be given grass range, when they will supply their own green feed, catch bugs, worms, etc. Chicks that are allowed to run on a grass range are usually strong and thrifty and will grow much more rapidly than those that are kept in confinement. In addition to other feeds, the chickens' growth may be hastened considerably by giving them sour milk to drink. Chickens are very fond of milk in any form and will eat and drink a liberal supply of it. It may be fed either sweet or sour, but the latter is more desirable. Sour milk will help to keep chickens healthy and is one of the best things that can be fed to promote rapid growth and development. When milk is fed, the amount of meat scrap in the mash may be reduced one-half.—U. S. D. A. Circular No. 1.

Pullets Are Doing Fine.

Poultry Department,

Western Farm Life.

I want to tell you that my hens beat those you told of in your issue of January 15 of Aroya for August. Forty-nine hens averaged 14.3 eggs. They have kept laying some all winter and are doing fine now. The April pullets commenced laying early in January, during February the 56 hens averaged a little over 10 eggs each. Before the close of February, 18 out of the 19 of the April pullets were laying. They are barred Plymouth Rocks. Considering our cold climate I think these chickens are doing very well.—Mrs. Oliver Mansfield, Hillside Ranch, Laramie, Wyoming.

Culling the Flock Pays.

William Gieck, on the north end of North Table Mountain, owned about 250 Leghorn hens, some of them mighty good hens as hens go, and some of them mighty poor, according to his ideas. Mr. Gieck believes that the hen that will not produce 80 to 100 eggs per year, minimum, is imposing on good nature, and he made up his mind to get rid of them. The 250 have been graded and culled and results obtained as follows: 60 of the highest producers are now in his breeding pen, from which he takes all eggs for setting. They are the 150 to 200 egg hens, the right kind of breed from which to bring up the flock towards the 300 egg kind.

Out of the remaining 190 or so he took out 36 of the bad ones of poor capacity, narrow and pinched, kept them separate for six days and they laid six to nine eggs per day in the same pens that they were accustomed to living in while the rest of the flock laid practicaly the same number that they did before culling. The 150 hens were culled further on March 4th and 54 were thrown out as culls and doubtful payers, these will be kept separate for a week and records kept of both pens and results reported later. Sixty hens in the breeding pen are laying 45 to 48 eggs per day; they are the best egg type hens. The other 150 before culling were laying 70 to 80 eggs. It is expected that the 54 culls will lay a few, 12 to 20 per day, but they are the kind that do not pay for the feed over a year's time, and will be sold. As a result of the culling Mr. Gieck has about 125 good hens left and is getting as many eggs as before with 250 hens, and of course has just half the feed bill to charge up.

This culling and records are part of the program of work of the Fairmount Community Farm Bureau. More demonstrations are to be made and reported later.—Jefferson County (Colo.) Farm Bureau Reporter.

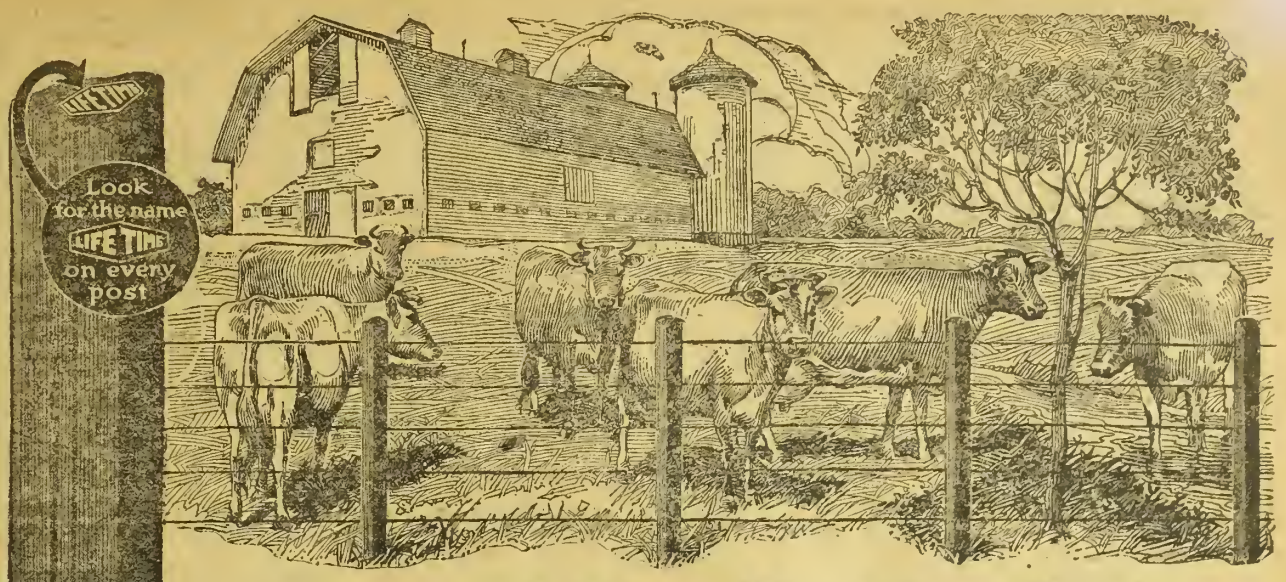
$584 Saved on Clothes.

In two classes on the remodeling of clothing, conducted near Gooding, Idaho, by Miss Esther Wold, clothing specialist of the University of Idaho extension division, in co-operation with Miss Nina B. Huyck, home demonstration agent, savings of $332.75 were made. These savings were the difference between the value of the completed garments and the cost of new materials used. In a millinery class in Rupert, 18 hats were made, having a total value, when completed, of $296.75. The cost of new materials was $45.28, leaving a saving of $251.47.

Hog Millet a Good Crop.

To the Editor:

I want to give you some information about hog millet. A great many people think it is good only for chicken feed, but when ground it makes a good hog feed, as good as corn. It will make a cow produce more cream than any other grain and it makes good horse feed, but should be mixed with bran or something else to make it more bulky, as it is too fine when ground and sometimes causes fatal stomach trouble in horses. When cut at the right time and stacked it makes a better hay than any Kansas or Nebraska hay ever fed; that is after the millet is threshed. Hog millet should be planted from the 20th of June to the 4th of July in this section, and is ready to cut in 60 days from time of planting, if there is moisture enough to germinate the seed quickly. It is what I call an eleventh hour crop, as it gives us a chance to accumulate moisture before planting. It yields as much as 30 bushels per acre on dry lands under favorable conditions.—L. K. Smith, Briggsdale, Colo.



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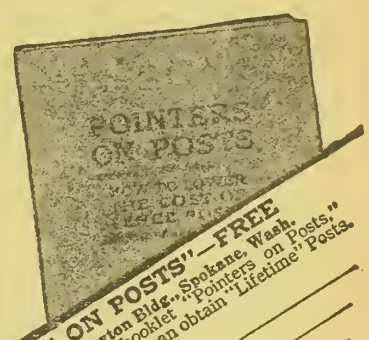

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Earth augers, rock drills and combined machines. Engine or horse power. *Write for easy terms and free catalog.*

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Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LEGHORNS

SINGLE COMB BROWN LEGHORN EGGS $8 per 100. Erle Smiley, Seward, Nebr.

SINGLE COMB WHITE LEGHORN EGGS $8 per 100. Erle Smiley, Seward, Nebr.

BUFF LEGHORN EGGS $ 8 PER 100. ERLE Smiley, Seward, Nebr.

S. C. WHITE LEGHORN EGGS; PUREBRED, $8 per 100. Mrs. Lawrence Ricklefs, Troy, Kan.

KYFFIN'S BUSINESS BUFFS—EGGBRED S. C. Buff Leghorns. Mrs. J. W. Kyffin, R. F. D. 2, Box 142B, Pueblo, Colo.

ROSE COMB BROWN LEGHORN ROOSTERS $1.90; eggs 6½ cents each. State Winners. Rufus Standiferd, Reading, Kansas.

S. C. WHITE LEGHORN BABY CHICKS TO your door from Eggs-a-day-line; $20 hundred; elso eggs. S. Pelitier, Concordia, Kansas.

PURE SINGLE COMB BROWN LEGHORNS, bred to lay. Eggs $8, 100; $4.50, 50; $2 setting, prepaid. Chas. Bowlin, Olivet, Kansas.

BABY CHICKS. BOOKING ORDERS NOW. Single Comb White Leghorns, selected stock, best laying strain. Gilbert Anderson, Norfolk, Nebr.

SINGLE COMB WHITE LEGHORNS—EGGS, $1.75 for 15 prepaid parcel post, $6 per 100, express. Baby chicks, 18c. Mrs. C. C. Cole, Levant, Kansas.

PUREBRED ROSE COMB BROWN LEGHORN eggs, $8 per hundred, pen $3 setting, baby chicks 20 cents. Prepaid. Mrs. H. Lee Smith, Route 2, Kanopolis, Kansas.

PUREBRED SINGLE COMB BROWN LEGHORNS, exclusively. Eggs $1.50 per setting. Incubator lots, 8 cents per egg prepaid. Jacob P. Miller, Fowler, Colo.

FARMERS IF YOU WERE BETTER ACQUAINTed with the Buff Leghorn you would have more eggs. Baby chix and hatching eggs now ready. Champney, 2057 So. Broadway, Denver.

BABY CHIX—BUFF LEGHORNS MARCH 10TH, weekly hatches after this. Other breeds in any quantity. Book your orders early to avoid disappointment. Champney, 2057 So. Broadway, Denver.

SINGLE COMB. BUFF LEGHORNS—SELECT heavy layers; vigorous range stock. From best breeders. Eggs, $4.00 per 50; $7.50 per 100. Mrs. J. Rose, So. Locust St., Grand Island, Neb.

QUALITY EGGS FOR HATCHING. ROSE COMB white Leghorns 100, $8. Large 5-pointed single comb brown, 100, $7. Fine winter laying strains. Oakgrove Poultry Farm, Dannebrog, Nebr.

S. C. WHITE LEGHORN COCKERELS $2.50 each, three for $6.75. Booking orders now for eggs for March and April delivery; $1.50 for 15, 8c each in lots of 30 or more. Wm. A. Draves, Lemoyne, Nebr.

SINGLE COMB BUFF LEGHORN EGGS FROM our "Heart of America," and State Show winners, $2, 15; $5, 45; $10, 120 postpaid. Cockerels. Cockbirds, same breeding, $5 each. Pearl Haines, Rosalia, Kansas.

WINTERLAY—BARLOW'S WELL KNOWN strain, Hoganized Single Comb White Leghorns, standard. Bred to lay and do it. Flock of 160 laid 146 eggs January 17th. Eggs, chicks, catalog. Barlow & Sons, Kinsley, Kan.

SINGLE COMB WHITE LEGHORN HATCHING eggs (Young's Strain), from my Iowa and Nebraska State Show Champions. (Trapnested. My prirces are no higher than from common stock. Mating list. C. G. Gould, Alma, Neb.

BABY CHICKS—S. C. WHITE LEGHORNS, from Hogan tested, selected, early laying stock. All eggs from my own raising. Price for February and March setting 25c each, post prepaid. Cash with order. Please order early. Ivar Johnson, Fremont, Neb.

EXTRA GOOD SINGLE COMB WHITE LEGHORNS. Our flock is mated to produce results. Pure white heavy layers mated to sons of high record hens. (272 to 307 eggs per year at Oregon station). Eggs $7 per 100, setting, $1.50; order now. E. D. Allen, Route 1, Hastings, Nebr.

RIVERSIDE POULTRY FARM SINGLE COMB White Legborns. Heavy winter layers. Today, Jan. 1, we gathered 330 eggs from 450 pullets and 200 yearling hens. We have been breeding our Leghorns for 15 years to lay more eggs than common hens at all times, especially in winter when eggs are high. We breed from nothing but winter layers. Get Walker's strain and get winter layers. Baby chicks and hatching eggs for sale. Prices reasonable. Write for circular and price list. H. D. Walker & Sons, La Junta, Colo.

PLYMOUTH ROCKS

WHITE ROCK EGGS $8 PER 100. ERLE Smiley, Seward, Nebr.

CHOICE BUFF ROCKS—EGGS, 15, $2; DELIVered. J. W. Ragan, Medicine Lodge, Kansas.

BARRED PLYMOUTH ROCK EGGS, SETTING of 15, $1.50. Address John M. Mischke, Route 3, Loveland, Colo.

BUFF ROCK EGGS, QUALITY, SIZE AND LAYers; $8 per hundred. W. K. Stillings, Cummings, Kansas.

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RINGLET BARRED ROCK EGGS AND DAY-OLD chicks. Write for prices. Mrs. C. N. Bailey, Lyndon, Kans.

PUREBRED BARRED ROCK COCKERELS, $3; winter laying strain. Eggs, 15 for $5. E. Plessinger, Cheyenne Wells, Colo.

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WINTER LAYERS! BARRED PLYMOUTH ROCK eggs, 15 for $1.50; 50 for $4.00. Mrs. Lou Edwards, 1039 Garfield Ave., Loveland, Colo.

WINTER LAYERS; BARRED PLYMOUTH Rock eggs for hatching; $2.00, 15; $7.00, 100. Mrs. J. Thompson, 1105 Garfield, Loveland, Colo.

WHITE ROCK EGGS—GUARANTEED PURE, booking orders now; $2 per 15, $5, 50; $8, 100; cockerels, $4 each, three for $10. F. D. Webb, Sterling, Kansas.

BARRED ROCK EGGS FOR HATCHING, FROM pens, either light or dark, $3 for 15; from range flock, $6 for 100. Send for mating list. Chester Blunt, Route 1, Greeley, Colo.

LAYMORE BARRED ROCKS—Eggs $5.00 for 15. Baby chicks 50 cents each. Nebraska State Fair and Missouri first prize winners. First in Colorado in profit with over $70 each in 1918. Rhode Island baby chicks, $20.00 per 100. J. R. Anderson & Son, Ft. Morgan, Colo.

BARRED PLYMOUTH ROCKS—THOMPSON strain. Dark narrow barring, barred to the skin, big-boned, bred for beauty, size and eggs. Special mating $5 per 15. Farm range, $2.50, $10 per 100. A. N. Waechter & Son, Yuma, Colo.

BARRED ROCK EGGS FROM GRAND SPECIAL matings, 15, $5; 30, $9. Range flocks, 15, $2; 100, $10. Our strain bred for extreme exhibition and heavy egg laying qualities. Ahlquist Bros., Box A, Florence, Nebr.

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PETERSON'S HIGH CLASS SINGLE COMB Rhode Island Reds. Write for prices and hatching eggs. Three pens. Nels W. Peterson, Mason City, Nebr.

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S. C. COCKERELS, HENS AND PULLETS; $5 each, mated trios $12. Bred from prize-winning stock. Eggs $1.50 for 15. A. W. Phipps, Evanston, Wyo.

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FINE CHICKENS AT THE TUCKER FARM. Rhode Island White, Rhode Island Reds. Baby chicks. Write me your wants; eggs in season. Mrs. Hattie M. Tucker, Pawnee, Okla.

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LOWER'S POULTRY FARM, ARVADA, COLO., is the oldest and largest breeder of thoroughbred S. C. Rhode Island Reds in the West. Our stock is line bred, from selected heavy laying type for seventeen years. Eggs for hatching, $12 per 100, $5 for 30. Send for catalog and price list of stock and baby chicks.

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If you have stock or eggs to sell this spring, send in an advertisement of what you have to offer. You will find all the buyers you want from among our 50,000 readers.

Others have found this the best place to advertise, you will also if you will but give it a trial.

Read what some of our advertisers have to say:

Western Farm Life: It sure pays to advertise in Western Farm Life. I have sold out all surplus pullets.—Mrs. J. W. Kyffin, Pueblo, Colo.

Western Farm Life: Have had excellent results from my poultry ad with you.—Chester Blunt, Greeley, Colo.

Western Farm Life Run my ad in the next two issues. From this little ad I have sold poultry in several Western States and all over Colorado. Thanks to you.—F. L. Toliver, Fort Collins, Colo.

Western Farm Life: Your paper sure gets results. Will have another advertisement later.—Vivian Anderson.

Western Farm Life: Have sold all my cockerels, and the pulling power of Western Farm Life is much appreciated.—E. A. Miller, Alma, Neb.

Western Farm Life: It might be of interest to you to know that I have this season sold through your paper one $50.00 order and numerous smaller orders. I find your paper a good advertising medium.—Liston L. Hall, Gering, Nebraska.

We receive almost daily letters like the ones quoted above from breeders who are successfully using the classified advertising columns of Western Farm Life. Every one of our 50,000 subscribers is a prospective buyer of poultry and eggs this spring. Send in your advertisement today, so it will reach us in time for the next issue. Rate, 5c a word; four or more insertions, 4c a word each insertion. Address

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FOR SALE—BEST WHITE ROCKS IN THE West. Seven mated pens; pullets and cockerels to offer; setting eggs, $3.00 and 5.00. Last January at Denver Stock Show we won First Cockerel, First Pullet, First Hen, and many other prizes. F. L. Toliver, Ft. Collins, Colo.

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ROSE COMB RED EGGS $8 PER 100. ERLE Smiley, Seward, Nebr.

PURERED BUFF ROCK EGGS, $3 PER 15; PER 30, $5. Barbara Clinkenbeard, Wetmore, Kan.

S. C. RED COCKERELS FOR SALE, $3 EACH, or two for $5. Ed Grotenhuis, Crawford, Colo.

PUREBRED WHITE ROCK EGGS $2 PER 15; $7 per 100. Mrs. Elsie Holderness, Dillwyn, Kansas.

PUREBRED SINGLE COMBED, EGGS 15 FOR $1.50; 100 for $7. Edna Knisely, Talmage, Kans.

ROSE COMB RED CHIX, $18, 100. EGGS FROM prize winners, $2.50, $3.00 per 15. Mrs. R. E. Hailey, Wilsey, Kansas.

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EGGS IN BOTH COMBS FROM OUR STATE show winners; $3 per 15. Ask for mating list. Brumley Red Yards, Wellington, Kansas.

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HARRISON'S FAMOUS, "EXHIBITION EGG strains." single and Rose Comb Reds. Show-winning, non-setting, developed layers. "Red breeding bulletins," and mating lists on request. Robert Harrison, The Red Man, Lincoln, Nebr., Station C.

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PARTRIDGE WYANDOTTES—CHOICE STOCK and eggs. Fred Karre, Cotesfield, Nebr.

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WHITE WYANDOTTE EGGS 15 FOR $1.50. Post paid; 100, $6. Angie Archer, Grenola, Kansas.

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WHITE WYANDOTTES — HEAVY LAYING strain, eggs $2 per 15, $7 per 100, prepaid. H. M. Savery, Cedar, Kansas.

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GET CLARY'S PRIZE WINNING STRAIN CHALK White Wyandottes. Cockerels, $3, $5, $7, $10. Satisfaction guaranteed. George Clary, Endicott, Neb.

WHITE WYANDOTTE EGGS—BOOKING ORders now for March and April delivery. $1.50 for 15; 8c each in lots of 30 or more. Wm. A. Draves, Lemoyne, Neb.

SILVER WYANDOTTES. HAVE A FINE GOOD cockerel left; eggs, yards Nos. 1 and 2; $5 for 15; No. 3, $5 for 50. M. B. Caldwell, Broughton, Kansas.

SILVER WYANDOTTES; WON BLUE IN 8 State Shows. Cockerels, $3, $4, $5; eggs $3; two settings, $5, parcel post prepaid. Free mating list. Chas. David Flanders, Springhill, Kansas.

ORPINGTONS.

BUFF ORPINGTON EGGS $8 PER 100. ERLE Smiley, Seward, Nebr.

PUREBRED BUFF ORPINGTON EGGS, $1.50 15; $7.50 100. Mrs. O. H. Headberg, Axtell, Nebr.

EGGS—BUFF ORPINGTONS. FROM VERY choice birds, 15, $2; 30, $3.50; 50, $5. Cora Charlton, Little River, Kansas.

HIGH CLASS BUFF ORPINGTON EGGS FOR hatching. Winter laying strain, $2.50 for setting of 15, $6 per 50, $10 per 100. Good hatch and satisfaction guaranteed. Mrs. J. W. Lee, Bridgeport, Neb.

BUFF ORPINGTON—IN A LARGE CLASS, I won more firsts at this year's Kansas State Show than all others combined. Eggs for hatching from choice matings at $3.00 up. Write for list. Carl W. Moore, Topeka, Kan.

ANCONAS.

APPLETON S. C. ANCONAS—FARMER'S FAvorite moneymakers. $766.79 profit from 50 hens one year. Hardy, quick maturing. Exhibition-utility. 15 big hatchable eggs, $2.00; 45, $5.00; 100, $10.00. 25 husky baby chicks, $7.00; 50, $13.00; 100, $25.00. Book orders today. Satisfaction guaranteed. Appleton Poultry Farm, Rocky Ford, Colo. Box D.

SUNNYSIDE EGG BRED S. C. ANCONAS—THE world's greatest egg machines; they hold the world's record for egg production. Do you raise chickens? Then why not raise the best. Our Anconas are from the best egg-producing strain in the world. We have culled and reculled our flocks until only the best are left, so you may be sure they have the egg qualities bred into them. 90 per cent fertility guaranteed. Exhibition pens, $5 per 15; pens of selected layers, $10 per 100, $2 per 15; order your baby chicks now, a big hatch April 9; Chicks, $20 per 100; 25c each for 50 or less. Mrs. J. B. Shenk, La Junta, Colo., Box L, R. F. D. 2.

LANGSHANS.

BLACK LANGSHAN EGGS $8 PER 100. ERLE Smiley, Seward, Nebr.

PURE BLACK LANGSHANS. COCKERELS, $5, hens, $2.50; eggs, 15, $2; 100, $7. Mary McCaul, Elk City, Kansas.

BLACK LANGSHANS, FARM RAISED. EGGS, 15, $1.50; 100, $8; chix, 20c. Mrs. S. W. King, Solomon, Kansas.

BLACK LANGSHANS, SHOW WINNERS, EGG producers. Cockerels, $3 up. Eggs, $3 and $5 per 13. O. I. Moon, Ft. Morgan, Colo.

PRIZE WINNING BLACK LANGSHAN EGGS $2 setting. Winter laying strain; all first and second prizes County Fair. First prize Nebraska State Fair. R. Montgomery, Dennis, Kansas.

BRAHMAS.

PUREBRED LIGHT BRAHMA EGGS, $2 FOR 15, $10 per 100. Baby chicks 25c each, postpaid. C. S. Holtzinger, Ellis, Kansas.

SETTINGS FROM THOROUGHBRED, LIGHT Brahmas. Greatest of winter layers. Prices reasonable. E. Grosser, 2240 Perry, Denver, Colo.

MINORCA.

SINGLE COMB BLACK MINORCA EGGS, (Pape's strain), excellent layers. Hans Jurgenson, Overton, Nebraska.

HAMBURG.

SILVER SPANGLED HAMBURG EGGS, CHICAgo, Kansas City, St. Louis, Denver, Lincoln, Wichita, Dallas, Oklahoma City winners, $3 per 15; $5 per 30. Roland Talbott, Waukomis, Okla.

TURKEYS.

PRIZE WINNING BRONZE TURKEYS—Denver trophy winners for five years. Toms, $15 up. Some good barred rock cockerels, $3.00. Eggs for hatching. Mrs. L. P. Stone, Lexington, Nebr.

TURKEY EGGS—MAMMOTH BRONZE, FROM 16 to 20 pound hens, 50c each, for April and May delivery. Booking orders now. Wm. A. Draves, Lemoyne, Neb.

PURE BOURBON RED TURKEY EGGS, $6 PER 12. White African Guinea eggs, 10 cents each. Single comb White Leghorn eggs, $6 per 100. All eggs postpaid and guaranteed. Vivian Anderson, Oswego, Kans.

SEVERAL VARIETIES

FINE BLACK MINORCA AND BUFF ORPINGton Eggs. Baby chicks. Frank A. Agnew, Southside, Omaha, Neb.

CHOICE WHITE ROCK COCKERELS, WHITE Guineas, Buff Orpington ducks. Mrs. Chas. Snyder, Effingham, Kansas.

MODLIN'S POULTRY FARM, LARGEST IN THE West. Hatching eggs, free circular. Write today. Thirty best varieties. Route 7, Topeka, Kansas.

CLAY COUNTY POULTRY AND PET STOCK ASsociation, 100 members. All breeds and varieties. Directory free. Sec'y. H. L. Boge, Harvard, Neb.

WISCONSIN SPECIALIST DISCOVERED HOW to distinguish sex of eggs. Price $1.00, money back if dissatisfied. Agent, Box 29R, Summitville, Indiana.

EGGS FROM SELECTED PENS; BUFF ORPINGtons, and Bradley Barred Rocks, $3 per 15; $5 per 30. Choice cockerels for sale. Archdale Farm, Fremont, Neb.

BUFF ORPINGTONS AND SILVER SPANGLED Hamburgs. Orpington eggs $7 hundred, $1.25 setting. Hamburg $1.50 setting of 15 eggs. Leslie Chrestenson, Route A, Akron, Colo.

BRONZE TURKEY EGGS FROM PRIZE WINning strain, 75c each; place order now. S. C. White Leghorns, heavy laying strain, $2.50 for 15 eggs. Mrs. A. L. Overmyer, Wiggins, Colo.

BUFF LEGHORNS, RHODE ISLAND REDS—best layers on earth. Headquarters for cockerels, baby chix; hatching eggs. Write us your wants. Champney, 2057 South Broadway, Denver.

COLUMBIA HATCHERY—WE CAN SUPPLY you with any quantity of Baby Chicks. We have 14 varieties including all leading breeds. Write for our prices, you will save money. P. O. Box 1102, Denver, Colo.

YOU BUY THE BEST CHICKS FOR THE LEAST money, from the Colwell Hatchery, Smith Center, Kansas. 150,000 to be shipped everywhere; 18 cents each, 500 for $89; guaranteed alive or replaced free.

BABY CHICKS—BARRED AND WHITE ROCKS, Reds, Buff Orpingtons, White Wyandottes, Anconas, White, Buff, Brown Leghorns, 18 cents. Single comb black Minorcas, Light Brahmas, 20 cents, prepaid. Live delivery guaranteed. Kansas Poultry Company, Norton, Kansas.

OUR SANITARY POULTRY ROOST WILL RID your chickens and chicken houses of all lice and mites within two weeks or money refunded. Write us for free descriptive circular and prices. Ford & Thurston, 2531 Fairfax St., Denver, Colo.

YOUNG'S 265 EGG WINTER LAYING STRAIN single comb white Leghorn eggs, 15, $1.50; $7 hundred. Money makers. Prize winning Partridge Wyandotte, Premier mahogany stain, eggs, 15, $2; hundred, $8. Hens cleared $4.27 each last year. E. N. Montgomery, Dennis, Kansas.

SEVERAL VARIETIES.

IMPROVE THE FARM POULTRY AS YOU DO your cattle and hogs. The farmer is beginning to realize that poultry, scientifically bred to egg production, improves the farm flock and increases his profits in these times of dollar eggs. Look ahead a year. You probably need new poultry blood this year and will buy a cock bird to furnish it, but for next year—buy Harr's baby chicks now. Your new blood will cost you nothing. For the price of one good cock 1 will sell you 100 baby chicks from heavy egg producing stock. Buy these chicks now and next fall you will have plenty of fine cockerels for your own use; also you will have several pullets and the money you can realize on your surplus cockerels will pay the entire expense feed and all. I can offer you ten breeds as follows: Rhode Island Reds, White Leghorns, Barred Plymouth Rocks, Black Minorcas, White Orpingtons, White Plymouth Rocks, White Wyandottes, Buff Orpingtons, Buff Plymouth Rocks, and Anconas. Even tho my flocks contain many prize winners, 1 can offer chicks at the following prices: Twenty-five chicks, $6.25; 50 chicks, $12; 100 chicks, $22; 500 chicks, $105; 1,000 chicks $200. Order direct from this ad. Full live delivery guaranteed by Parcel Post. I ship by Parcel Post, special delivery and will guarantee live delivery of every chick. Can make shipment within two weeks after receiving order. Send 25 per cent cash with order and balance few days before shipment. Dean Harr, Box G 502, Wichita, Kansas.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HOGS

FOR SALE—PUREBRED O. I C. BOARS AND gilts; also bred sows. J. H. Gilbert, Box 397, Brighton, Colo.

FOR SALE—BIG TYPE REGISTERED DUROC boar. Good color, and growthy individual. Thos. Liddle, Superior, Colo.

FOR SALE—REGISTERED BIG TYPE DUROC-Jersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

FOR SALE—POLAND-CHINAS "BIG TYPE" bred gilts, spring boars, fall pigs; all registered. Write for information. F. L. Toliver Stock Farm, Ft Collins, Colo.

STOCK HOGS WANTED—WE WANT TO BUY several hundred head of pigs and hogs weighing from 60 pounds up. Let us know what you have for sale. Write Duroc Farms, 412 Cooper Building, Denver, Colo.

REGISTERED BIG TYPE DUROC JERSEY boars and gilts, the kind that brings the money at the block. Fashionably and strongly bred by our herd boar, Orion Cherry King 15th, and out of Defender sows. We are sold out on anything up to July farrow. Money back if not satisfied. J. O. D. Ranch, Aroya, Colo.

I HAVE NOW FOR SALE THREE OF THE finest Registered Duroc Jersey Gilts you ever saw, farrowed last July. They were sired by the largest boar for his age, at the Pueblo State Fair, and they have produced some prize winners at the Pueblo and Denver fairs. There are only three of these left, so write quick. J. N. Caldwell, Willow Grange Farm, Littleton, Colo.

CATTLE

FOR YOUNG CALVES, WRITE TERWILLIGER, Livestock Exchange, 289 Lake St., Milwaukee, Wis.

FOR SALE—HEAVY MILKING HIGH GRADE Shorthorn springing heifers. Stewart & Stewart, Castle Rock, Colo.

REGISTERED HEREFORD BULLS — ABOUT thirty coming yearlings, two coming two-year-olds, and one 5-year-old bull, the sire of the others, and one of our herd bulls. All best Anxiety breeding, well marked, big boned, and not pampered with flesh to hide their defects. Priced to sell. J. O. D. Ranch, Aroya, Colo.

SHORTHORNS FOR SALE—TWO BULLS AND 1 cow. Silver Prince 528502, white, 4 years old, sure breeder, tracing to Imp. Rose of Sharon. Royal Zealous 833792, white; 11 months old, tracing to Imp. Zealous. Roan Maid 132401, roan, 9 years old; will be fresh in June; tracing to Imp. Tilbert. Bull and cow, $200 each. Calf, $150.. Fred Van Deylen, Byron, Nebr.

HORSES.

TWO HIGH CLASS PERCHERON STUD COLTS, two and three years old; range broke, cheap. Choice Hampshire hogs, either sex. L. F. Newbold, Minden, Nebr.

FOR SALE—SIX REGISTERED PERCHERON stallions—one my herd sire, King Link, No. 88104, seven years old—and five of his colts. As I wish to sell all my horses, I am making low prices. R. A. Chace, Ft. Morgan, Colo.

LIVE COYOTES.

WANTED—LIVE COYOTES, OLD AND YOUNG. Write T. B. MATHIAS, 2916 W. 32d ave., Denver.

PET STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

RUNTS PIGEONS FOR SALE. JOHN KRANZ, Box 332, Winnemucca, Nevada.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

SUDAN GRASS SEED. HUNDRED POUNDS, $18. Sacks free. Is pure, Colorado grown stock; high germination. Long Seed Company, Boulder, Colorado.

WHITE-BLOSSOMED SWEET CLOVER SEED "for sale" at 25c per lb. C. J. Elliott, Strasburg, Colo.

SEED CORN—AMERICA'S BEST QUALITY. 90 to 130 bushel kinds. Produces 2¼ pound ears. Must please or money back. Bushel, $4.00. Wiltse, Rulo, Nebr.

PRIZE WINNING SEED CORN.—IMPROVED Reid's yellow dent and Boone County White. Also all kinds of farm seeds. Catalog free. Perry H. Lambert, Box L, Hiawatha, Kansas

GOOD CLEAN RED AMBER CANE SEED $2.20 per 100 lbs., sacked F. O. B. Lamar, Colo. Satisfaction guaranteed. S. F. Webb, Utleyville, Colo.

STRAWBERRY PLANTS.

STRAWBERRY PLANTS—DAHLIA BULBS, 150 kinds. Write for prices, all kinds nursery stock. McMullen Nursery, Box 374, Council Bluffs, Ia.

NURSERY STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

DO YOU WANT A BARGAIN ON WELL-ROOTED and branched Cherry, Apple, Pear, Peach and Plum trees and berry plants? Ask for our free instructive and humorous catalog with prices lower than other first class nurseries. Manhattan Nursery, formerly Manhattan, Kans., now Topeka, Kans.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—IMPROVED 480 ACRE STOCK AND farm ranch. George Wortham, Neiber, Wyo.

BUY THE FAMOUS BOISE VALLEY FARMS. Particulars free. John Klink, Meridian, Idaho.

IF YOU WANT TO SELL OR EXCHANGE YOUR property, write me. John J. Black, 33 St., Chippewa Falls, Wis.

CALIFORNIA FARMS NEAR SACRAMENTO, FOR sale; easy terms. Write for list. E. R. Waite, Shawnee, Oklahoma.

IDAHO LAKE REGION OPPORTUNITIES—Farms all sizes and prices for sale. Peter Johnson, Sandpoint, Idaho.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

FARM AND CATTLE RANCHES—CHOICE LIST. If interested call or write F. E. Wrockloff, Merchants Bank, Seventeenth and Curtis Streets, Denver, Colo.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description, location and cash price. James P. White, New Franklin, Mo.

FOR SALE—BY OWNER, 52 LOTS IN TRINIdad, Colo., for $1,800 cash. Good location to raise chickens or real estate venture. S. Leger, Jr., Dawson, N. M.

CHOICE GOVERNMENT LAND, COMING UNDER irrigation, this season, near Grand Junction; easy cash, crop and work payments. Hurry. Liberty Colony, Rifle, Colo.

FOR SALE—RANCH, 120 ACRES IMPROVED, 6-room house, large barn, fine orchards, first-class water right. For particulars write Peter Hansen, Grand Valley, Colo.

FOR SALE—5 ACRES, ½ ACRE ASPARAGUS, alfalfa; 6-room brick; out buildings; $4,500; terms. Walking distance end Washington Park cars. Carl Schlumpf, 4601 E. Louisiana, Denver.

"LAND OFFERINGS" ALONG THE KANSAS City Southern Railway, contains a list of improved and unimproved lands for sale at all stations of this railroad in Missouri, Arkansas, Oklahoma, Louisiana and Texas, together with reliable information concerning the towns and county in which they are located. Write for information to Forest K. Woodruff, 411 K. C. S. Bldg., Kansas City, Mo.

LANDS IN NORTHEASTERN NEW MEXICO, $15 to $30 per acre, producing excellent crops of wheat, oats, corn, kafir, beans, alfalfa, fruits, vegetables. Great dairying and stock raising section. Cheap grazing lands. Healthful climate, ample rainfall, altitude 5,200 feet. More farmers needer. Lands advancing in price with increased farming and population. For free illustrated booklet address Earle G. Reed, Agricultural Agent, Colorado & Southern Railway, Room 713, Railway Exchange Bldg., Denvere, Colo.

ATTENTION STOCKMEN — WE HAVE TWO stock ranch bargains. Just what you are looking for; each ranch comprises 320 acres deeded land with substantial improvements and large acreage under irrigation, and in alfalfa, timothy, clover hay, unlimited outside free range, with 4,000 acres of leased land under fence for fall pasture. These ranches are located three miles apart, 125 miles from Denver. Good shipping point, big money makers. Prices $12,000 and $13,600 on good terms. See us at once for these. Reynolds, Covey & Reynolds, 625 Exchange Bldg., Denver, Colo.

PLOWING CONTRACTS.

WE HAVE A NUMBER OF CUSTOMERS WHO want plowing contracts. They have our Heavy Duty Leader Tractors and Oliver Mouldboard and disc plows as well as tandem disc harrow and packer pulverizers and will do you good work. What have you to do, and what are you willing to pay? Write us fully. John Thams & Son, Distributors, Tractors and Farm Machinery, 1434-44 Wazee St., Denver, Colo.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANT EXPERIENCED RANCHER, WITH OUTfit, improve new place, for share of land, water rights and crops. H. L. Murray, Rifle, Colo.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

RED CEDAR SPLIT FENCE POSTS. GUARanteed full size and A-1 quality. You pay after unloading. Send for booklet and prices delivered your station. Kirk Company, Box 1138-S, Tacoma, Washington.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

TRIAL ORDER FRESH ROASTED RIO COFFEE, whole or ground, 3 pounds for $1, sent prepaid anywhere. Alvin Brauer, Beeville, Texas.

ALFALFA MILL.

COMBINED ALFALFA MILL AND ENSILAGE cutter in first class condition. Price new $550, will take $250 cash. Write or phone C. E. Stretcher, Aurora, Colo.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

TYPEWRITER

GOOD TYPEWRITER FOR SALE CHEAP—FREE trial, easy payments if wanted. Write Bertha Payne, Shawnee, Kansas.

TANNING

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

Johnstown Again Shows How Dairy Farming Pays.

(Continued from Page 3.)

cents, unless he is weighing the milk and testing it at intervals as is done in the cow testing association.

The market for milk in the Johnstown section is through the condensery. The dairymen are using feeds such as alfalfa hay, silage, beet tops, bran, oil meal, oats, barley, corn chop and gluten meal. From this variety they are able to balance a ration to fit all conditions of production.

The business men of Johnstown support the dairy show as does the Great Western Sugar company and the Colorado Condensery.

Prof. Chas. I. Bray, of the Colorado Agricultural college placed the awards at the 1920 show, as follows:

Aged bulls Holstein: W. A. Purvis, Johnstown, 1st; J. A. Carlson, Johnstown, 2nd; Van Meter and Krebill, Loveland, 3rd.

Bulls, 1 year and under 2: Lohry & Wailes, Milliken, 1st; J. W. Whowell & Son, Berthoud, 2nd; W. A. Purvis, Johnstown, 3rd.

Bulls under 1 year—10 shown: J. W. Whowell & Son, 1st and 2nd; Van Meter & Krebill, 3rd.

Aged cows registered: Whowell & Son, 1st; Lohry & Wailes, 2nd; S. A. Gray, Johnstown, 3rd.

Cows one year and under 3: Van Meter & Krebill, 1st; S. A. Gray, 2nd; J. W. Whowell & Son, 3rd.

Holstein heifers under 1 year: S. A. Gray, 1st and 3rd; Van Meter & Krebill, 2nd.

Grade Holsteins, aged cows: Whowell & Son, 1st and 2nd.

Cows 1 year and under 3: Whowell & Son, 1st and 3rd; W. A. Purvis, 2nd.

Aged Herd Holsteins: Lohry & Wailes, 1st; Whowell & Son, 2nd; S. A. Gray, 3rd.

Guernseys.

Aged bulls: John Purvis, Berthoud, 1st; D. Herter, Johnstown, 2nd.

Bulls, 1 year and under 2: John Purvis, 1st; Bender & Son, Johnstown, 2nd.

Bulls under 1 year: Bender & Son, 1st; John Purvis, 2nd and 3rd.

Cows—aged: John Purvis, 1st, 2nd, 3rd.

Cows, 1 year and under 3: John Purvis, 1st; Bender & Son, 2nd and 3rd.

Guernsey Heifers under 1 year: Bender & Son, 1st; John Purvis, 2nd.

Grade Guernsey cow: Bender & Son, 1st.

Grade cow—1 year and under 3: John Purvis, 1st and 3rd; Bender & Son, 2nd

Guernsey Herd: John Purvis, 1st; Bender & Son, 2nd.

Best Fitted herd at show: Whowell & Son, 1st; Bender & Son, 2nd.

Grand Champion bull of show: Lohry & Wailes, on Holstein bull.

Grand Champion cow of show: Whowell & Son.

Boys' and Girls' Club: Chas. Gray, 1st; Oril Krebill, 2nd.

High cow in Testing Association: Whowell & Son, 1st, Registered Holstein; Lohry & Wailes, 2nd, registered Holstein; Whowell & Son, 3rd, grade Holstein.

Farm-Owned Trucks.

The high cost of feed and the increased use of passenger automobiles and farm trucks are bringing about a decrease in the number of horses on farms in the United States, according to the latest figures of the Department of Agriculture. The estimated number of horses on farms and ranches January 1, 1920 was 21,109,000 a decrease of 373,000 head, or 1.7 per cent as compared with a year ago. This decrease is less than was generally supposed would be the case following the great increase in the number of tractors and trucks in use on the farms. It is pointed out, however, by the Department of Agriculture that in many cases the introduction of a truck on a farm indicates provision for increased hauling rather than actual reduction in number of horses used. Another point which should be mentioned is that the high cost of feed has made it necessary for farmers to discard the poorer horses and pay more attention to the production of heavy weight drafters for which there will always be use on the farms.

The most encouraging feature of the situation is, as pointed out by the Department, the fact that automotive power increases the facilities of the farmer for doing business. While he may dispose of some of his horses, they are nevertheless a necessity and competition with automotive vehicles has forced the development of a better class of horses. Plugs and scrubs have been ruled off the farm by the auto and the truck and these factors, together with high feed costs, have made all but the highest quality of animals unprofitable. The decrease in horseflesh is in quantity, with a decided enhancement of quality and power.

The department survey was undertaken by the Bureau of Crop Estimates, through its 36,000 reporters. The total number of farm owned trucks, exclusive of those used for custom hauling, is 49,195. This total is considered low. Colorado, for example, is credited with only 804 farm owned trucks. Dealers are of the opinion that 1,500 to 2,000 would be nearer correct for this state. The government estimates by states follows:

Alabama, 847; Arizona, 95; Arkansas, 721; California, 1,019; Colorado, 804; Connecticut, 357; Delaware, 100; Florida, 380; Georgia, 1,808; Idaho, 329; Illinois, 2,261; Indiana, 1,548; Iowa, 2,773; Kansas, 1,732; Kentucky, 818; Louisiana, 310; Maine, 435; Maryland, 596; Massachusetts, 661; Michigan, 1,636; Minnesota, 1,255; Mississippi, 957; Missouri, 2,065; Montana. 359; Nebraska, 2,739; Nevada, 41; New Hampshire, 283; New Jersey, 862; New Mexico, 104; New York, 3,171; North Carolina, 1,450; North Dakota, 501; Ohio, 2,261; Oklahoma, 723; Oregon, 369; Pennsylvania, 2,760; Rhode Island, 152; South Carolina, 1,190; South Dakota, 1,708; Tennessee, 978; Texas, 1,668; Utah, 173; Vermont, 282; Virginia, 1,128; Washington, 682; West Virginia, 465; Wisconsin, 1,465; Wyoming, 174.

Poland China Sale.

The sale of Poland China hogs at the farm of William Upp of Deer Trail, Colorado, was held March 10. The results were very satisfactory. Mr. Upp has been breeding Polands at Deer Trail for three years. He came there from Missouri and brought most of his foundation stock with him. He has the big type animals, his herd boar being Big Jumbo.

The sale was just fairly well attended. The buyers were practically all local men; many of the purchasers were new breeders. Colonel H. C. Jennings of Denver, called the sale. The prices ranged from $65 to $110. The average price was in the neighborhood of $75.

Mr. Upp was well pleased with the result. He contemplates holding two sales each year in the future.—H. A. L.

WESTERN FARM LIFE

Combination Offers

WESTERN FARM LIFE, 2 YEARS
Reading Matter For All the Family.

With McCall's Magazine	1 yr.,	$1.50
With People's Home Journal	1 yr.,	1.60
With Today's Housewife	1 yr.,	1.45
With Am. Poultry Advocate	1 yr.,	1.20
With Pictorial Review	1 yr.,	2.25
With Christian Herald	1 yr.,	2.55
With Red Book	1 yr.,	2.60
With American Boy	1 yr.,	2.50
With Review of Reviews	1 yr.,	4.05
With Breeder's Gazette	1 yr.,	2.15
With Pathfinder	1 yr.,	1.80
With Current Opinion	1 yr.,	3.05
With Popular Science Monthly	1 yr.,	2.50
With Delineator	1 yr.,	2.50
With Modern Priscilla	1 yr.,	1.75
With Everybody's	1 yr.,	2.50
With Literary Digest	1 yr.,	4.90
With Etude, Music Magazine	1 yr.,	2.25
With Illustrated World	1 yr.,	2.30
With American Magazine	1 yr.,	2.55
With Hunter-Trader-Trapper	1 yr.,	2.00
With Woman's Home Companion	1 yr.,	2.55
With Little Folks	1 yr.,	1.90
With Illustrated Review	1 yr.,	1.25
With Youth's Companion	1 yr.,	3.05

Send All Orders to
WESTERN FARM LIFE
Denver, Colorado.

Livestock Field Notes.

Mrs. Douglass, Holstein breeder, of Rush, Colo., who paid $5,000 for Penrose's champion bull, and $4,500 for Lilu Segis Pontiac, has a breeders announcement in our Livestock section of this issue. She has for sale fine individual bulls from tested cows. Three of them out of a son of Johanu Duchess DeKol Lad.

The Lowell Cattle Co. of the Union Stockyards at Denver can also fill your order if you want good young bulls, or heifers. They have some excellent Shorthorn females, all bred to good bulls. Read their ad in our Livestock section of this issue.

Do you want a State Fair first prize winner from the Columbine herd? Read the announcement of The Turkey Creek Farm in this issue. Mr. Spencer Penrose is the owner of this stock farm, and Mr. Cushner is the manager. They are offering a real outstanding individual of the very best breeding. This calf is now ready for service.

Mr. Wm. Upp of Deer Trail, Colo., wishes to extend his thanks to all who attended his sale on the 10th. His sale was a success, and Mr. Upp extends an invitation to all to his next sale which will be announced some time in the future.

Mr. McClenahan, the Jersey breeder of Greeley, Colo., announces that his partner, Mr. Dixon, has left for the east to get another carload of Jerseys. Their herd won the Grand Championship at the Denver show. They have a few calves left and are offering them for sale. Read their ad in this issue.

Mr. W. G. Foster, owner of the Wallie Farm at Englewood, Colo., is offering some excellent individuals of the very best Holstein breeding. His herd is headed by King Johanna Cedarside Pontiac, who was sired by King Segis Pontiac Count. His herd is making some excellent A. R. O. records. Read his ad in this issue.

COLUMBINE HERD

Offers for Immediate Sale
A Prize Winner Ready for Service.

Columbine Segis Changeling.
HIS SIRE: Woodcroft Changeling, is one of the greatest young sires of the breed.
HIS DAM: Ora Segis De Kol, is by one of Ohio's best sires, and he is from Ohio's first 30-lb. cow.
THIS CALF is ready for service and was First Prize Senior Bull Calf in his class at the State Fair.
THE PRICE is $300.00 crated and F. O. B. Colorado Springs.
Our Herd is Under Federal Supervision.
TURKEY CREEK FARM,
Colorado Springs, Colo.
Spencer Penrose, Owner. **W. E. Cushner,** Manager.

Win-O-Dee Farm Holsteins

Herd Bull KING TWISK SEGIS PONTIAC 182200.

This sire's two nearest dams have a record of 35.38 lbs. butter from 733 lbs. milk in seven days. The average record of his six nearest dams is 34.38 lbs. butter in seven days. **Young Stock of Both Sexes For Sale.**

P. K. HUDSPETH, Pueblo, Colo.
Siloam Star Route.

Registered Breeding Bulls and Heifers

HEREFORDS
SHORTHORNS

Young sctock of both sexes for sale at all times. Our sales yard is located within two blocks of The Denver Union Stock Yards. We are pleased to show our stock at all times.

THE LOWELL PUREBRED CATTLE CO.
Union Stock Yards, Denver.

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HOLSTEINS

Five excellent A. R. O. records made by two-year-olds in past two weeks. More to follow.
Herd headed by
King Johanna Cedarside Pontiac
One of the best individuals ever sired by King Segis Pontiac Count "Marvel of Sires."
Bull Calves and a Few Heifers For Sale.
W. G. Foster, Owner, 4800 So. Penn.
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Douglass Holsteins

FOR SALE.

5 Young Registered Holstein Bulls. Three of these were sired by the son of my $5,000 Penrose bull, Johan Duchess DeKol Lad, sire of world's record heifer. All these young bulls, excepting one, are out of tested 2-year-old heifers running from 22 lbs. down to 15 lbs.
All good individuals—buy one, and raise the quality of your herd.

Write or call.

Mrs. R. G. DOUGLASS
Sanborn Ranch Rush, Colo.

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Do Not Replace Straight Bates Shorthorn Blood

FOR

Straight Bates Shorthorns are the "foundation source' of the Milking Shorthorns of England and America.
The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

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Harry Davis, Jackson, Mont., sold 35 coming 2-year-old Shorthorn steers at the Spokane, Wash., market for $20 per head more than steers of the same ages not by Shorthorn bulls. He also sold 115 coming yearlings for the same price per head as others not by Shorthorn bulls, coming 2-year-olds.
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It pays to grow Shorthorn beef.
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25 HEAD

CHOICE YOUNG COWS AND HEIFERS, All bred to good bulls.
Some have calves at foot now.
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or
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205 Live Stock Exchange Bldg., Denver, Colo.

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—of—
Western Farm Life

Completely covers the States of Colorado, Wyoming, New Mexico, Utah, Idaho and adjacent sections of adjoining states. Practically every breeder and livestock farmer of the above mentioned territory reads the Livestock pages of Western Farm Life.

FOR BUYERS—When livestock of any kind is wanted, look thru our advertisements and write those breeders who seem likely to have what you want, always mentioning this paper. Write this department direct at any time, describing the livestock desired and we will be glad to help you locate it.

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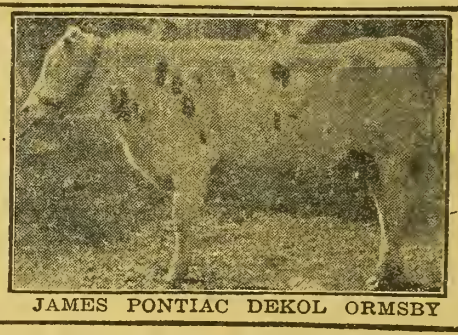
I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.
He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
JOHNSTOWN, COLO.



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BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.
C. F. Burke, Mgr. Pueblo, Colo.

Verdun Fairfax, 547803.
FOR IMMEDIATE SALE.
Six young bulls of Fairfax breeding, $300 to $500 Also 2 choice herd bulls, and Fairfax Heifers in beginners herds. All stock disease free, and guaranteed.
Prompt Attention to Inquiries.
SNEFFELS LAND & CATTLE CO.
RIDGWAY, COLO.

LA MARIPOSA

The Carr W. Pritchett Ranch,
Steamboat Springs, Routt Co., Colo.,
has for sale at this time 12 fine bulls from 9 to 20 months old. Sired by LOYAL STAMP. Priced right. Great-grandsons of Whitehall Sultan.

WILLIAM UPP
Livestock Auctioneer

Purebred Hogs a Specialty.
DEER TRAIL, COLO.

CRUSADER QUEEN

Junior and Reserve Grand Champion, Denver, 1920.
The sensation of the Year.
DALY & THOMPSON,
Cambridge, Neb.

REGISTERED JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.
Come and inspect, or write me.
H. J. VAUGHN, KIRK, COLO.

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We are offering a lot of choice Poland China Bred Sows and Gilts, all bred for March and April litters.
State Fair winning blood runs through our entire herd.
Write Us Your Wants.
THE DEMING RANCH,
Oswego, Kansas.

REGISTERED DUROC JERSEY HOGS

BRED GILTS FOR SALE.

R. C. VAN SCOY & SON
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Purebred bay stallions and mares, 2 to 6 years old, weighing 1,800 to 2,150 lbs. The best that the world can produce. Every one has been a first or second prize winner at Denver.
JOS. ROUSSELLE & SONS
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LAST CALL

— for —

Auction of Shorthorn Cattle At Farnam, Neb., April 14, '20

24 -- Bulls -- 24

PROSPECTIVE HERD HEADERS.

Others of desirable age, quality and conformation for ranch and farm. All are right in pedigree and type.

28 -- Females -- 28

A choice group of young cows and heifers. They carry service to three great bulls—Roan Radium 596533, Village Mascot 485203, Easter Sultan 420163.

THEY WILL DO WELL FOR YOU

Tuberculin tested and sold with 60-day retest privilege. Insured against death from any cause for thirty days after sale.

Location: In Dawson county—Farnam is on the Burlington. U. P. R. R. trains will be met at Gothenburg.

Get a Catalog. Join Us Sale Day.

E. W. CROSSGROVE & SONS FARNAM, NEB.

GODFREY & GODFREY COZAD, NEB.

ANNOUNCEMENT

Registered Holsteins For Sale

We have decided to sell some of the daughters of **Prince Netherland Gerben Walker** instead of building more barn room to take care of our growing herd.

We Are Breeders, Not Dealers

And we bred and raised every one of these heifers. They are two and three-year olds and very persistent milkers. These cows are bred to our senior sire SIR JOHANNA BESS SEGIS, whose dam is one of the great daughters of KING SEGIS PONTIAC COUNT and whose sire is PIEBE LAURA OLLIE HOMESTEAD KING. This is wonderful breeding and you must go a long ways and pay big money to get it in the east. Our prices on these heifers are $250 to $400. If you want to sell back to us any or all of the heifer calves, daughters of **Sir Johanna Bess Segis,** we will gladly buy them back from you at seven months of age, well grown and subject to U. S. test at $150 a head. This herd is under U. S. supervision and we are not allowed to sell out of it or buy into it any stock not tested by the government. They have tested our whole herd and found it clean.

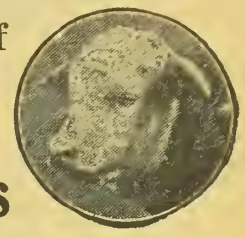
We shall be glad to tell or write you more about this stock, but if you are interested we believe it will pay you to come to the ranch as soon as possible and select what you want. We have never before offered any registered females for sale.

Loesch Brothers,

Pahgre Valley Ranch **Montrose, Colo.**

The Hereford Corporation of Wyoming

Box 876, Cheyenne, Wyoming



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We Offer For Sale

3 Loads Coming 2-Year-Old Bulls

2 Loads Coming 2-Year-Old Heifers

And can also take care of any breeder who wants a few good bred heifers and cows.

Denver office

406 Live Stock Exchange Bldg.

RAYMOND S. HUSTED, Mgr.

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HERD BULL—MISCHIEVOUS JR., by THE HEIR

Is a full sister to BEAU MISCHIEF and is the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

L. G. Davis Herefords

ANXIETY BRED

For Sale—3 cars of registered Anxiety Bred Open Heifers in lots to suit purchaser. Can be seen at my Wynnewood ranch six miles from Denver.

WE HAVE A FEW HIGH CLASS YEARLING BULLS FOR SALE

L. G. DAVIS, Saratoga, Wyo.

Or Wellington Hotel, Denver

Forest Glen Shorthorns

We are offering some medium-priced cows and a few choice bulls at attractive prices.

Cornforth Live Stock Co.

ELBERT, COLO.

COL. H. C. JENNINGS.

Purebred Livestock

AUCTIONEER

Also conduct Sales of Real Estate.

534 17th St., Kenmark Hotel.

Phone M. 6870 Denver, Colo.

High Class Jerseys

The demand for Jerseys has become so persistent that our Mr. Dixon is now in the east to get another car load. We hope soon to be able to supply the demand.

Remember we had the Grand Champions at the Denver Show, in fact, all the Championships.

Only one bull of serviceable age left, but have some corking good calves.

ALSO SOME EXTRA GOOD BRED GILTS.

McCLENAHAN & DIXON, Greeley, Colo.

Regist'd Holstein Bull Calves

Two Ready for Light Service.

Well grown, nicely marked from high producing dams. Sire, Western Sir Colantha Ascalon, he by Western Ascalon Champion Boy, a son of Colorado's Greatest Dairy Cow, and half brother to Colorado's Greatest Dairy Heifer. Write us.

W. B. & E. M. DOWNS, Yuma, Colorado.

AM TAKING ORDERS NOW FOR SPRING PIGS.

Also a good March Boar left—sired by First Prize Junior Yearling at Iowa State Fair.

AUGUST F. BORGMANN,

R. 1, Box 124, Longmont, Colo.

Edbrooke Duroc

Defender Breeding

REGISTERED

Big Type Duroc Jersey Hogs

Defender Boars ***Defender Sows***

DENVER SHOW, 1920 I WON

First Prize Junior Yearling Sow

Second Prize Senior Yearling Sow

The Only Classes Shown

GREEN ACRE FARM

H. W. J. Edbrooke, Prop. 6th & Wadsworth, Denver

Registered Ayrshires

FOR SALE.

Two cows, and their calves. One cow is 4 years old; other is 8 years. Two calves 7 months old. Papers furnished. These Ayrshires purchased from the Colo. Agricultural College.

A. D. BASHOR. Rte. I, BOULDER, COLO.

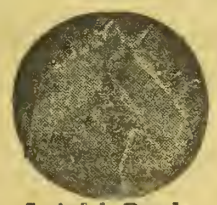
Dear Fellow Breeders and Farmers:

We wish to thank you for the success of our March 10th sale, and extend to you another invitation to attend the next sale.

Wm. Upp, Deer Trail, Colo.

Breeder of Big-Type Poland China Hogs.

Glendale Stock Farm



Irvindale Rowdy Grand Champion Belgian Stallion Chicago, 1917, Denver, 1918 and 1919

Breeders of

BELGIAN HORSES and POLLED HEREFORD CATTLE

Young Stock Always for Sale

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BEAU ASTER

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145). Sire of the dams of these champions. Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

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Holyoke, Colo.

H. C. DENNIS, Auctioneer

FORT MORGAN, COLORADO

Registered Shorthorn and Jersey Cattle

Real Estate Sales Conducted. I can sell your real estate if it can be sold.

Wire at my expense for dates.

Phone: Res. Morgan 155J; Office Morgan 15

Polled Herefords

Double Standard

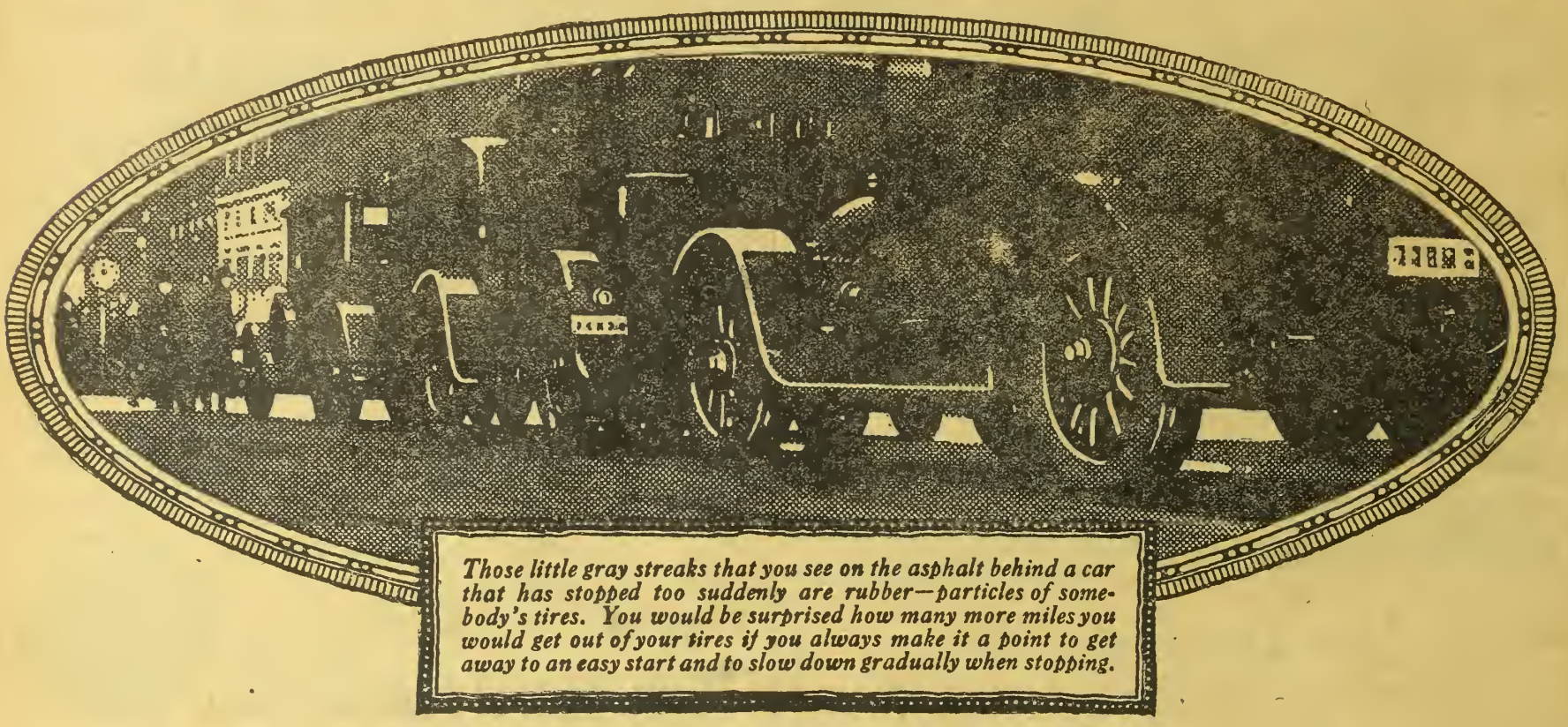
Herd Headed by Polled Dude 2nd 11187, 612340

Beau Donald, P. Plato and March On Blood in the Herd

SMITH LIVESTOCK CO.

Chivington, Colo.

Tire Economy Begins with Better Tires



Those little gray streaks that you see on the asphalt behind a car that has stopped too suddenly are rubber—particles of somebody's tires. You would be surprised how many more miles you would get out of your tires if you always make it a point to get away to an easy start and to slow down gradually when stopping.

ONE out of every ten men you see on the street is a motor car owner.

There is not a man or woman in the country whose daily life is not affected in some way by motor transportation.

Anything that tends towards waste and extravagance is a tax on everybody.

* * *

Because of casual buying the average motorist is being compelled to pay out more and more every year for tires.

Once let Americans realize that a thing is costing them too much and they soon find a way to correct it.

They are beginning to understand the high cost of poor tires and to *stop* accidental buying.

Going to the dealer who not only displays the sign of good tires in his window, but who recommends and sells good tires because he believes in their economy.

* * *

The United States Rubber Company is bending every effort to keep pace with the growing demand for tires, but placing responsibility for quality ahead of every other consideration.

In the interest of better tires it produces more of its own rubber than any other rubber manufacturer in the world.

It introduced the first straight side automobile tire.

It produced the first pneumatic truck tire.

Two of the greatest contributions to tire and motor economy ever made.

* * *

The idea of quality in tires is just beginning to take firm hold on this country.

And the firmer the hold it takes, the smaller the tax that motorists will have to pay.

United States Tires

United States Rubber Company

Fifty-three Factories

The oldest and largest Rubber Organization in the World

Two hundred and thirty-five Branches

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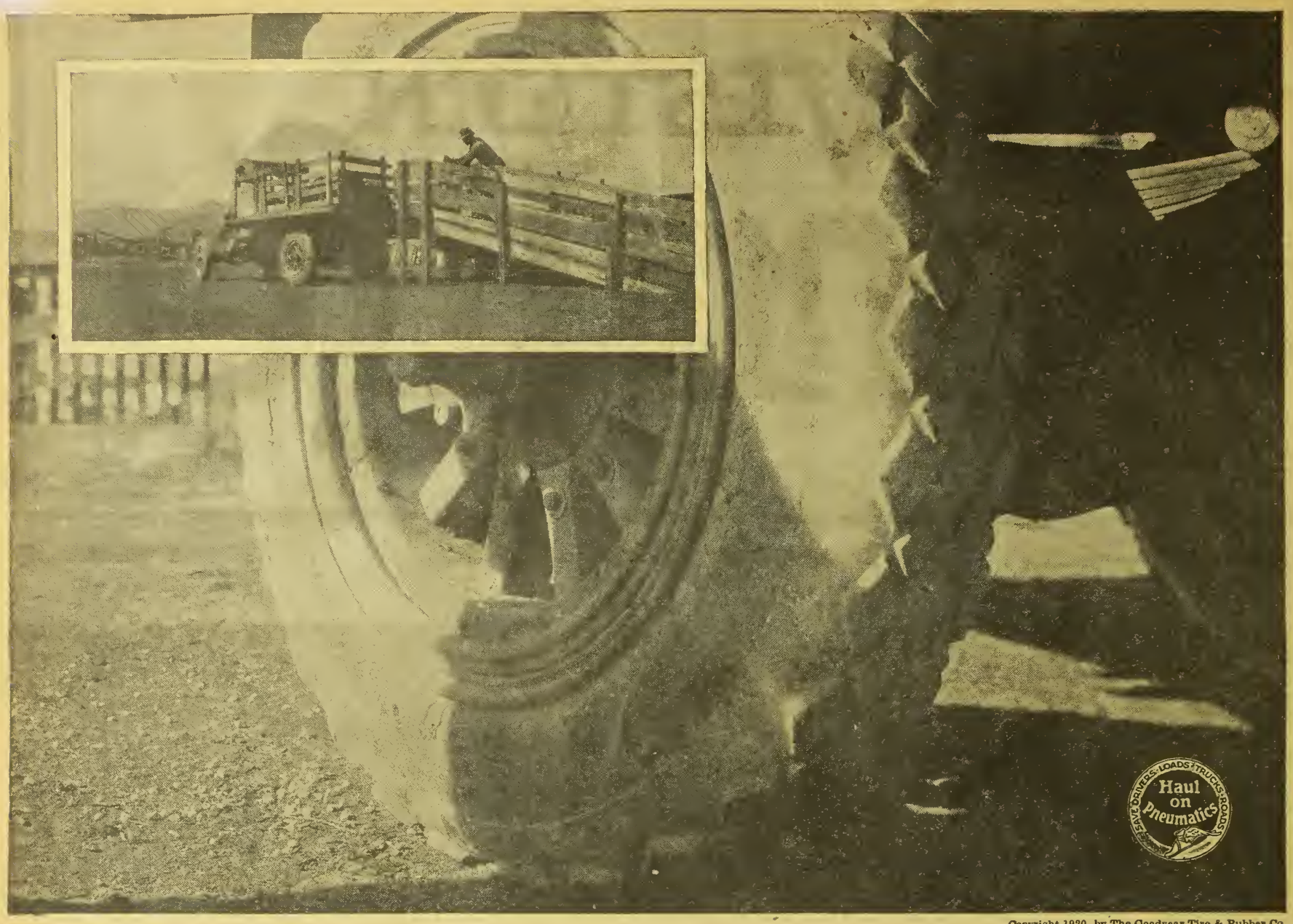
APR 27 1920

WESTERN FarmLife

Vol. XXII. *Denver, Colorado, April 15, 1920.* *Semi-Monthly*

FOUR DAUGHTERS OF CHAMPAGNE ON ELMWOOD STOCK FARM, BROOMFIELD, COLO.



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"The use of Goodyear Cord Tires on our hog ranch is a source of all-round farming economy as well as of simple hauling economy. These tires save time and the handling of supplies and animals while reducing wear on truck, minimizing operating cost, saving hog shrinkage and sickness in transit and demonstrating other important advantages."—N. T. Shearman, Owner, Shearman Hog Ranch, P. O. Box 452, El Paso, Texas

As in the instance cited above, a large number of farmers, planters, dairymen, and ranchers are reducing much of their general farming work, in addition to their actual hauling work, with pneumatic truck tires.

By freeing farm trucks of the handicaps imposed by solid tires, Goodyear Cord Tires relieve farmers of the necessity of hauling slowly and laboriously either with teams or solid-tired trucks and thus hindering other activities.

The full traction, cushioning and nimbleness of Goodyear Cord Tires primarily equip a motor truck to go anywhere on and off a farm with utmost protection to mechanism, load, driver and plowed ground or paved road.

Thus these athletic pneumatics save time and labor in the handling of supplies, crops and stock, and in the operation of power-driven farm machinery, enabling easier feeding, watering, fencing, threshing, wood-cutting and the like.

The rugged strength of Goodyear Cord construction, affording the foundation of the whole success of pneumatic truck tires, results both from Goodyear pioneering work and that extraordinary care in manufacturing which protects our good name.

The detailed reports of many farmers using pneumatic truck tires to improve the work connected with diversified crops, or such specialties as fruit, livestock and dairy products, can be obtained by writing to The Goodyear Tire & Rubber Company, at Akron, Ohio.

GOODYEAR
CORD TIRES

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

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Largest Circulation of Any Farm Magazine in the West

WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Published Semi-Monthly by The Farm Life Publishing Co., Denver, Colo. 1518 Court Place.

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Entered at the Denver Post-office as Second Class Matter

VOLUME XXII. DENVER, COLORADO, APRIL 15, 1920. Number 8.

Analysis of Weld County Rural Church Survey

ATTENDANCE POOR, SALARIES LOW AND BUILDINGS UNATTRACTIVE.

FREDERICK T. HOLLOWELL.

APPLYING the "measuring rod of religion" to every man, woman and child in the United States, the church and community survey, begun last June by the Interchurch World Movement, is beginning to reveal facts about the village and country churches of America that are making church people wonder what the function of the Christian religion is going to be during the years immediately ahead. These facts, revealed by investigators of the respective communities, and not by "uplift experts" from the home office in New York City, are bringing the church people, particularly of the rural districts, face to face with the realization that the village pool rooms and country stores have come nearer than the churches to supplying the craving for social intercourse of young America.

So thorough is this investigation that all the facts will probably not be tabulated in complete form before the end of this year, although officials of the Interchurch say that more than half of the 3,000 counties of the country will have been completed by June of this year. When the survey is finished a map of every county in the United States will be made, showing the location of each church, and revealing graphically many facts that will be startling to many who have not kept closely in touch with church activity—or inactivity—within recent years.

The survey has been conducted with the county as a unit. Although the returns from the state of Colorado are not yet complete, sufficient data have been gathered to enable Interchurch officials to make some general statements which will hold true for the whole state. Figures gathered from Weld county, they believe, are fairly representative of the condition of the country and village churches throughout the state. We shall consider hereafter in this article some definite facts concerning Weld county.

Investigators found that in Weld county there are sixty-six organized churches, thirty-six of which are in the villages and thirty in the open country. In this number of churches there are twenty-four denominations represented.

The total population of the county is 44,714; so that there is only one Protestant church for every 798 inhabitants. It would seem from these figures that the county has not enough churches. But let us consider the other side of the question.

The average Sunday morning attendance for each church is sixty-seven, although the average seating capacity is one hundred and eighty-five. There are only seven village churches and not a single country church in the county with an active membership of over one hundred and fifty souls. Four village churches and four country churches have an active membership of less than twenty-five.

We can readily see, then, that although there are 798 souls for each Protestant church, there are far more than sufficient churches in the county to accommodate all who want to attend, when we consider that the vast majority of the churches have an attendance of between 25 and 150.

Then what is the matter? The answer lies in two conclusions reached by those who have conducted the investigation: First, that although there are more than enough churches to seat all who want to attend, the trouble is that most of the churches are unattractive and out of date; second, that the salaries paid to ministers have been so miserably low that those who are naturally fitted to lead the young people into the churches could not afford to go into the ministry.

Let us consider the ministerial situation in Weld county. Remember that what we say about Weld county holds more or less true for every county in the state. For the sixty-six churches of the county there are forty-two ministers. Eleven of these follow some other profession at the same time, in order to make a living. Four are students of theology, one is a teacher, one a painter, one a doctor, one a newspaper writer, and one owns and works his own farm. There are twenty-eight ministers who minister to only one church, nine who preach for two congregations, two who preach for four, and one who holds services in five churches, and who does other things besides to gain a livelihood.

This is why: Only one minister in the county receives a salary of more than $2,000; only eight get a salary in excess of $1,500; three receive no salary at all, but must depend upon "collections;" and the average salary is $1,329. And, in computing this salary, a parsonage of $250 rental value was considered in each case.

That is part of the black side of the case. It would not be fair to give that side of the case without also showing that, despite these obstacles in the way of the progress of the church, there was a considerable gain in membership during the past year. This shows, according to the investigators, that the people of the county are beginning to see the situation and are of their own initiative beginning to correct conditions. Farmers who realize that they cannot keep pace with the developments in modern farming without automobiles and modern farm machinery also see that in order to make the church do its part in attracting young people it must also be modern and must have a modern appeal. Although more than half the pastors are receiving less than a living wage, the wide-awake people of the country sections are beginning to realize and correct this situation.

Last year in Weld county there was a net gain in church membership of 379 souls, or fourteen per cent of the active membership of the county.

In making this survey the Interchurch World Movement has been most careful to emphasize the fact that it is not seeking to "consolidate" or "unionize" any of the churches of the country, and its program is decidedly not an "uplift" scheme. One of the best definitions of the movement is that "it is a movement of, by, and for thirty evangelical churches of the United States, governed and controlled by them, and designed to promote co-operation among them in their missionary, benevolent and educational enterprises." Great care has been taken to preserve unto each denomination its complete autonomy in matters of theology and church government.

It has been the main function of the Interchurch World Movement to glean facts, facts, facts, and present them to the various denominations for their consideration. After the facts in this county-by-county survey have been presented to the people of the respective counties, the people themselves begin the formation of a program for their own county. The Interchurch World Movement simply presents the facts. It does not say, or urge, that the people do this or that, but simply presents the survey results and asks the people to work out their own problems with, if they choose, advice from the Interchurch officials.

An Idaho Farmer's Venture in Direct Marketing

SOLD $50,000 WORTH OF APPLES, SPUDS AND SUGAR IN CHICAGO.

PAUL CARTER.

BY selling direct to the consumer $50,000 worth of Idaho apples, honey and sugar, H. J. Kingsbury, an apple grower of Twin Falls, Idaho, has given a practical demonstration in elimination of the middleman. He raised his own produce, or the greater part of it, and personally went to Oak Park, Illinois, a suburb of Chicago, to deliver it to his customers, composed mostly of friends he made while a resident of Oak Park many years ago.

Mr. Kingsbury also sold 2 carloads of Idaho potatoes and delivered or directed the delivery of 13,000 boxes of apples, of the Jonathan and Rome Beauty varieties, two cars of honey and one car of sugar. In this manner he was able to eliminate the middle man and sell much lower than the merchants in Chicago and nearby cities were vending them

While at Chicago he was continually fought by the merchants, who tried in every way to keep him from selling his produce, but to no avail. He did a large business and as he handled only the choicest produce, he made many new friends and future patrons.

For a long time Mr. Kingsbury had been interested in the proposition of selling produce to the consumer directly and at a lower price than at which the merchants were selling it . Last fall he decided to put it into effect.

Some time before apple picking time, Mr. Kingsbury sent out cards to friends and acquaintances in the old home town, Oak Park. These cards were in reality, order blanks, and most of them came back filled out for several boxes of Jonathan or Rome Beauty apples. Some of the people also wanted potatoes.

The returned cards were segregated into little piles, each representing a town or community ordering produce. Shortly before the apples were shipped notices were sent to the customers, who were told to have the checks ready, so that no time would be wasted in delivery as draymen come high in a place like Oak Park.

Immediately following the apple shipment Mr. Kingsbury left, with his wife, for Oak Park, to manage the delivery of the fruit. A few days' delay in distribution to customers might result in a tremendous loss and it was necessary to go at once, so as to be on hand on arrival of the fruit.

The apples arrived in first class condition and several trucks were hired to deliver them. Everywhere people were delighted with the fruit and clamored for more. Orders were so numerous that it was impossible to think of filling them.

Advertisements were placed in the leading Chicago dailies quoting the prices of apples and each day's orders were bigger than the preceding one. Before many days all of the apples were delivered and people kept clamoring for more. While Mr. Kingsbury was unable to supply the demand he made a name for himself as an apple dealer that is known throughout Chicago and suburban towns and next fall he is looking forward to even greater success. Oak Park is built up largely with apartment houses and there are no cellars or storage places for apples in the homes, yet there was such a demand that Mr. Kingsbury delivered 8,000 boxes of Jonathans and Rome Beauties in that suburb alone. A $25 advertisement in a big Chicago daily would sell a car load of fruit. People flocked to the cars for the fruit and he could have sold many, many more boxes than he had.

This experience proved that the Chicago people like Idaho apples and are willing to pay any price within reason for them. The fruit last year was delicious, the apples being firm and juicy, well worth the money asked for them.

It so happened that at the time of Mr. Kingsbury's visit east sugar was selling at the Chicago stores for 20 cents a pound and it was all but impossible to get. Dealers were vending it in ½-pound packages that far from met the wants and even the needs of the people. He knew that sugar in Idaho was plentiful so he ordered a carload sent to Oak Park. Although repeatedly told that the shipment would never arrive, he traced it daily until it arrived and then he placed a guard over the car to see that nothing happened to it.

To his old friends and customers he sold 25 pounds at a time and to new ones 10 pounds, providing they purchased a box of apples. At once there was a howl from the Chicago grocers —"he was profiteering"—and their complaints were rewarded by getting Mr. Kingsbury's name on the front page of a leading Chicago daily—the best bit of advertising he ever got, he says. He was listed along with the "sugar profiteers." It worried him little, however, for he knew it would take more than a howl from disgruntled grocers to convict him, as his prices were reasonable. His expenses on the sugar deal were great, he says, and his profits meager. In fact, he was doing the people of Chicago and nearby cities a big favor for as before stated, sugar was practically unobtainable there through the regular trade channels. Nothing was ever done about his alleged profiteering.

Profitable Hog Production on Colorado Plains

PRACTICAL SUGGESTIONS FROM A BREEDER WHO KNOWS THE GAME.

D. SCHILLING.

Recently a number of farmers from the neighborhood of Strasburg, Colo., drove to the J. O. D. Ranch at Aroya, to inspect the hog raising operations carried on there by D. Schilling, the well known breeder of Durocs. These farmers were from a section that is expanding rapidly as a hog raising district, using the feeds common to the non-irrigated lands. They are finding good hogs profitable. Their visit to the J. O. D. Ranch was of great educational value. Not only were they able to see the results of good hog management, but Mr. Schilling gave them the benefit of a lecture on the subject so full of sound practical advice that it is worth publishing for the benefit of thousands of others who are making a start in pork production on the plains.—Editor.

WHAT kind of hogs will be the most profitable to breed, raise and fatten? There is only one answer, and that is purebred and the best, because they take on and will fatten so much quicker and cheaper than the scrub and they will sell on the market so much better, because they will be even in color, markings and so forth.

What breed of hogs you should adopt is entirely a matter of your own conviction. We breed, feed and sell Duroc Jersey hogs, because we have found them prolific, good mothers not subject as easily to disease, mature quicker and feed out for market at an earlier age, and, for the butcher, give a better dressing percentage. The red hog runs more to fat and probably does not give you as good a side of bacon as the Hampshire, for instance, but for the all around hog we consider him by far the best and most profitable to raise, and the yards of Chicago, Kansas City, Omaha and Denver will tell the same tale, handling a greater percentage of red hogs.

The Duroc Jersey of today is being bred for size, mainly in order to outweigh the mammoth Poland China, and I personally am inclined to keep away from extreme type of Durocs, which wins now in all eastern shows, as naturally this type will not mature early, and while being bigger at the end of a year it is almost impossible to make the hog weigh 200 pounds and be finished for the butcher in six months. Better and more practical hogmen than myself, however, have tried to convince me differently, but I have to fit my standard to my feeding conditions as they exist here and I have to get hogs to market at 6 months of age, well finished and weighing 200 pounds or thereabout, and that is the weight the butcher desires right along in Denver.

You all, of course, desire to make money out of your hog ventures no matter if you raise purebreds for breeding purposes or market hogs, and in either case the first thing is to give your hog business the attention it deserves and not let it become a side show, or pay no attention to it.

Cleanliness is Vital.

Hogs need shelter, shade, clean water and exercise to do their best for you and, besides, they have to be kept in clean quarters, especially at farrowing time. The old idea that anything is good enough for a hog, that he loves mud and dirt and that corn alone is the feed that makes a hog grow, is an expensive theory, and if practiced a very costly one.

In raising hogs the first idea should be to try to get as good a litter and as big a one to raise to maturity as possible. You should keep out of your litters those gilts which are lengthy, smooth and conforming with the type you have decided on. Such sows will farrow and raise large litters, and big litters will cut down the cost of caring for the sow, as it divides the cost among the number of pigs she produces.

We have found that it pays to not breed a gilt too young. We try to breed gilts not younger than 8 or 9 months, thus allowing her to gain her growth and thus preparing her better for maternity. Overfeeding the sow just before and right after farrowing time is one of the main causes of trouble and we have been unfortunately handicapped quite often by our help, which meant well, but did not know any better.

"Feed with brains," is about the truest slogan in the hog business and certainly an important one with reference to the brood sow. Your sow, during the time of gestation, should have plenty of exercise. Feed her on the ground away from the sleeping quarters and keep her just in fair flesh. About ten days before farrowing time put her in farrowing quarters and give her sloppy feed, which prevents constipation, so often the cause of her losing her pigs, becoming feverish and eating them. Corn should be fed as little as possible during this time, as it produces heat and increases feverish conditions in the sow. No feed for 24 hours after farrowing, but access to clean water and if possible, have the chill taken off. Afterwards for a period of ten days feed a thin slop of shorts or ground oats with a little tankage in it and gradually make your slop thicker and add corn, as the sow regains normal conditions and the pigs nurse more heavily. If the sow is fed too heavy in carbonaceous food it will mean an upset stomach, pig scours, thumps, and other diseases. Where skim milk is available, you can cut out your grain to a large extent, as one pound of grain is equal to 5 pounds of milk.

The Critical Period.

When the sow farrows that is the time to look after her. You had her in her pen for several days, she is used to you and now is the time to help her and yourself. When her pigs arrive, take them at once and put them in a box covered up and in a warm place. A hot water bottle will do fine, but see that it cannot burn them. After they are dry and lively put them next to her and let them suck. When pigs will not suck right away strip a little milk into their mouth, but by all means do everything about the sow quietly and disturb her as little as possible. Do not let the sow eat her afterbirth, but remove same and under all circumstances keep her farrowing pen clean and dry and well ventilated. Bad air, where many sows are kept is bad for the pigs as well as the sow and tends to foster disease.

We do not let a boar serve a sow before he is seven months old, and then only sparingly. We want him to become strong and mature well. The boar needs exercise and should be kept just in good growing condition and not too fat. In a community like yours as I understand it, you should, if possible, keep only one or two boars easily accessible to you all and charge a stud fee for each sow, to pay for the keep of the boar. A community boar or boars will enable you all to raise about the same kind of pigs, which naturally you can bunch together at marketing time and, being even, will bring more.

Now as to feed. We believe in pushing our hogs from the beginning until they are finished. We find that the most economical way and the most profitable. The pigs will eat with the mother and when we turn them out with the mother before weaning them, we arrange a creep, where the pigs can get through and the sows cannot.

After weaning, all pigs go on a self feeder, which contains at all times shelled corn, shorts and tankage, and which they eat as their appetite tells them.

Corn, Shorts and Tankage.

What we consider a balanced ration and have found so by experiments is a ration of 60 pounds of corn, 30 pounds shorts and 10 pounds tankage. But never feed corn alone, not that it might hurt the hogs, but it will not put on the fat as well as a balanced ration. With this feed we let our hogs have access at all times to alfalfa hay in winter and fresh alfalfa in summer. All these feeds have to be supplemented besides by a mineral substance and we keep before our hogs coal, slacked lime and a little salt.

We do not believe in prepared hog feed or hog powders. Those people who manufacture them are playing on the ignorance of the hog feeder. The coal contains iron and sulphur which are good for the blood. Salt in small quantities is needed and the lime also. In other words, your hogs need a variety of feeds and if you have it there is nothing better than milk, and the variety for the young pig.

Every farm is differently adapted for this feed or the other. Some of you grow corn, some barley and some wheat and all have their value as hog feed in the order mentioned, but whatever you feed, get your hog finished as quickly as possible, to make you the most money. Do not sell your hogs half finished. The butcher or speculator will not pay the top price for them; rather buy the feed if you are short and you will get it back on the sale of the hog.

All these feeds, of course, are concentrates and should be supplemented by pasture of some kind to bring the cost down and we here have alfalfa, which, however, we do not pasture, but cut green and feed in racks, the same then, alfalfa hay, in the winter. For you, who have no alfalfa, I would recommend to let your hogs graze the wheat, rye and oats, but take the hogs out before they damage the crop. Rape pasture is of great service and wherever you have pigweed or ever sow a piece, you will find it an excellent pasture and the latter will hardly be killed out. Don't run your hogs always in the same lots. Plow up your lots, so as to give them new earth and allow the sun to benefit the soil. You will find, that with the rest of cleanliness, it helps to keep away disease.

Common Pig Ailments.

There are more diseases to which the hog is susceptible than any other animal that I know of, and I am not veterinarian enough to give you an intelligent lecture on all of them. It is sufficient, however, to point out to you that certain diseases are common in all herds more or less, and the following ones are the most common and you will run across them continually.

Thumps in Young Pigs—A condition usually produced by overfeeding the sow and lack of exercise, thus fattening the pig too quickly. Remedy—Force the pigs to take exercise and drop down on the feed of the sow, at the same time give her a laxative.

Worms—These are found in small pigs before weaning, as well as in larger ones, and are round worms or long worms, the latter most always producing a cough. You will notice your pigs to become listless and thin. There are untold remedies on the market, but we have found the best remedy a teaspoonful of turpentine for each 80-100 pounds live weight given in milk for three days, and we keep away the feed for 24 hours before giving the medicine. We are also giving in some cases Santonin and Calomel about 3 grains each to 100 pounds of live weight. Keep away the feed the same as before and put the powders into a mash, so that all get about alike.

Pig Scours.—Occasioned usually by overfeeding the sow or an upset stomach, which results in her milk causing inflammation of the pig's intestines. Give a laxative to the sow and provide clean, dry quarters with sunshine and good air.

Lice—This is one of the most deadly enemies to the well being of the hog and costs you money, because the lice are eating the profit. We dip our hogs the same as our cattle and use as a dip water, Kreso and coal oil. Crude oil is probably as good and care should be taken, that not too much coal oil is used, as it might blister. Any good disinfectant will do, only do it. Castrate your pigs before weaning, the slight disturbance is borne better with mother's milk than afterwards.

Some of you gentlemen have had sows that eat their pigs and you can well understand that this is not natural, but caused by an abnormal appetite and a ration containing very little protein. We try to have our sows well fed on protein and cooling feeds before farrowing so as to avoid any feverish condition. At times when we found a bad case, we have put a little coal oil on the young pig, taking care not to blister it.

Some successful hog growers cut off the tusks of all pigs on the second day as at times the pigs will lacerate the teats of the sow when sucking. When doing this be careful to avoid injuring the gums.

Do We Need Better Roads?

This is not a plowed field. It is a road through which flivvers have been plowing. The man at the rear wheel is the Associate Editor of Western Farm Life. The location is "somewhere in Colorado." The time, this winter, after a thaw. A photographer could pick out a hundred spots in different parts of the state, especially west of the Continental Divide, where unusually heavy snows, followed by the early spring thaw, converted the unsurfaced roads into masses of mud. A good many hundreds of miles could be gravel surfaced with the money lost in interruption to transportation, cutting down of loads, delays in hauling goods to and from market through these bad spots in the highways.

Hog Feeding Suggestions.

Ans. to J. T. H., Morgan County, Colo.: Would suggest that for your last fall shoats that you are planning to put on the June market that you put them on alfalfa pasture with a ration of 3 to 4 pounds of corn per hundred weight a day. I know of no cheaper way of putting on gains than by this method. I have seen gains of 100 pounds put on with as little as 250 to 300 pounds of corn, when fed with alfalfa pasture. Barley may be used in place of corn in case you find it more economical. For feeding with alfalfa I doubt the advisability of using such feeds as oil meal or tankage. However, some feeders feel that a little tankage is advisable. They usually use about a 5 per cent ration when fed on alfalfa. The 5 per cent, of course, being the percentage of tankage to grain fed.

For the young pigs that you plan to put on the market in the fall, would suggest the same feeds as above. Using 2 to 3 per cent ration of the grain with the pasture. For the first two or three months what you want to make is a good frame, and with this system of feeding you will get growth as well as good substantial gain. Your skim milk is most valuable for these young pigs. By all means feed it sweet, but be careful that there is not too much froth on the milk when you give it to the pigs. This very often causes bloat. I have seen quite a number of pigs dead from the result of froth after drinking frothy milk. It would be advisable to skim off the froth before the milk is fed. Regarding mixing mill feed with the skim milk, would say that this can be very profitably done; however, it is not always convenient to go to this trouble. So far as I can see nothing is gained by the mixing of the feed in the slop. It would, no doubt, be more convenient to feed the milk alone and also the grain alone. Your idea regarding tankage is just about right, it is not so necessary to feed it when the hogs are getting alfalfa pasture.—H. A. L.

Wyoming Claims the Record Yield on Potatoes

SPUD CROP BEING DEVELOPED FOR BOTH SEED AND TABLE.

T. S. PARSONS, Extension Agronomist, Wyoming University.

POTATOES succeed remarkably well in practically all parts of Wyoming, both under irrigated and dry-farming conditions. They are one of the surest crops on the dry farm, giving fair yields even in the dryest years when given proper care. The potatoes grown under dry farm conditions also have more vitality and are usually of better quality than those grown under irrigation. It is difficult to produce good seed potatoes under irrigated conditions, therefore it devolves upon the non-irrigated sections to produce seed for the irrigated sections. This is why the potato growers in Colorado, Idaho and Wyoming have been going to Minnesota and Wisconsin and to Western Nebraska for their seed potatoes.

Potatoes adapt themselves to practically all conditions of soil in Wyoming. There are certain sections of the state however, that stand out more prominently than others as potato growing sections. Where poor potatoes are produced it is not the fault of the climate or the soil, but is usually due to improper cultivation and improper irrigation. The dry farm section of the state embraced in Laramie, Platte, Goshen and Niobrara counties, where there is considerable light sandy soil, produces the finest type of dry land potatoes that are in great demand for seed. The irrigated sections of Platte and Goshen counties also produce good potatoes, Goshen county being one of the greatest potato producing sections of the state. The potato acreage in this county was increased from 400 to 4,000 acres in a single year.

The Bighorn Basin is the other great potato producing section of the state. Here the soil is entirely different than that in the eastern section, being principally heavy clay with occasional pieces of sandy land. Potato growing has been developed very rapidly here and more potatoes are probably shipped from the Bighorn Basin than from any other part of the state. A distributing company has had its headquarters at Powell for the last three years and has handled the potato situation in that section of the state to good advantage. The farmers on the irrigation project have found potatoes to be one of their most profitable crops. Potato growing has also helped to put their farms in better shape for growing other crops.

In the Higher Altitudes.

The potato crop also does well at the higher altitudes of the state. The moderately cool climate with the maximum amount of sunshine develops potatoes of the highest quality. The vines are comparatively free from diseases and the tubers develop a high percentage of starch and the firm flesh that is so desirable in good market potatoes. Successful crops of potatoes are grown up to altitudes of more than 8,000 feet. On the Laramie Plains the highest farming section of Wyoming potatoes are one of the best crops grown. C. P. Rucker whose farm is about 7,200 feet above sea level, grew 35 acres of potatoes in 1919 from which he harvested 3,000 sacks. F. W. Hatch, another Laramie Plains farmer, has grown potatoes for six or seven years and reports that he has never had a failure. He obtained several premiums on his potatoes at the Wyoming State Fair in competition with many growers from the lower sections of the state.

Interest in potato growing is on the increase in Wyoming. There is much interest this year in the production of certified seed. At least three counties have already purchased their seed and several hundred acres will be planted this spring. Inspection will be given by the agricultural college and those fields passing the requirements will be certified. The dry lands in the eastern part of the state are particularly fitted for growing seed and there is a good market for all that can be produced in the irrigated sections of this state and Colorado as well as in the early potato growing sections of the south. The southeast coast potato growers get their seed from Maine while the growers in Oklahoma and Texas look to Wisconsin and Minnesota for their seed. Wyoming and Colorado have the advantage of more direct railroad connections and can compete successfully with these states in seed prduction when the growing of seed is given the attention it should have.

Wyoming can produce more potatoes per acre than the eastern or northern states, especially under irrigation. A grower near Torrington, Goshen county, sold $2,630 worth of potatoes from six acres of land last fall. This is nearly $440 per acre, and this land sold for less than $60 per acre five years ago. A farmer near Lingle in the same county on a non-irrigated farm reported as follows:

Medium crop of potatoes 150 sacks per acre. Sold at $2 per sack	$300
Seed, feed and other expenses, including hauling	50
Net profit per acre	$250

These records of course are above the average, but large yields of potatoes are not uncommon over the state. Many farmers last year received as much as $200 per acre for their potato crop. These large yields have had an important effect on land values, and the development of the potato industry means much to the state. Two hundred dollars' worth of potatoes produced on an acre means at least $300 per acre land, and a good deal of land has sold at that price in the Powell section. A monster storage house at Powell and a dehydrating plant at Cowley will bring about a still larger increase in the potato acreage in the Bighorn Basin this year notwithstanding the high price of seed.

Ship Under One Brand.

Potatoes from the Basin section are shipped under the name of the "Shield" brand to Chicago, Detroit, Memphis, Fort Worth, Omaha and many other cities, where they have found a ready market. Pearls, Netted Gems and Triumphs are the varieties most extensively grown for these markets. The Triumphs, Pearls and Irish Cobblers are the varieties most generally adopted to be grown in the certified seed producing localities. In the irrigated section of the eastern part of the state the Downing and Kings are popular varieities. The Early Ohio has been extensively grown in all parts of the state but it is no longer a popular variety.

The large yields of potatoes in Wyoming have attracted the attention of growers and dealers as well as the agricultural papers of the country from time to time. Many large yields have been reported but unfortunately many of them have not been officially confirmed. But two authentic large yields will be noted here. William Madden of Riverton, raised 750 bushels of potatoes on an acre of land. The crop was grown on land that had been in alfalfa for several years and had been heavily manured. The potatoes were planted in rows 26 inches apart as close together in the row as the planter could be made to drop them. Unfortunately no record was kept of the percentage of marketable and unmarketable potatoes.

Holds U. S. Record.

The highest yield for an acre of potatoes for which there is an authentic official record, and which is also claimed to be the largest yield in the United States, was made some years ago on the farm of W. J. S. Sturgis, near Buffalo in Johnson county. Mr. Sturgis received the $250 cash prize offered by the American Agriculturist and a like amount offered by the Wyoming state legislature for the largest yield of potatoes on one measured acre.

The total yield of potatoes on the acre was 58,488 pounds or 974 bushels and 48 pounds. Of these 50,320 pounds or 838 bushels and 40 pounds were marketable tubers, and 8,168 pounds or 136 bushels and 8 pounds were small and unmarketable. An average bushel of the marketable potatoes contained 102 tubers, and of the unmarketable there were 462 tubers in a bushel.

The ground on which the crop was raised was accurately measured and the potatoes weighed up by three reliable men appointed for that purpose and the two prizes amounting to $500 were awarded to Mr. Sturgis without question. The expense of growing the acre of potatoes was as follows:

Interest on the value of the land	$ 1.20
Plowing	2.00
Harrowing	2.00
Furrowing for irrigation	1.00
Value of seed	15.00
Cultivating	5.00
Irrigating	8.00
Harvesting	40.00
Total	$74.20

Mr. Sturgis sold his crop for 90 cents per bushel or $754.20 for the 838 bushels of marketable tubers. The small potatoes at 25 cents per bushel were worth $34, making the total receipts $788.20. Deducting the expense of growing and harvesting, $714 was received as the net profit on the acre of potatoes exclusive of the two prizes.

On Killing Morning Glories.

In your March 15 issue, H. O. R., Eagle county, has a worry over morning glories. Can't kill them with salt, too bad! Salt will kill 'em and at the same time fix the land so not a weed or anything else will grow during the balance of his life. Let him take a barrel of salt, knock both heads out and go off leaving that barrel filled chuck full of salt standing there to leach out—and see if they don't all die that are under the barrel! I hate to prescribe a plow for him, because he might be one of those cut and cover fellows that turn a 24 to 20 inch furrow with a 12 or 14 inch plow. But if he isn't, tell him to go off and let the posies bloom until they get in full bloom, but not seeded. Then with a plow and chain plow them under to 6 or 7 inches deep and drag every vine into the furrow and cover. Bury them at the bottom of the furrow, no cut and cover job—then with harrow pack the ground and make a good seed bed and sow to millet, 3 pecks to the acre, and get a crop of hay nice and fine. Do the job all at once; do not go home and wait three weeks before sowing the hay.—A. A. Weston, Julesburg, Colo.

So you were disappointed. I would hate to disappoint you because I too feel proud of Western Farm Life. I had a check written out but couldn't get it to you on account of the flu. Many thanks for the post cards and long life to the Western Farm Life.—W. G. McIntyre, Fleming, Colo.

Milking Shorthorn Herd for the Grand Valley

ORCHARD MESA FARMER BUYS FOUNDATION STOCK AT DENVER SHOW.

ALFRED M. WILSON.

SO far in the Grand Valley the Jerseys and the Holsteins have, for milk-producing purposes, had the field all to themselves. The boosters for the Jerseys are T. G. Twyman of Orchard Mesa, George La Grange, Grand Junction, G. V. Gimple, Clifton, G. H. Petingill and Son, Grand Junction, T. A. Butcher, Highland Park, and G. N. Pend, Clifton. Those who have been singing the praises of the Holsteins are Fred C. Clymer, Indian School; Otis Clymer, Orchard Mesa, and the Garmesa Farms people.

But the exclusive possession of the field by the Jerseys and the Holsteins is not to continue indefinitely, not if H. L. Rooks on Orchard Mesa shall have his way, and I am inclined to think that he will. Mr. Rooks is about thirty-five years of age, full of the energy, the enthusiasm, and the level-headness essential to success and with a large and successful experience back of him. He owns a seventy-acre farm on Orchard Mesa, on which he will be able to raise all the feed, at least for years, that his herd will need. At the present time forty-five acres are in alfalfa. Fifteen acres more are also under cultivation. On these fifteen acres he had during the past season a good stand of corn. A part of the rest of his farm is a little "too wet" for general farm purposes. In other words there is also on Orchard Mesa a seep problem; but Rooks is not the kind of man to let a little thing like that bother him, and he is going right ahead as if there were no seep problem at all. And he is in the right about it; for there is no seep problem on Orchard Mesa, that can not be taken care of easily when a drainage system has been worked out there.

Rooks, as I have intimated, is planning to go into the purebred livestock business; but neither the Jerseys nor the Holsteins appeal to him. On the contrary he prefers the Milking Shorthorns, and at the January Denver Stock show, backed his judgment by investing in a small bunch. These Shorthorns were all prize winners. They are all under two years of age. They are from the Pine Valley Dairy and Farm's company, Colorado Springs. In the buying of these Shorthorns, Rooks had the advice and co-operation of L. P. McCann, the county agent of Mesa county.

Milking Shorthorns bought at National Western Stock Show by H. L. Rooks of Orchard Mesa, Colo. From left to right—C. S. Rooks, T. G. Twyman, H. L. Rooks.

I asked Mr. Rooks why he had turned down the Jerseys and Holsteins and staked his chances for success upon the Milking Shorthorns.

"The Shorthorns," he replied, "are dual-purpose cattle, good for milk and good for beef. Both the Jerseys and the Holsteins are known for their butterfat; but the butterfat average of the Shorthorns is equal to the average of the Jerseys and superior to the butterfat average of the Holsteins. The Jerseys are no good for beef; they are too small. The Jersey bull is a white elephant. If you sell him for veal, you get very little for him. If you keep him until he is grown up you might get a fair price for him if you can dispose of him for breeding purposes. Otherwise you may have to sell him for a price that will not much more than cover his board bill. The Shorthorns and the Holsteins, on the other hand, are both large breeds and can be raised profitably as beef animals; but the quality of Shorthorn beef is superior to that of the Holsteins. For these reasons I selected the Milking Shorthorns."

Pinto Beans Should Prove Profitable This Year

DROUTH RESISTANT LEGUME FITS INTO DRY FARM ROTATION.

BEAN planting time will soon be here. Colorado, New Mexico and Wyoming farmers will be interested in information concerning the state of the bean supply. Pintos have been in bad repute with many growers because of the slump that came with the end of the war, but those who have stuck to a limited acreage on the dry land farm of this valuable crop have had no reason to regret it. War-time plunging in wheat and beans was a patriotic service. It paid in some instances and in others there were losses, but the food was produced and that was the important thing. Now the farmer who is in the bean raising districts, especially the dry lander, can size up the situation from the marketing standpoint, as well as from the standpoint of the rotation and as a by-product in feeding. Conditions indicate that the advice given before the war is good now, namely, that where soil and moisture conditions are favorable, pinto beans will prove profitable as a cash crop.

There has been a great decrease in bean production, as is shown by comparative figures from government crop reports on five of the leading bean states.

Colorado's acreage in 1918 was 252,000, mostly pintos; in 1919 it fell to 69,200 acres, a decrease of 72.5 per cent.

New Mexico in 1918 had 141,000 acres in beans, and in 1919, 128,000, which was only a 10 per cent drop.

Michigan in 1918 had an acreage of 517,000, and in 1919 dropped to 310,000 acres.

California produced beans on 592,000 acres in 1918, and on 395,000 acres in 1919, the shrinkage being at the same ratio as in Michigan.

Idaho's acreage in 1918 was 44,000, and in 1919 it had dropped to 28,000 acres.

The Rocky Mountain Bean Jobbers' association is taking up the matter of bean acreage with various agencies, including the U. S. Bureau of Markets, the Farm Bureaus and the railroad agricultural departments, with a view not only to stimulating production, but to assuring a fair market for beans next fall.

Growing Pinto Beans.

From Colorado Bulletin 234, by Alvin Kezer.)

Time to Plant—Beans are a hot weather crop. Seed is injuriously affected if it is planted in cold soil. Germination will not take place while the soil is cold, and if the soil happens to be wet enough, rotting may take place before the soil warms up sufficiently to permit germination.

Beans will not stand any frost. The very slightest degree of frost is apt to kill them entirely. On account of these reasons, beans should not be planted until the soil is thoroughly warmed up. In most Colorado sections this will be the last week in May or early in June. Successful plantings have been made as late as the first week in July, but the grower is tempting fate too much to make a practice of such planting, as frosts are likely to occur as early as the 25th of August.

While pinto beans and some of the teparies and a few of the Mexican and Indian varieties have been matured in 60 days or less, it normally takes about 90 days to mature a crop even for these short-season beans. In those seasons when frosts hold off until late in the fall, late planting will often make a crop, but frosts do not always hold off until late.

Method of Planting.—If there is any considerable acreage of beans to be put in, a bean planter should be procured, or a corn planter with bean plates. In Colorado beans should always be planted in drills, so that the bean planter or corn planter should be so arranged so as to drill the seed one in a place. It is possible to make use of a grain drill by stopping up the proper number of holes; in fact, many beans are successfully planted with such an implement. The type of grain drill having a revolving cup feed is adapted for this kind of planting.

Most of our grain drills have 7 or 8 inches between drill holes. Stopping up three drill holes would therefore plant 28 inches apart, which is about right for irrigated planting. With a 7-inch drill, stopping up five holes, that is, leaving open the first and sixth drill, would plant 42 inches apart, which is about right for dry land. Some dry lands are strong enough to justify planting 36 inches apart. Stopping up four drill holes, leaving the first and fifth open, would plant 35 inches apart, which is about right.

Pinto Beans on Frank Hawley Farm in the Kiowa Valley of Eastern Colorado.

Under irrigated conditions the rows should be about 28 inches apart. On dry lands, they should be from about 3 to 3½ feet apart. Under very dry conditions it is sometimes advisable to plant 7 feet apart and cultivate all of the intervening space. For irrigated conditions the drill should be thick enough to make one plant every 4 to 6 inches. This will require around 30 to 35 pounds per acre of seed for pinto beans. It will require a greater number of pounds for larger beans and a somewhat smaller number of pounds for the small pea beans.

Dry Land Planting.

For dry land conditions beans should, under normal conditions, be planted in rows about 3½ feet apart and in drills in the row 10 to 12 inches apart. If dry land conditions are a little severe, or uncertain, the space can be made a little further in the drills, say from 12 to 16 inches. According to the rate of drilling, it would take from 8 to 20 pounds of seed to plant an acre under dry land conditions. For an average planting, probably about 15 pounds per acre will be used. When the rows are made 7 feet apart, under very severe conditions, the planting should be 6 to 8 inches in the drills.

Beans of all varieties are rather shallow-rooted surface feeders. Consequently all cultivation after the crop starts should be shallow. The most important part of the cultivation should be done in the preparation of a seed bed. Immediate cultivation should commence about the time the rows can be seen in the field. Where the stand is extra good, beans may sometimes be harrowed a time or two, if care is taken to do this work when the young vines are perfectly dry. If the soil is a little moist, and the vines moist, the young vines will be found to be quite brittle, so that harrowing will break off a large number. With the surface of the soil rather dry and plants dry, the young plants are tough and will stand harrowing. Some of the weeders on the market are excellent tools to use at this time.

The first cultivation with the regular cultivator should be the deepest. This first cultivation should not be over 3 to 4 inches deep. Later cultivation should be as deep or slightly shallower than the first cultivation. When the first cultivation is made, the roots have not extended verey far into the space between rows. The stirring of the surface layer at that time by the cultivator makes a dry layer on top. If this is maintained the beans will root below the dry layer. Cultivation should be aimed primarily to keep down weeds and prevent the formation of a crust. Usually all cultivation should cease by the time the first pods commence to set. Sometimes the plants have grown enough so that cultivation should cease before this time. Care should be taken never to cultivate when the young bean plants are wet, as they are easily broken at such times, and when so broken are very susceptible to certain bean diseases. Under irrigated conditions cultivation should follow irrigation, as soon as the surface moisture and the plants will permit. The aim should be to prevent the loss of water by cultivation rather than to furnish water by excessive irrigation.

Irrigating Beans.

Irrigated Beans.—A study has been made of bean irrigation in eight Colorado counties. This study shows conclusively that it is fully as easy to over-irrigate beans as to under-irrigate them. As an average of all results obtained, two irrigations give higher yields than three or more irrigations. There was some difference as to quality of land; very open gravelly lands would stand more irrigation than sandy loams, loams and clay loams.

In irrigated districts which have a low precipitation and where crops must usually be irrigated up, it is good practice, especially on loam, clay and adobe soils, to irrigate the land before planting, thoroughly watering the land at this irrigation. Just as soon as the soil can be worked after the irrigation, the soil should be harrowed, or disked and harrowed, leveled and planted. Cultivation should be depended upon to conserve the water supply. Irrigated in this way, two irrigations are more effective than three applied after the beans are planted. Cultivation should be resorted to rather than irrigation, to conserve the water supply.

In irrigated regions beans should be given water when they show a need for water, namely, when the plants show a very dark green and commence to wilt during hot periods of the day. If the plants are light green and growing vigorously, irrigation may often be delayed unless it is necessary to irrigate to get the water.

Beans in irrigated districts will usually be planted in rows around 24 or 28 inches apart. The first step in irrigation is to use a furrow opener and make furrows between the rows. Water is run down these furrows under proper control, until the soil is moistened laterally and to a depth of at least 2 feet. This figure, 2 feet, is a relative one. Sometimes there is moisture enough in the subsoil at less than 2 feet from the surface when the surface needs irrigation. In such cases a lighter run of water will suffice. The last irrigation should very seldom be given after the blooming period; just as the plants are coming into bloom is as late as water should be applied in ordinary seasons, and on ordinary soils. Later irrigations delay the maturity of the crop and endanger proper ripening, because of possible frost injury. Such later irrigations do not materiallly increase the yield of beans.

The chief consideration, either on irrigated land or dry land, is good thorough - cultivation. Such cultivation should be given as soon after irrigation as possible to get onto the land, and on dry lands such cultivation should be given after rains as soon as it is safe to work the soil. Cultivation should not be given after the vines begin to run, which is about the blooming period, as previously mentioned.

Scene in the Mailing Room of Western Farm Life.

A load of 39 sacks of magazines, containing 6,529 papers, ready for shipment. It takes seven or eight such loads to handle one issue of the magazine, which goes out twice a month to over 50,000 subscribers, in Colorado, Wyoming, Idaho, Utah and New Mexico. The mailers put the magazines directly into United States mail sacks and the only re-handling that is necessary is to weigh each sack at the postoffice, en route to the railroad station. Postage is paid to Uncle Sam at the beginning of each month on a bulk rate, according to the zone into which the magazines are shipped.

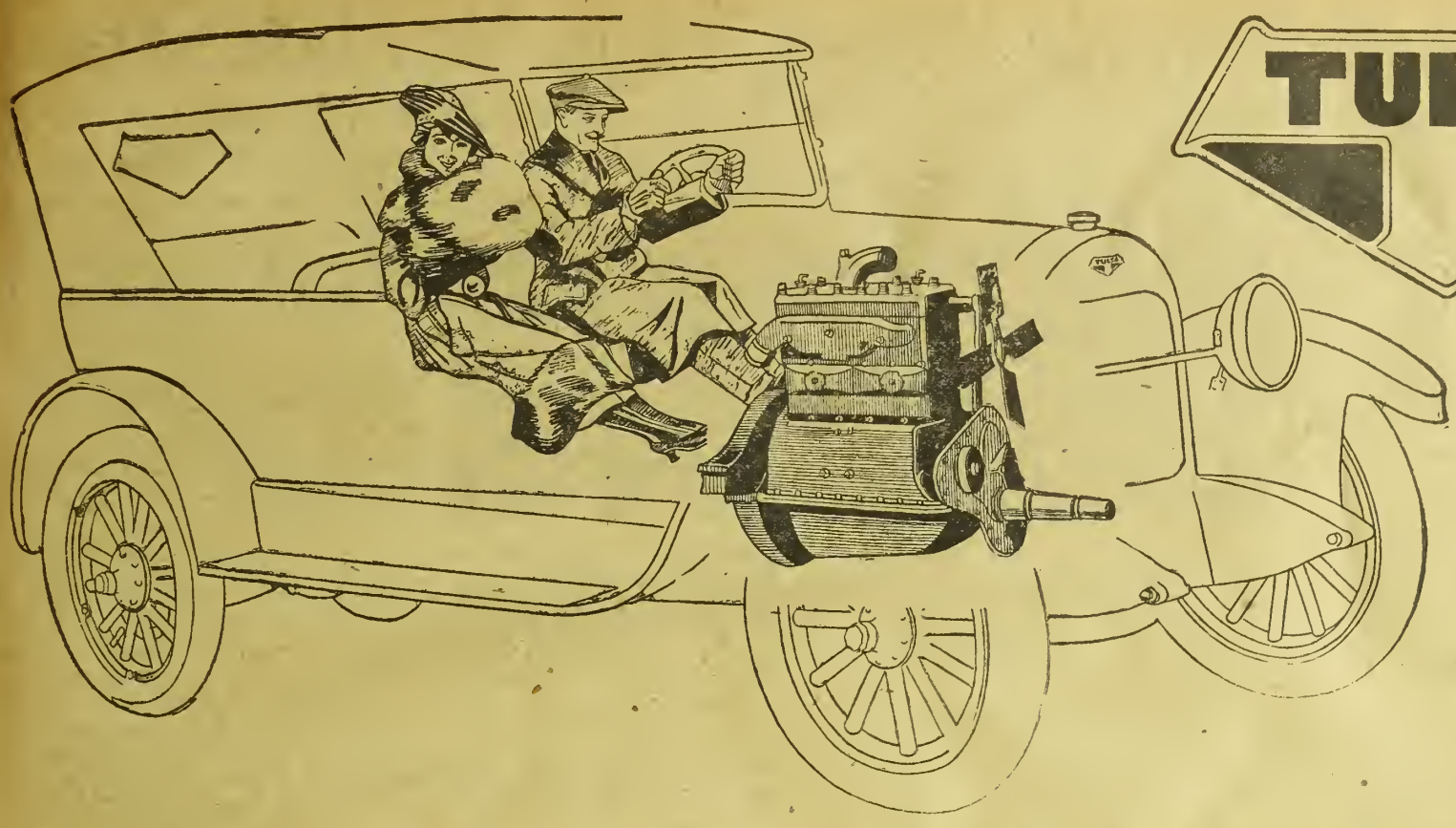
Let Children Have Milk.

On a recent trip from western Colorado to Denver, the writer took supper at the railroad eating house at Salida. Sitting next to him was a father and mother with four small children ranging from 1 to 6 years of age. It was late in the evening and they had been on the train all the afternoon. While waiting for my order I observed these small children and the supper they had before them. It consisted of three cups of coffee and three orders of two slices of bread. The children had a pale look and were small for their age. They lacked the vitality that should be characteristic of children their age. How much better it would have been had the parents thought to order a glass of milk for each rather than the coffee.

There are still many parents who have failed to grasp the importance of milk and its products for stimulating the health and vigor of their children. Every child should have all the milk it will drink. Dr. McCollum's experiments found that no other product will satisfy the requirements for growth of the young so efficiently as milk products.

The Colorado Dairy Council, made up of dairy farmers and manufacturers of dairy products, have as their program of work the plan of education of the people to the importance and economy of milk as a major part of the diet. In order to accomplish this the support of everyone is needed. The Colorado council is progressing nicely and it is important that all put a shoulder to the wheel and keep it moving. Use butter, cheese, ice cream and pure milk in your own diet and help encourage all to do likewise. This program will mean much for the health of the people.—H. A. L.

If we are going to get the things done next spring that ought to be done, we must know what those things are. Make a list now.



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It is this firm which for four years has been building Curtiss Airplane motors, lauded by American aces as the most dependable, the safest and most perfect engine known to aviation.

The judgment of our designing engineer in selecting the "H-S 4" motor has been corroborated by engineers designing some of the most expensive cars in America; and by the unfaltering performance of the TULSA, driven by this plant of superabundance power.

Before this motor was finally passed on, it was subjected to every conceivable motoring strain, by actual road tests. For months it was brutally driven over the roughest roads, up steep rugged hills and through the deepest sand and mud.

Not a feature or point in the performance of this remarkable motor was found lacking, in the exacting eyes of our engineer. It passed every requirement for economy and dependability in operation, surplus power, flexibility and freedom from vibration.

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The TULSA

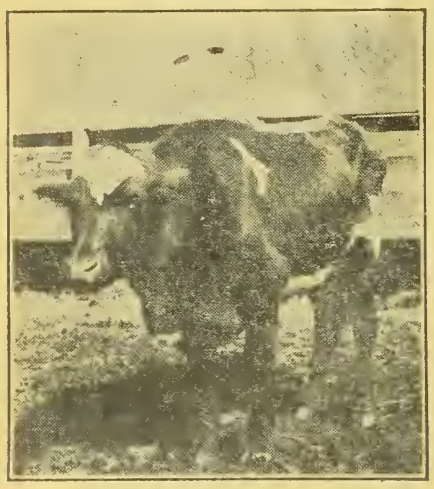
Brisket Disease Shows Increase

PERTINENT SUGGESTIONS TO STOCKMEN.

DR. GEORGE H. GLOVER.

STOCKMEN who ranged cattle in the Pike's Peak district thirty or more years ago, tell us that Brisket disease is not a new disease, but that it has gradually grown more prevalent from year to year. It must now be reckoned with as a factor in the stock business.

It is not confined to the ranges in the region of Pike's Peak, but rather is found on all of the high mountain ranges above an altitude of 8,000 feet. Every year many cases are reported from North, Middle and South Parks and on the high forest reserves. It does not occur in the San Luis valley, save in cattle that have been brought down from the adjacent high ranges.



Steer with Well Developed Case of Brisket Disease before being taken to lower altitude.

The disease is definitely known to exist in Wyoming and New Mexico. It is conservatively estimated that the loss approximates one per cent of all cattle that are kept a considerable proportion of the year at an altitude above 8,000 feet.

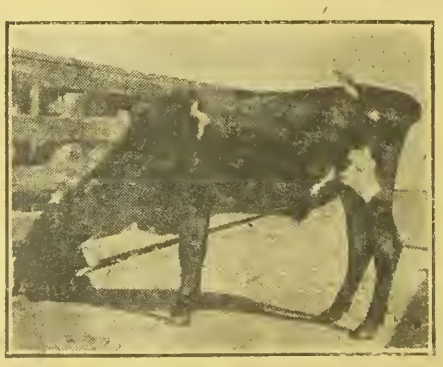
Age does not appear to be a predisposing factor. Animals of all ages are susceptible, inculding young calves. The disease in calves is not generally recognized, because of the absence of pronounced swelling of the brisket. In calves it is invariably mistaken for scours due to other causes. The clinical symptoms in mature animals are—swelling of the brisket, which may reach to the jaw; stocking of the hind legs and a doughy swelling under the belly, abnormal heart action and increased respiration. The animal will most likely continue to eat fairly well. There is no fever. Forced exercise will cause labored breathing, coughing and sometimes hemorrhage from the nose. In the later stages of the disease forced exercise may cause sudden death. The usual course of the disease is from a few weeks to several months. Animals may apparently recover for a time, only to be taken down later with aggravated symptoms. Older cattle ordinarily do not survive longer than a month or two after swelling of the brisket appears. Young animals succumb quicker than the older ones. Death is due to exhaustion of the heart.

On post mortem, the subcutaneous tissue in the region of the brisket is found to be infiltrated with a clear serum, which does not flow freely but can be squeezed out. A large quantity of straw-colored fluid is found in the abdominal cavity and the thorax. The liver is always much enlarged and is of a firm and leathery consistency. The heart is enlarged and flabby and the lungs are edematous.

It seems to have been fully demonstrated by the Colorado Experiment Station that the cause of this condition lies in failure of the heart to compensate sufficient to meet the demands incident to high altitude. The malady is far more common in animals imported from low altitudes. The progeny of low altitude bulls show the greatest susceptibility. The higher the altitude, the more prevalent is the disease. Food as a factor in causing the disease was eliminated by feeding South Park hay in Ft. Collins. The disease is not contagious. Only a few cattle in a herd are affected and the disease does not spread. Efforts to transmit the disease experimentally failed in every instance.

Brisket disease of cattle was made a special project for investigation at the Experiment Station, and it is the opinion of those who participated that the exhausting labor in grazing over the mountains at very high altitudes, combined with the severe climate, results in straining the heart of susceptible indidivuals. This over-strain results in heart exhaustion and generalized dropsy.

Medicinal treatments have thus far failed. Range animals are usually wild and cannot be restrained for the administration of medicines without causing excitement and doing more harm than good. Digitalis would appear to be the most appropriate treatment and if treatment is to be undertaken, the following might be tried. For adult animals, one teaspoonful of fluid extract of digitalis, given daily, mixed with a cupful of water, and administered by drench. For calves the dose is ten drops. After two weeks the treatment should be discontinued for a few days.

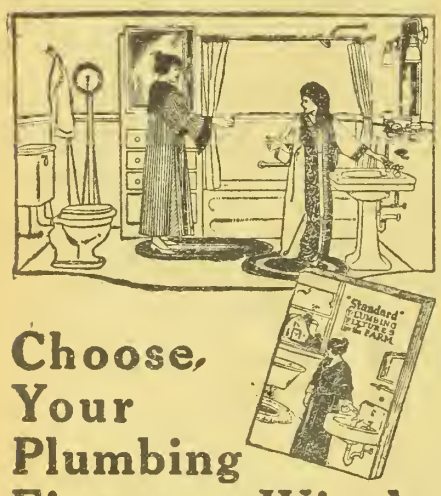


Same steer after complete recovery.

Animals that were shipped experimentally to low altitude recovered in many instances. It has been found that if cattle are taken down, even five hundred or a thousand feet, before the disease has progressed very far, they will usually make a rapid and complete recovery. Two carloads shipped from South Park to Denver recovered and were sold as feeders.

In considering prevention of brisket disease, there are a few things in livestock management on the high altitude ranges that are pertinent. Cattle shipped from low altitudes should be brought gradually to the very high altitudes and extreme exertion for a time should be avoided. Rough handling of an individual may result in brisket disease later. The practice of stocking the range with purebred bulls from low altitudes, while praiseworthy in itself, appears to be responsible for much of the difficulty. Native bulls of equal merit would be preferable. The disease is invariably more common in low altitude bulls and their immediate progeny. Since this disease has not been seen in sheep it might in some instances be arranged to use the extremely high ranges for sheep, especially in cold and wet summers.

The juice of a lemon is excellent as a gargle for sore throat.



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The cause of most tooth troubles is a film. It is ever-present, ever-forming. You can feel it with your tongue.

That film is what discolors—not the teeth. It is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea.

That film is clinging. It gets into crevices and stays. So, despite your brushing, it may do a ceaseless damage. Teeth are safer, whiter and cleaner if that film is absent.

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Dental science, after years of searching, has found a way to combat film. Years of careful tests under able authorities have amply proved its efficiency. Now leading dentists all over America are urging its adoption. It is now used daily on millions of teeth.

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Pepsodent is based on pepsin, the digestant of albumin. The film is albuminous matter. The object of Pepsodent is to dissolve it, then to day by day combat it.

For long this method seemed impossible. Pepsin must be activated, and the usual agent is an acid harmful to the teeth. But science has discovered a harmless activating method. And that discovery opens a new teeth-cleaning era.

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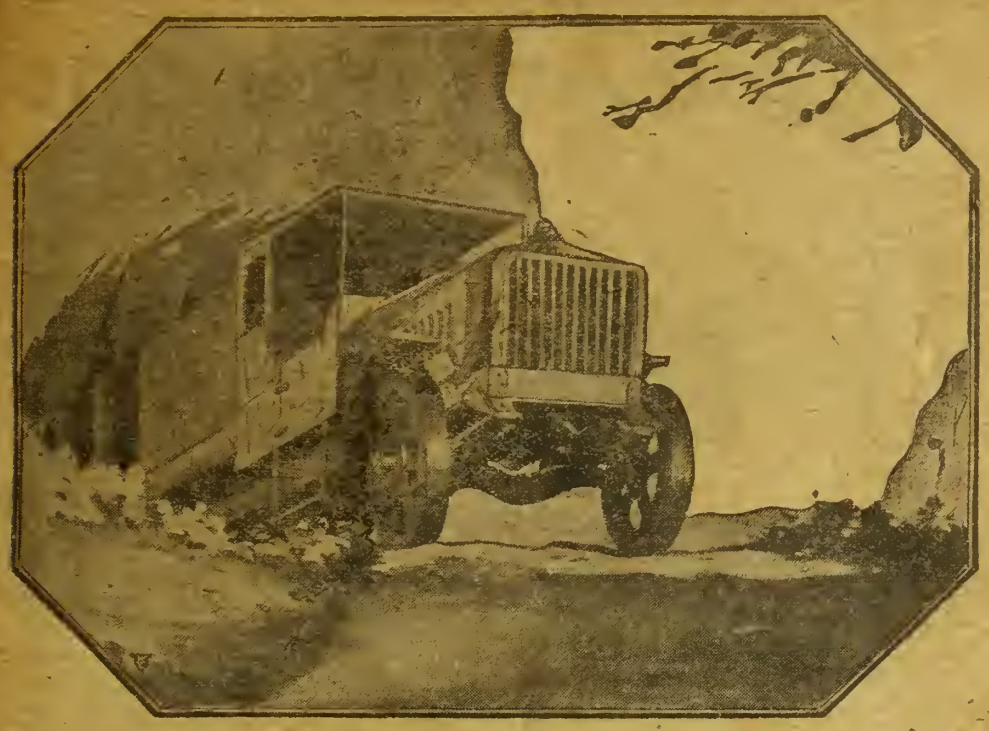
Yours very truly,
(Signed) J. B. BENEDICT,
Littleton, Colo.

Spray, O farmer, spray with care,
Spray the apple, peach and pear;
Spray for scab and spray for blight,
Spray, O spray, and DO IT RIGHT!
—C. A. C. News Notes. (Probably by Prof. Sandsten).



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A Stronger, Better Truck for Farm Haulage

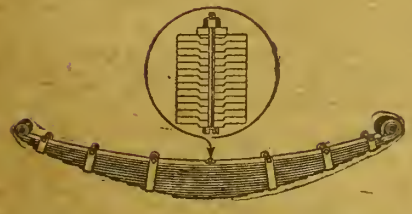
TIME was when motor trucks were sold largely on price. Users, still skeptical of the service value, economy and utility of motor haulage, were willing to experiment---but only upon as modest an investment as possible.

Today the cheap truck has had its fling. Its function has been fulfilled. It has convinced hundreds of thousands that the motor truck has unlimited possibilities for more economical transportation.

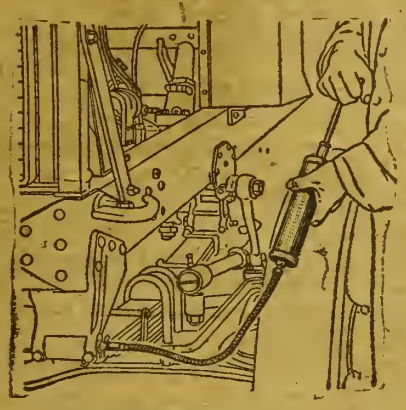
Now the demand is for a **better** truck --- a truck of greater endurance, longer life and a resultant lower upkeep cost.

Reliable service, low maintenance cost, long truck life --- all the elements of satisactory and economical truck operation --- depend largely upon the builder's knowledge of the strains put upon a truck under severe working conditions; depend upon his ability and desire to provide enough strength to guard against break-downs.

Strength without excessive weight is the most important factor and it can only be secured by quality, balance, and careful workmanship. A stronger truck is a better truck. **And such is the new Jumbo.**



Chrome vanadium steel springs, extra long, heavy stock, cupped at center to prevent slippage.



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JUMBO

The Complete Truck

Who'll Drive Out the Thistle?

SOME FARMER WITH AN IDEA CAN CASH IT.

Instructors in botany used to define a weed as "a plant out of place." Many a farm boy, compelled or bribed to hoe corn or hand-pull weeds out of the garden, has volunteered a more popular characterization. To him all weeds are unmitigated nuisances, created to make his April heart heavy and rebellious. Even Shakespeare experienced that feeling, for he says, writing of a weed, "would thou hadst ne'er been born." But, thanks to science, we are beginning to discover that some weeds are economically useful. Years ago the Russian thistle was a despised weed but is now a valued feed in some regions in Kansas. Sunflowers were commonly regarded and treated as decorative weeds until recently; now they are attracting attention as valuable forage plants for the silo in certain drouthy districts where the standard crop cannot be depended on. A comparatively large total acreage will be planted to sunflowers this year. Other weed species have outlived their bad reputations, and won places for themselves in the economy of agriculture, and probably many others will eventually be elevated to positions of respect and usefulness. These facts make it patent that nature remains a mine of undiscovered and unappreciated wealth.—Breeders Gazette.

The foregoing is all very interesting, but it lacks the element of accuracy. It illustrates the risk that an editor runs in commenting on things he sees in print, instead of limiting himself to actual observation. Take this statement, for instance: "Years ago the Russian thistle was a despised weed, but is now a valued feed in some regions in Kansas."

The truth is, Russian thistle is still the same old despised weed, in Kansas and elsewhere. It is a valued feed only insofar as thrifty farmers gather it up along the fence corners, or in weedy fields of grain which have failed because of the thistle, and use it as roughage. Its value as a forage is infinitesimal compared to the tremendous losses due to its presence in the grain fields of the Great Plains year after year—damage caused by the sapping of moisture and the lowering of the grade of grain. The fact that the Russian thistle is utilized by a few farmers does not mitigate the evil it causes.

That other statement about sunflowers also indicates that the writer has been misinformed. It is not the Kansas wild sunflower that is creating interest as a silage crop for the use of dairy farmers and beef producers, but a domesticated variety known as the Giant Russian; an improved plant that compared with the common sunflower is as bamboo to the bulrush.

The wild sunflower is a weed pest, as much so as it ever was, but it is not difficult to control. Crop rotation and good tillage methods will take care of it.

The Russian thistle is another story. Absolutely no effort is being made to get rid of that pest. The farmers who cut a few tons for roughage are making no impression on the supply, which is unlimited. One plant is capable of producing from 100,000 to 200,000 seeds. These seeds are scattered far and wide by the winds, over an area of plains country comprising thousands of square miles in half a dozen states. Spring finds the dried weeds piled against wire fences post high. The recent storms drifted the soil in upon these piles to a depth of four or five feet. One might count the stars in heaven, but to number the Russian thistle seeds that are broadcasted in one season over the semi-arid plains would be impossible.

And these seeds are vital. They are full of pep. They will sprout with the least apparent moisture; they germinate and thrive when all else fails. They sap the fertility and drink up the water that belongs to useful plants. They keep just about three jumps ahead of the cultivator in plowed fields and they will cut a stand of corn in half and make a patch of beans look sick. They mar the appearance of and cut production on whole farms. They invade gardens, choke up fence corners, line roadsides. They are an unmitigated evil.

Science has done nothing to help us solve the Russian thistle problem. We wish the Breeders Gazette were right; they usuallly are and we are not criticising, but merely using their statements as a text. In this instance it is the farmer and not the scientific investigator who is responsible for what little benefit we are getting out of a pernicious weed by using it as a filler.

Why do not more farmers use the thistle? Because it is not a desirable feed. It must be cut before the spines begin to harden if it is to be used at all, and at best it is a coarse, fibrous plant that cannot be classed as anything but an emergency feed.

We want to hear from farmers who have practical ideas on the subject of ridding the plains of Russian thistle. How can the pest be controlled? Our experiment stations have nothing to offer. Perhaps some farmer has thought of a plan that is worth considering. Who will be first with an idea worth while? Good ideas are paid for in cash by Western Farm Life.—A. T. S.

Honest Livestock Sales.

In handling sales of registered livestock a breeder is often just a little uneasy when he offers expensive breeding animals to the public. He has a feeling that they will not bring what they are worth. For that reason we often find the owner placing a bid on the animal. When the sale is over, which was announced previously as a dispersal sale, the animals sold in the ring on high bids are found to remain on the farm. This has a tendency to destroy the faith of other breeders in all sales. This feeling is growing. They often do not trust each other and as a result it is working a hardship on the livestock industry. We need to be fair in these matters, otherwise a reaction will come. If a breeder is afraid his animals will not bring a good price better not put them in a sale. Honest advertising and clean cut sales will establish the faith so necessary to success.—H. A. L.

Reports from the Bingham County, Idaho, farm bureau, indicate that seven concrete silos averaging 110 tons each will be constructed in that county this season. Ezra Felsted, formerly field animal husbandman of the state of Oregon, will farm in Bingham county this year, and is planning to construct a battery of three 150-ton silos this year.

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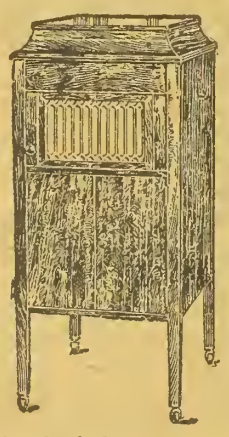

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It Plays ALL Standard Records.

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Equipment—Automatic stop, large record filing cabinet, all wood, scientifically constructed amplifying horn and tone modifier. The instrument is mounted on rollers.
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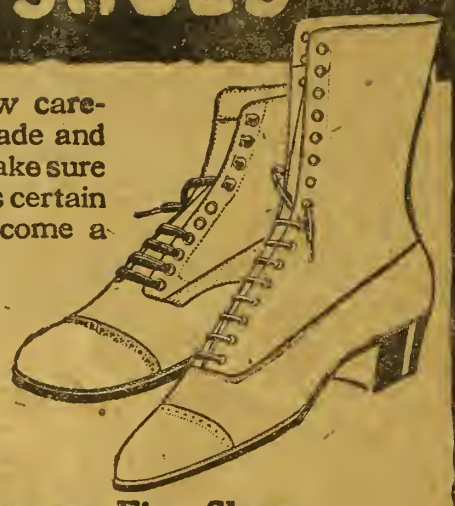

IF you only knew how carefully every shoe is made and what steps we take to make sure of unvarying quality, it is certain you would promptly become a wearer and booster for Mayer Honorbilt Shoes. Right now it is essential that your shoe dollars should buy the utmost in value. You can always depend on *Honorbilt* values.

Men's and Womens Fine Shoes

Honorbilt Fine Shoes for men and women can be had in all the very latest styles. Neat and graceful, correct in detail, perfect fitting and comfortable. And the wearing quality never fails. Honorbilt Shoes are built to last.

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Honorbilt Work Shoe leather is double tanned to resist the alkali in the soil, as well as barnyard juices. They are soft and easy on the feet, yet long wearing and will not get hard when wet. Honorbilt Work Shoes will give double the wear of ordinary shoes.

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You can't blame the children if they scuff out some shoes in a hurry. But that doesn't happen to shoes that bear the Mayer *Honorbilt* trade-mark. They are made of honest leathers and are sound and solid—School Shoes and Fine Shoes—built for comfort for growing feet. *They wear like iron.*

Buy Honorbilt Shoes for your whole family. Leading dealers sell them. Look for the trade-mark on the soles.

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Enjoy the WORLD'S GREATEST ARTISTS, bands, orchestras, vaudeville stars. Entertain your friends with the newest songs, fox trots, and one steps that are making old Broadway famous.

VICTROLA IV, with six 10-inch double faced (85c) records, $30.10. $7.00 down, $3.00 a month.

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With ten 10-in. double faced (85c) records and record brush:
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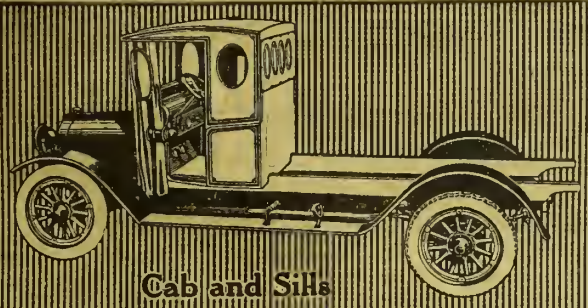

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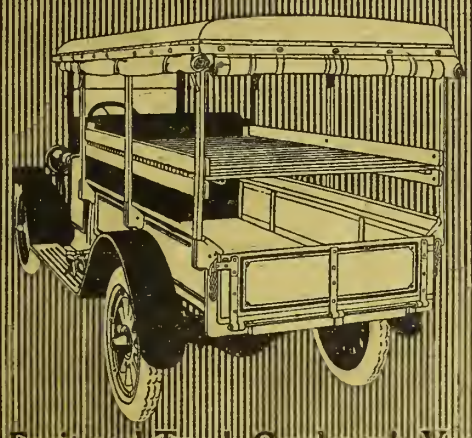

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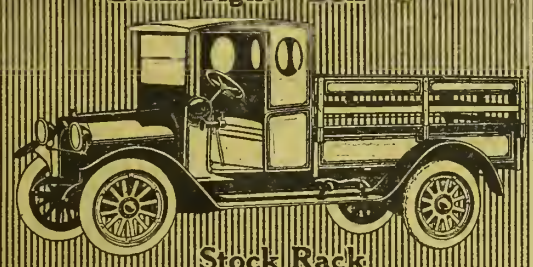

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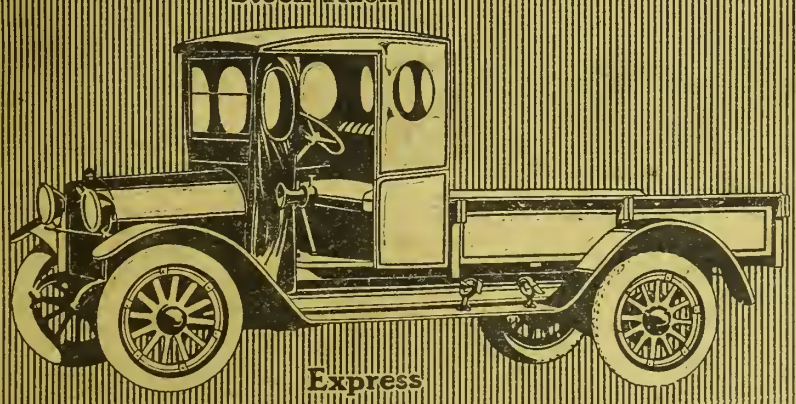
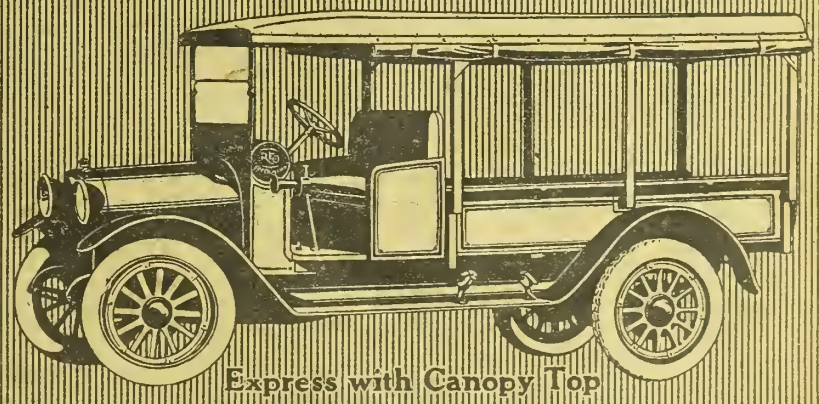


Express



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Time—Time!

Time is the essence of everything to the Country Business Man.

The element of time is of even greater importance to the agriculturist, the stock raiser, the dairy or truck farmer, than it is to the urban business man.

In seed-time, haying or harvest time, the loss of a day may mean the loss of a large part of the season—and much, if not all, the net profit on the year's work.

For weather and growing crops will not wait.

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When a broken farm implement necessitates taking the team off urgent work for several hours to get the repairs or replacements, it often means loss of many times their value—less acreage in crops—or grain lost through over-ripening.

That's when the pneumatic-tired Reo "Speed-Wagon" proves its worth and quickly pays for itself.

It leaves to the horses or the tractor the field work while it does all the road running.

This Reo "Speed-Wagon" markets at twenty miles an hour instead of four.

Eighty per cent of the time now wasted between farm and town can be made available for increased profits.

And—the Reo will do another day's work after the horses are in the barn.

Successful farmers no longer consider getting along without a motor truck—it makes successful farmers.

There is a Reo Dealer in your Vicinity.

Reo Motor Car Company, Lansing, Mich.

"SPEED-WAGON"

"THE GOLD STANDARD OF VALUES"

Western Farm Life

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Change of Address—In ordering a change of address, give both old and new address. It requires 15 days' time in order to make the desired change on our mailing list.

Our Guarantee—We guarantee the reliability of every display advertiser in this journal, and agree to make good to every paid subscriber any loss that may occur thru trusting a display advertiser who proves to be a deliberate swindler. Notice of the complaint must be sent us within a month of the time of the transaction, and you must have mentioned Western Farm Life when writing the advertiser.

Losing County Agents.

Colorado has lost the services of several county agents, principally because commercial lines offer better financial inducements. Colorado Agricultural College is losing faculty members on the same account. These losses are matters of public concern. The people of Colorado are directly affected. The resignations are notice that agricultural education and development are suffering for lack of proper financial provision. In a previous issue the question of salaries for members of the college faculty was discussed. Since that time it has been announced that the salary question is being given serious consideration by the state and the best possible under present circumstances will be done. We shall be at least as patient as the faculty members are showing themselves to be, and await results.

In the matter of county agent resignations, money does not seem to be the only question involved. There is also a matter of policy—the policy of fixing a maximum salary beyond which no county agent may aspire. Announcement of this policy was made at the state conference of county agents in January, since which time several of the older men in the service have resigned. Others are showing discouragement, which is a natural result of such wet-blanketing of effort and initiative.

Whether the policy is fixed at Fort Collins or at Washington matters not. In either case it is time for the Farm Bureau to take notice of the resignations and find out what is at the bottom. If it is poor executive ability at Fort Collins the matter can be easily corrected. If the trail leads to Washington, there is a National Federation of Farm Bureaus which is powerful enough to inquire into and correct attempts to bureaucratize the county agent service.

The farmer pays the taxes for the maintenance of this work and he should have the final voice in establishing fundamental policies. As long as his servants show a disposition to manage affairs for his best interest no interference is necessary, but when the administration violates all business principles and seeks to reduce the county agent to the dead level of a clerk in an establishment concerned chiefly in the unwinding of red tape, it is time for the farmers to protest.—A. T. S.

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Proske's Horse Law.

Theodore Proske is a councilman of the City of Denver. Things being rather quiet in the lower wards and no other moral reforms being needed since the city has taken on saintly ways, due to advanced legislation of various kinds, Theodore decided to seek the road to fame by further modernizing his beloved city. Hence he introduced an ordinance which provides that on and after January 1, 1925, it will be a crime to keep a horse in the city of Denver, to drive one in its streets, or to be caught in any way associating with this relic of a prehistoric age. This, said Theodore, is the motor age. Let us be up to date. Old Dobbin has served his usefulness and what few horses remain, let them stay in the country. Not wishing to be unfair, Theodore gives us plenty of time to get rid of the remaining horses; as he expresses it, "to make proper disposition of their holdings."

It will be news to Theodore to learn that the total value of all horses on farms in the United States is $1,993,000,000, just a trifle below the value of the milk cows. But why quote statistics?

We presume Theodore has thought of the ash hauler, the garbage man, the junk collector and the fruit peddler who serve a useful purpose with horse-drawn vehicles up and down the alleys of Denver? If he will arise before dawn and motor to the city market he will be astonished to see how many horse drawn vehicles are still in use by gardeners as well as hucksters. He will learn in the early morning hours that much of the milk in Denver is delivered by horse-drawn vehicles, because this is more economical than the use of trucks on runs with house-to-house stops. He will learn how the truck and the horse each do their share and that the cities need them both.

And if he will journey to the country he will learn from farmers who own trucks and tractors that they are still keeping horses for the particular jobs, or the particular weather conditions for which motor-driven implements are unfit. And then if Theodore will stop and think (and thinking is a commendable mental process that should precede every action), Theodore will come to the conclusion that mechanical inventions cannot entirely replace either the man or the horse, because they have something that cannot be delegated to a mere machine—brains. There are exceptions, of course, in men as in horses.

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Attacking the Land Banks.

The advertising manager of Western Farm Life recently received a letter from E. D. Chassell, secretary of the Mortgage Bankers' Association of America, in which he stated that a 10 per cent tax on newspaper advertising and a 15 per cent tax on other forms of advertising are provided for in a bill introduced by Congressman Thompson. He urges publishers to get busy and protect their interests against unjust taxation. That part of his letter appears unobjectionable.

But Mr. Chassell did not stop there. He continues by calling attention to the tax-free feature of farm loan bonds, declaring that this inducement to capital to invest in these federal securities deprives the government of revenue and that, to make up for it, the scheme to tax advertising has been devised. To Mr. Chassell, at least, the two things seem to be coincident. He may know whether they are or not.

Then he goes one step further; and here is where he makes a fatal mistake. He says: "Many editors have been too busy with European questions to give time and study to taxation problems. Many agricultural editors have been misled by the assertion that the tax exemption of farm loan bonds causes great benefits to agriculture. A careful study of the question will prove the contrary to be the result. The advertising manager ought to be able to interest the editor."

If there is any proof needed of the assertion that the tax-free feature of farm loan bonds helps agriculture it is in the frantic effort of the mortgage bankers to have the tax-free feature eliminated. The whole object is to again get control of farm loans; to run the federal land banks out of business and go back to the days when usury flourished. Capital has naturally sought the favorable channel of tax-free bonds, hence the farm land banks have had plenty of money to lend at 5½ per cent. The mortgage bankers are not the men who own the money; they are the fellows who draw the commissions from both borrower and lender; they have flourished on the high interest paid by the farmer.

Western Farm Life fought hard for the passage of the farm loan act. We were first in this field with full explanation of the law and with personal advice and suggestions in forming farm loan associations.

Several hundred associations are now flourishing in the states served by this magazine. Millions of dollars have been loaned to farmers at a low rate of interest and applications are constantly coming in. The system has been a greater success than most of us dared hope; at any rate, it has proved itself more quickly than its advocates predicted and it has confused and confounded its enemies.

It is an interesting commentary upon the type of mind behind the effort to destroy the usefulness of the farm loan law to consider the attempt to influence the policy of farm journals through such thinly veiled threats as that contained in the Chassell letter. In effect it says: "Help us kill the farm loan law, or we'll put through the bill providing for a tax on advertising." It is a poor friend of the farmer who will not accept that challenge.

✦ ✦ ✦

The Educational Problem.

DR. W. M. JARDINE, President Kansas State Agricultural College in The Agricultural Review.

The cost of education has arrived at that point where, in general, local taxation is unable to deal with the situation. Here then is a practical problem: How shall funds be secured adequate for the support of our schools? There are four ways in which they may be obtained: (1) increasing the rate of local taxation; (2) state support; (3) increasing the state school fund; and (4) federal support.

While the local community should never be relieved of a fair burden in the support of its own educational enterprise, the time has come when the support of local education is a load that the whole state must help to carry. Massachusetts has appropriated an equalizing fund of $4,000,000 which is to be distributed not upon the basis of local need or of comparative local poverty, but upon the teacher basis, allowing a grant from the state to increase the salaries of teachers. New York appropriates an equalizing fund of $6,000,000 and contemplates raising this at once to $10,000,000. Pennsylvania has an equalizing fund of $7,500,000 and New Jersey a fund of $1,000,000. California at the last session of the legislature increased its equalizing fund by $2,000,000, making the total amount which the state contributes to teachers' salaries $550 per teacher in addition to local taxation.

If a levy of two mills were made on the Kansas valuation for 1918, for illustration, it would produce approximately $6,500,000, or an equalizing fund for Kansas of $419 per teacher.

This would allow the local rate to remain approximately as it is and at the same time would enable every teacher in the state to be paid a living wage. It would take the burden from local taxation and place it upon the wealth of the state, where it properly belongs.

The government has already undertaken to subsidize education under the Smith-Lever and Smith-Hughes acts and in other ways has contributed to the benefit of education in the local states. The question of federal support is a very large one and is subject to much further discussion and experimentation. But it is becoming increasingly evident that the federal government does have an obligation especially in the support of elementary education and we ought to expect that this obligation will be increasingly met. What policy should be followed, what method should be devised for the distribution of federal funds, what mechanism on the part of the federal government is necessary for handling this work, are questions the discussion of which do not concern us here. But the highest statesmanship of the educational world should set itself to devise means and methods whereby the federal government may assume the obligation which it can no longer ignore; namely, that of assisting to support elementary education in the United States.

It is likely that the permanent relief of the present situation in education will come from a utilization of all of these four methods for increasing school finances, but the method which offers immediate and effective relief and which is within our reach if we but will it so, is that of state support in which a state equalizing fund is used to increase teachers' salaries.

More farmers' organizations have been wrecked by dissension within the ranks than by any other single influence. It has been customary to attribute the passing of such bodies to "politics" and let it go at that. In numerous instances, it is true, organizations founded for worthy purposes have lost prestige and been stripped of their usefulness by climbing into bed and snuggling down with partisan politics; but more often they have drifted on the rocks because of discord in camp. If harmony prevails in the township Farm Bureau organizations it gives without saying that the county Bureau will have smooth sailing. If the county organizations are dominated by live-and-let-live motives the State Federation will go forward. Finally, if the various state organizations practice team work the American Farm Bureau Federation will develop into the most potent factor for the betterment of agricultural conditions the world has ever known.—Iowa Farm Bureau Messenger.

Instead of a seedless apple, we need one that is as big in the bottom of the box as at the top.

"apr. 20"

If the label on your magazine reads "apr. 20" your subscription expires this month. You, no doubt, intend to renew. By doing so at once you not only extend us a big favor, but will make sure that you will not miss a single issue of Western Farm Life.

Send us $1 for a two-year renewal subscription, or $2 for a five-year renewal subscription.

We appreciate your past subscription and hope you appreciate our magazine enough to renew now.

After you have renewed, watch the address label on your paper to see that you have been given proper credit.

WESTERN FARM LIFE,
Denver, Colo.

The Branding Iron

A deep seedbed operates as a storage place for moisture to be utilized during a possible protracted dry spell. If soil has been plowed to a good depth and the seedbed thoroughly worked down and pulverized the farmer is practically assured of an average crop, whatever may be the deficiency in summer rainfall, while the farmer who merely skims the ground with his plow, or runs over the furrows once or twice with his harrow, will very likely see his crops slowly wither and perish as the dry season advances.—The Pacific Homestead.

* * *

A hundred members of the National House of Representatives are planning a trip to the Orient in June, to investigate immigration problems at first hand. Why don't they all go and start sooner? We might have had peace and a League of Nations if Congress had been off somewhere on a jaunt, instead of interfering with business down at Washington.

* * *

The women who recently went crazy over the Ouija board fad did not have far to go.

* * *

Sir Oliver Lodge says communication with the departed is our only proof of immortality. Maybe so. We'll let Sir Oliver interview the spooks for us. Every man to his trade.

* * *

Chicago surgeons have raised the price of operations for appendicitis to $250. Another luxury we'll have to cut out.

* * *

For a man who isn't a candidate Herbert Hoover shows running qualities second only to those of an experienced traveler such as W. J. B. Which reminds us of the story they tell of a negress who was asked about her candidate for president. "Let's see," she said, "I hain't been payin' much attention to politics, but don't Mr. Bryan most generally run fur president?"

* * *

Says the University Daily Kansan: "It is reported that at Manhattan they have a cow bell in the movie orchestra to make the students feel at home."

Whereat the Kansas Industrialist comes back with: "The same students don't feel satisfied unless they see a few calves in vaudeville."

Undoubtedly the Kansan will be back at 'em with a remark about the chickens. This farm stuff goes well in vaudeville.

* * *

Brophy and Hogan were discussing the High Cost of Living.

"There's no need of any man bein' hungry," argued Hogan. "I was radin' the other day that there is plenty of virgin soil left in this country."

"An' what is virgin soil?" asked Brophy.

"Virgin soil," replied Hogan, "is soil where the hand of man has never set foot."

Comment by Farmer Putnam

JOSEPHINE WRITES A LETTER AS TOM IS SUFFERING FROM OVERDOSE OF HOME CURED MEATS.

DEAR Editor: Tom is laid up; that is, he ain't sick a bed, but he ain't able to write, so I'm takin' his pen in hand to set down a fiew lines which I hope will fill the bill. Fust I want to know if you-all will be kind enough to put a notis in the paper like this:

"TAKE NOTIS—Don't send no more bacon, ham or sausidge to the Putnam ranch. We got all the crocks full of home cured meat and Tom's got the dishpeppsy from eatin' too much pork. La Vetey and Montrose papers please copy."

Sign my name to it and run it in your April 15 number and charge to Tom's acct. He's been over eatin' ag'in. When he likes somethin' I cain't do nuthin' with him; he's just like a kid; he eats till he purty near busts hisself. Fust we got some ham and bacon from the Pogger Valley ranch over to Montrose. It was from some of the hogs on Loesches place and cured by a feller that runs a little community curin' plant. He takes in meat from the farmers and cures it fur 'em and they come and git it ag'in. It's as fine home cured meat as I ever tasted and I cain't blame Tom fur over eatin'.

He's been feedin' hisself plum full every day. Bacon and eggs fur breakfast, baked ham fur dinner and ham crokays fur supper. I got a way of makin' them crokays that Tom likes and I guess the wimmin folks would like to know about it. (Miss Douglass, please copy.) Grind up the roast ham that's left over from dinner in a meat grinder. Cook up some rice and then mix the ham and the rice by beatin' a egg up with it and a little flour, just enough to make it stick. Then stuff green peppers with this mixtur' and bake till well browned. Tom just loves it made that way.

We didn't git to kill a pig this winter and we missed the home cured stuff and it was welcome when we got the package from Montrose. The boys is both off to school and Tom is so busy with his writin'—or pretends to be, that he cain't find time fur hog killin'. He kin preach about them things, but when it comes to doin'—well, he leaves most of that to me. Well we was doin' fine on this meat from Montrose when up bobs another package; this time from La Vetey and when we opened it we found some Sunnybrook sausidge. I told Tom it was mighty nice of his friends to remember us, but why couldn't they string out their donations, or take turn about? He sez: "Never mind about that Josie; don't you send nuthin' back. We kin fix this by startin' daylight savin'."

"Daylight savin'," sez I, "I thought you was ag'in that law because it made you git up early?"

"I was ag'in it, but now I see where I kin use it fur my own good and that's a hoss of another color. Hereafter we go on a daylight savin' schedule; breakfast 5 a. m.; lunch 11 a. m.; afternoon tea, 4 p. m.; dinner, 7 p. m., to bed 9 p. m. That's European style. You see by eatin' four meals a day we kin use all this home cured stuff. We cain't afford to waste nuthin' when so many is starvin' in Europe."

"I know how you worry about them starvin' Europans," sez I. Anyhow he tried this scheme and in three days he was ready fur bed, puffed up like a tode. I felt kind-a sorry fur him and I sez: "Tom, do you want me to call a doctor?"

"Not fur me," he sez. "I may be miserable, Josie, but I sure enjoyed gettin' that way."

I made some sage tea fur him and made him take a foot bath and put a mustard plaster on his back, and give him quinine and fur a day or two I thought every minit I'd have to send fur the boys, but now he's up and around and I've got him out in the barn gittin' the seed ready fur spring sowin'. We're goin' to put in some rye fur paster.

I want to send this letter off without him seein' it. He's allus a tellin' me my mistakes when I try to write a letter and I got a fiew things to say that he kin just as well read in print and then it'll be too late fur him to correct me. He's allus a makin' believe that he's abused at home, but folks the shoe is on the other foot; I have to put up with a lot from that man fur the sake of the boys. Of course I wouldn't think of leavin' him; I ain't no Mary Pickford, but if some of them young things had to work as hard as us older wimmin and put up with what we has to put up in the way of long hours, and lookin' after the comfort of our men folks, they might have cause fur divorce on the grounds of cruelty.

The way I looks at that is, that married life is a cross that we was burdened with when Mother Eve took the apple from the snake in the Garden of Eden. It's woman's duty to take this cross and bear it. I took Tom fur better and fur worse and I reckon all in all he's just about averidge.

In his last letter he was a-talkin' about wimmin's styles. I reckon it's true that some wimmin ain't over pertickular about how much or how little they puts on, but the men don't have to look so clost if they don't like them styles. I don't see nuthin' that I don't want to see, but it seems the men that's allus kickin' about low necks and short skirts takes a purty clost look before they kick. We got to give 'em credit fur knowin' what they're talking about, but I doubt whether they're really as sore as they lets on. Men is all more or less 4 flushers.

Tow take Tom, he delivers sermons on styles to me and in the paper, but I don't know why he goes to Denver so often and whenever he goes why he has to stand on Sixteenth street so much. He's complainin' about his eye sight and wants to git him some of them stylish goggles like the cashier of our bank wears, but I tell him what's the use of wearin' glasses when all he sees with 'em is evil? I'd a heap ruther be half blind than miserable, as them men are when they has to look at wimmin's styles.

Of course, I'll admit that them styles is demoralizin'—specially so the prices they asks fur so little material, but the world is short on everything. I been tryin' to git a spring suit, blue navy, you know that trickotine, but they wanted $65 fur the cheapest, and it didn't look like nuthin' and besides they didn't have nuthin' larger than size 40 bust.

I been a havin' a time with my settin' hens. A skunk's been botherin' around and I ast Tom to set a trap fur it, but he sez:

"Not me; I ain't no skunk trapper. What would I do if I caught one?"

"Skin it," sez I, "them skunk furs comes high now."

"Josie," he sez, "I'd sooner go out huntin' mounting lion; I'm not botherin' skunks. I caught one onct in a trap; that is technically I caught it, and when I got through with the proceedin' the skunk was dead, but it had the best of the argymint, and it's reputation lived many weeks after it died."

"Just like some men sez I; the evil that men do lives after them; the good is often buried with their bones."

Now Mr. Editor I hope them fiew lines will fill the space and I hope you'll excuse Tom's bein' unable to write on a full stummick. The sausidges is gone, but we still got a big supply of bacon and ham so I don't know how soon Tom'll be able to resume.

JOSEPHINE PUTNAM.

Tin Hen's Nest.

Sounds absurd doesn't it, to have a tin nest for a hen to lay in? You might think somebody had borrowed a lot of war helmets and put them to a very patriotic use or else been putting too much trench experience into practice.

But these tin nests are neither; they are merely a very sane, safe and original way to use an ordinary commodity, a twenty-pound tin lard pail. These lard pails were bolted to a board about 3½ feet above the floor in an ordinary chicken house, in the exact spots in which grocery boxes had been fastened before. They were fastened so that they stood upright, the way a proper and dignified lard pail should stand, and they contained a little hay in the bottom. The hens had absolutely no objection to performing their food producing functions therein, for the second day of their use, they had anywhere from three to seven eggs in each one. And just stop to think of the joys of possessing this type of nest where mites could not corrupt and neither rats nor lice could break through and steal. We predict a strong rim on twenty-pound lard pails.

The lady who invented this idea lives in Lincoln county and during the month of February—from 64 purebred white Leghorns and 16 Rhode Islands she gathered eleven hundred and thirty eggs. She uses the sodium fluoride treatment for lice when the birds do happen to become infected.—E. D.

Heat and Hot Water
—*the joy of every farm woman*

The IDEAL-Arcola Radiator-Boiler heats the whole house by circulation of Hot Water to AMERICAN Radiators in the adjoining rooms. Water for kitchen and laundry is also furnished by it—all with one fire!

WHY NOT have a warm home free from chills and drafts and why not enjoy all the running hot water you want—just like they have in city residences?

IDEAL-Arcola Radiator-Boiler Heating Outfits from $131 up

Any Dealer will furnish in sizes to suit rooms and climatic conditions.

For Soft Coal	No. 1-B Size IDEAL-Arcola with	100 sq. ft. of Radiation	$131
	" 2-B " " " "	150 " "	163
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	" 4-B " " " "	250 " "	234
	" 5-B " " " "	300 " "	270
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	" 2 A " " " "	200 " "	191
	" 3-A " " " "	265 " "	234
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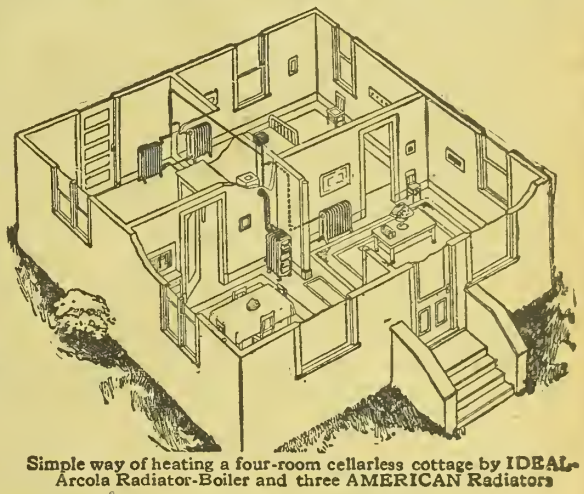
Prices include Expansion Tank and Drain Valve. Prices do not include labor, pipe and fittings. Radiation is of regular 38-in. height 3-column AMERICAN Peerless, in sizes as needed to suit your rooms. EASY PAYMENTS, if desired. Outfits shipped complete f. o. b. our nearest warehouse—at Boston, Providence, Worcester, Springfield (Mass.), Albany, New York, Philadelphia, Harrisburg, Pittsburgh, Baltimore, Washington, Richmond, Buffalo, Cincinnati, Indianapolis, Birmingham, Detroit, Chicago, Milwaukee, Minneapolis, St. Paul, Des Moines, or St. Louis.

Shipped complete for immediate installation

The beauty of the IDEAL-Arcola method is that no cellar is needed. Everything is on one floor. The Arcola is placed in any room that has a chimney connection. No running to cellar. Same water is used over and over again for years. No fire risk.

Buy now at present attractive prices for outfits complete!

IDEAL-Arcola outfits consist of the boiler and radiators to heat various size houses. Write us your requirements! Unlike stoves, there are no coal-gas leaks into the living-rooms. The IDEAL-Arcola delivers the soft, radiant warmth of hot water—not the dry burnt-out atmosphere of stove heating. There is no fire risk to building—no danger to children—fire lasts for hours! The Arcola burns hard or soft coal.



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Catalog showing open views of houses, with the IDEAL-Arcola Boiler in position will be mailed (free). Write today

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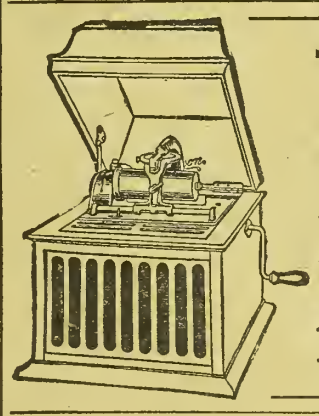

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Mules Jump Fences.

We are bothered with a pair of mules that jump any fence they come to. They jump a three-wire fence to get into my field and have jumped a five-wire fence to get into my neighbor's feed lot. I would like to know if there is a law to make the owner take care of these animals.—Subscriber, Colorado.

Yes, there is a way in which you can force the owner of those mules to take care of them. If you have a lawful fence and these mules jump the fence and damage your land in any way the owner of the animals is liable under the law forbidding trespass. Section 2589 of the Fence Law reads as follows:

"Owner of Lawful Fence May Recover for Trespass. Any person making and maintaining in good repair any fence such as described in Section 1 of this Act, may recover for trespass from the owner or owners of any animal or animals which break through any such fence in full for all damages sustained on account of such trespass, together with costs of such recovery, whether same be by suit or by arbitration, and the animal or animals so trespassing may be taken up by the party damaged and held as security for the payment of such damages and costs; and no person or persons shall be allowed to recover damages for any injury to any crops or grass products or other vegetable products unless the same at the time of such trespass or injury was protected by a legal and sufficient fence as described in Section 1 of this Act."

You will note that the law speaks of an animal breaking through fences but our understanding is that the jumping of such fences would come under the same prohibition.

Potatoes Have "Stem Rot."

Will treating seed potatoes with formaldehyde prevent, to any extent, their having stem rot? If not, is there any treatment whereby this disease can be reduced to the minimum, if not entirely eliminated? I have some seed that has a very small percent of stem rot. In fact, I think practically all of the Western Slope seed will show more or less of this disease. Kindly give me your advice on the treatment of the above.—D. S. W., Montrose County, Colo.

We presume that you have in mind some form of the disease called fusarium which goes under various names. The treatment recommended for seed potatoes that will prevent not only fusarium but also scab and rhizoctonia is the corrosive sublimate solution. This is much more effective than the formaldehyde treatment. The solution is made up in barrels usually containing 30 gallons of water and using 4 ounces of corrosive sublimate. Full directions for mixing the poison and treating the potatoes are found on page 31 of a bulletin on "Potato Culture in Colorado." This bulletin also discusses potato diseases in detail and you will be able thus to identify the trouble which you call stem rot.

Cannot Close Road.

Can anyone take up land and fence up a road that runs across it? This road was traveled for 18 years before the land was taken and traveled for 22 years before final proof was made on land. The road does not follow any lines and it would be impractical to do so.—R. B., Mesa County, Colo.

A road that has been traveled for so long a period as 20 years is considered a legal public road and cannot be closed by an individual. Matters of this kind should be taken up with your county commissioners as they have control over local road problems.

Trouble Over Range Cattle.

Answer to G. E. P., Otero county, Colo.: If threats have been made against you, you should file complaint with the deputy district attorney against the parties who are threatening harm. You will find the deputy at your county seat town. He or the sheriff will direct you concerning the way to proceed in the matter. It is against the law to carry concealed weapons and no one has any right to grant a permit to go armed. A lawful fence consists of three wires with posts 33 feet apart and a substantial metal or wooden stay half way between posts. Parties on adjoining claims are required to each bear one-half the expense of erecting a line fence. If the other party refuses to put up a line fence it can be erected by the first party and half the cost assessed against the other party. If livestock breaks through a lawful fence the owner of the land damaged can recover by taking proper legal action. In a matter of this kind you should seek the advice of officers of the law, who will inform you as to your rights and duties.

Sow Alfalfa Early.

Will alfalfa kill if sowed early with spring wheat? Should I wait until danger of freezing is over?—C. H. J., Jefferson County, Colo.

You are perfectly safe in sowing early with a nurse crop of spring wheat. Prof. P. K. Blinn of the Colorado State Experiment Station, who is an alfalfa expert says: "Seed early, first of April, if moisture is reasonably sure. Frost will not kill little alfalfa seedlings if there is moisture in the soil."

As To Mineral Reservation.

In September, 1917, I offered final proof and received a patent to my 320 acre homestead. In December, 1919, I filed application for an additional entry, under the provisions of the stock raising homestead entry, which was necessarily accompanied with a request for designation of both the original and the additional as stock raising land. Since this last filing I have been informed that the government reserves all coal or mineral right to stock raising lands. Now the point I wish to ask is: Would I forfeit my coal and mineral rights to my original patented entry? If so, I prefer to do without the additional; and in this case, what steps can I take to withdraw my application.—W. E. G., Crowley County, Colo.

A patented agricultural entry under the enlarged homestead act, unless on lands withdrawn for oil, contains no reservation of mineral deposits in the patent. If your subscriber has a patented entry in lands not affected by an oil withdrawal his patent contains no reservation and should oil thereafter be discovered or any other kind of mineral, the patent would carry the title to all such deposits.—Mary Wolfe Dargin, Register, U. S. Land Office, Denver.

Question of a Commission.

I bought some stock and equipment to the value of $3,000 last year from the owner of the place I rented. I paid $2,000 cash last December; he decided to sell the place and wrote me saying if I could make a sale he would let me off the $1,000 I owed. I told a neighbor of this proposition and he said "Another neighbor wants to buy a place; I think it would just suit him, I will bring him in the morning.' Then I told him I would give him a little out of it and he replied: "Oh, that's all right." Mr. A. took an option on the place, then changed his mind about buying and got Mr. B. to buy it. The owner let me off my $1,000 debt and I fully intended to give the neighbor some reward, but he wrote and demanded $200 as his commission (there was never any talk of commission between us), and he threatens to take the matter up in court unless I give it to him. Has he any legal right to collect $200 for his services?—Subscriber, Colorado.

In my opinion you are not liable for the commission, for the reason that the gentleman did not get for you a purchaser, ready, willing and able to buy at the terms, the price and conditions offered. Some one other than his prospective purchaser bought. There is a possibility that you might be liable to the person who did bring the purchaser. —Hamlet J. Barry, 724 Equitable building, Denver, Colo.

Default on a Mortgage.

If A. gives a mortgage to B. on farm secured by their notes and defaults on payments to B. B. sells farm at trustee's sale. How long can A. hold property in his possession after sale and what rights has he, if any? If sale does not bring value of notes, can B. collect balance?—J. B., Jefferson County, Colo.

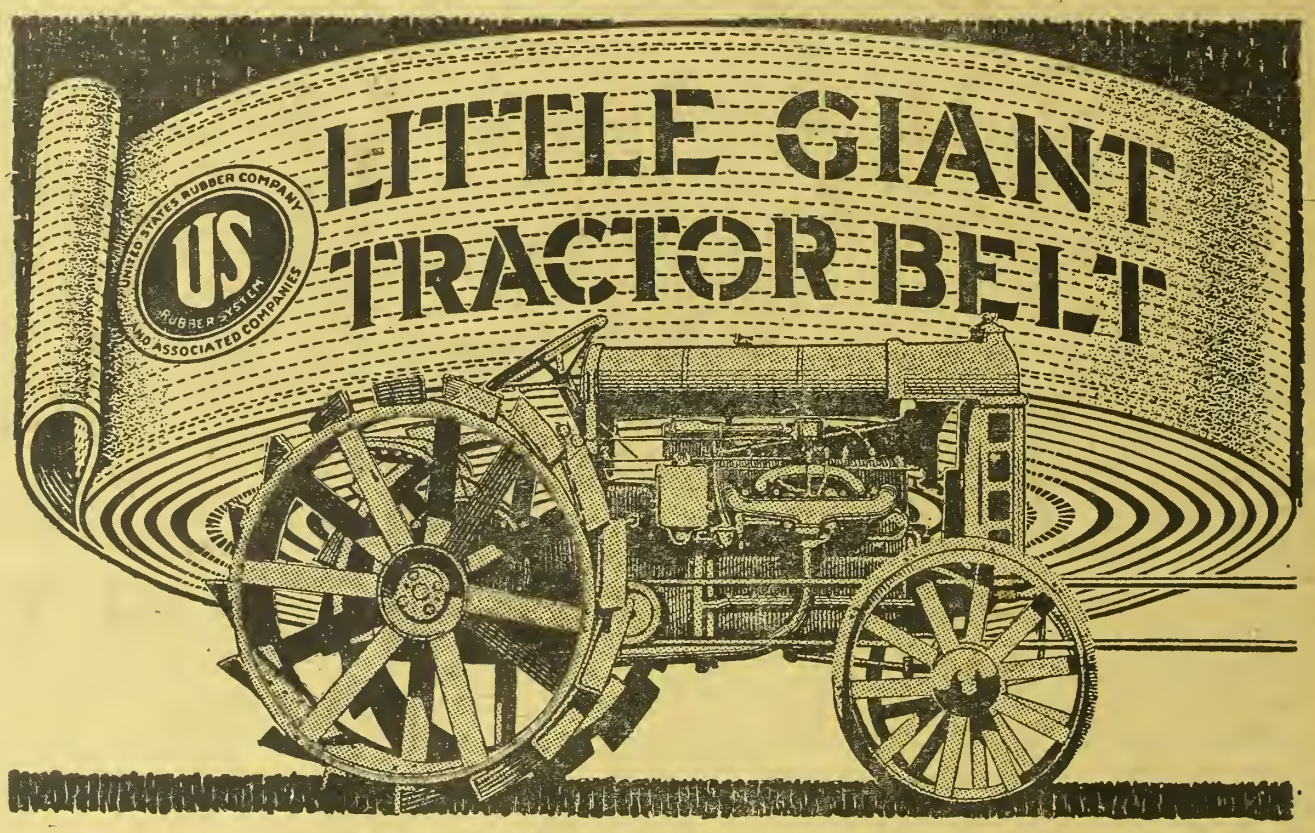
A. can hold property for the period of redemption, nine months. If the sale does not bring the value of the notes, B. may have a deficiency judgment against A., which he may collect from any property that A. has that he can get by execution.—Hamlet J. Barry, 724 Equitable building, Denver, Colo.

Division Fence Question.

1. Party lives on five acre tract and claims to own all fences around the place. Adjoining neighbor on west side claims to own half of that division fence but the former owner put up the entire fence. Can present owner collect from party for one-half of the fence.

2. Sand blows in on questioner's land because said division fence is of wire and questioner wants to know whether he can build a tight board fence along division line. If he builds such fence sand will pile up on neighbor's side and he wants to know if neighbor can hold him for damages in case crops are ruined by sand because of tight division fence. —Subscriber, Colorado.

In the absence of an agreement to do so the builder of the line fence cannot



Specially Designed for the Fordson Tractor

AGRICULTURAL engineers and designers of motor driven farm machinery have proved that better results can be secured from tractor operation by using equipment specially designed for the make of tractor employed.

For the Fordson tractor, there has been specially designed the Little Giant tractor belt — and thousands of farmers have found that it is the most satisfactory belt to use with the Fordson.

If yours is an average farm, over 40% of your tractor work should be belt work. Your tractor can be used every month in the year on some kind of belt driven farm machinery, thus giving you a greatly increased return from your investment in the tractor as well as getting the work done quicker, better and more profitably.

The Little Giant tractor belt is endless and is built of four-ply of extra weight, highest grade canvas, specially treated to increase its toughness and wearability. Another distinct advantage over other belts is possessed by the Little Giant because of its extra stitching especially on the edges which practically eliminates the effects of edge wear. Because of its special design the Little Giant belt will run straight and true, always.

Its slip-proof grip makes possible the delivery of full power of the Fordson to the belt machine and the full benefit of satisfactory performance of thresher, sheller, grinder, ensilage cutter, hay-baler and other power driven machinery.

Your Fordson dealer has a stock of the three lengths of Little Giant belts—50 ft., 75 ft. and 100 ft. If he hasn't, write us direct.

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collect from the other party. I doubt your right to change the fence on the division line without the consent of the neighbor. You would have the right, it seems to me, to erect a tight board fence just on your own land inside the division line fence.—Hamlet J. Barry, 724 Equitable building, Denver, Colo.

Can Exclude Other Stock.

Can a man who is not paying any of the lease drive his stock in on my section and pasture his stock, defying me to drive them out? This section of land is enclosed by fences which were put around four adjoining sections. There are gates up at the section lines which are kept closed.—L. M. L., Weld County, Colo.

I am of the opinion that you can exclude anyone from the section which you have under lease, as having it under lease it is your property, and you can keep off intruders.—Hamlet J. Barry, 724 Equitable building, Denver, Colo.

Soldiers' Time on Homestead.

How long does a soldier who has served over a year in the last war have to live on a homestead?—T. R., Wyoming.

A soldier taking up a homestead gets time off equivalent to the length of his service in the army up to a maximum of two years. That is, if he served two years in the army he will be obliged to live on his homestead only one year. All other requirements for cultivation and erection of habitable dwelling must be complied with.

Preserving Cut Potato Seed.

How can I preserve potato cuttings till planting time? Should I keep them in a dry or damp place? Should they be treated for disease?—W. C., Utah.

A good way to keep potatoes is to spread them out in a cool, dry place and sprinkle wood ashes over them. Another way is to cover them with air-slaked lime. As to treatment for disease, this is best done before cutting, but it can be done with cut seed. See bulletin which is being mailed for full directions on seed treatment, etc.

Ringing a Bred Sow.

Ans. to R. H. B., Montezuma County, Colo.: There should be no trouble from ringing a sow that is already bred, if you are careful in handling her so as not to injure her in any way.—H. A. L.

For Dry Land Pasture.

Ans. to W. J., Otero County, Colo.: Johnson grass is considered a pest in most localities and it spreads very rapidly and is very hard to get rid of. I am not sure that this would be true on the dry farm, but as there is a question about it I would advise that you try something else for a pasture crop. For a combination crop, probably, Sudan grass would be the best for you. This produces fairly good pasture and is a very good hay crop on the dry land. It stands the drouth very well. Mr. T. S. Parsons of Wyoming recommends a mixture of 5 pounds of brome grass and 5 pounds of sweet clover sown early, in the spring as a pasture crop. Sweet clover and brome grass will do very well for several years. In planting the mixture referred to of sweet clover and brome grass it is necessary to have your seed bed well prepared.—H. A. L.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Don't Use the Milk.

Please tell me what is the trouble with my cow. She is an A. R. O. Holstein; freshened last May, and about September 1 the milk became sort of slimy. I dried her up, but yet her udder secreted a pus which is difficult to milk out. The cow seems to be in good health otherwise. Is due to freshen in about 60 days. Would it be safe to let calf suck?—R. S., Yuma County, Colo.

There is apparently chronic inflammation of the udder, probably caused by infection. Internal treatment through the natural opening in the teat seems to be indicated. This is a case where you had better call your veterinarian. When she freshens, the inflammation is quite liable to become acute and cause serious trouble. Every effort should be made to overcome this condition before she becomes fresh. Milk containing pus is positively detrimental and should neither be used in the family or given to animals.—G. H. G.

Treatment of Running Sores.

Kindly inform me through your veterinary department how to treat a running sore on the ankle of my horse. It is a mare 10 years old, fat and lively; does not favor the leg at all. The leg swells from foot to gambrel joint. Just above the hoof of the right hind leg are two running sores, very like boils; about as large as a kernel of corn. These sores are raised slightly above the even surface of the skin; have been there for about five months. The swelling in the leg is more than it was three months ago. The mare has been running in corn field pasture since last fall. I do not think it was caused by a bruise or any such way. The mare weighs 1,090 pounds and is very active. These boils or sores are about two inches apart and about two inches above the hoof. I have never done anything for it.—E. M. P., Weld County, Colo.

The sores are probably caused by punctured wounds and may involve the periosteum, with necrosis of bone. This might easily have happened from penetration of bird shot. Ulcerative lymphangitis, skin glanders, or other infectious skin disease would not remain localized. A clean probe should be used to determine the nature of the wound. If necrosis of bone is present there will be an extremely offensive odor. It may be advisable to freshen the wound with a curette or dull knife. Diseases of bone must be removed in this way. Free drainage must be secured by use of the knife. Possibly there may be foreign bodies in the wounds that prevent healing. It is apparent that healing will not take place without interference. An antiseptic solution, like bichloride of mercury, 1-1000, should be injected with a syringe. I may be entirely mistaken in the nature of the disease, but this is the best that I can do with the information disclosed.—G. H. G.

Ans. to A. B. M., Rosita, Colo.

A. B. M., Rosita, Colo.: You did not sign your name, so we cannot write you the advice you seek. Your description of symptoms of the pigs is too meager to base a diagnosis on. Probably the pigs have thumps; if so, it is too late to save them.

Protect the Mail Boxes.

Most rural delivery mail boxes are made of galvanized iron. Exposed to severe weather conditions as they are, the galvanizing very soon wears off, the iron is attacked by rust, and the box gradually goes to pieces. Mail boxes are so expensive now that it is worth while to protect them by an occasional coat of paint. Ordinary house paint answers the purpose very well, but for boxes finished in a Japan, stove enamel makes a very good re-finish. It imparts a brilliant, glossy black, and stands exposure splendidly.

An Alibi.

Teacher—What is an alibi?

Bright Boy—Being somewhere where you ain't.—Life.

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HYATT ROLLER BEARING BINDER

FOR HORSE OR TRACTOR

8 and 10 foot

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Oil once a year

Capacity-40 Acres in 10 hours

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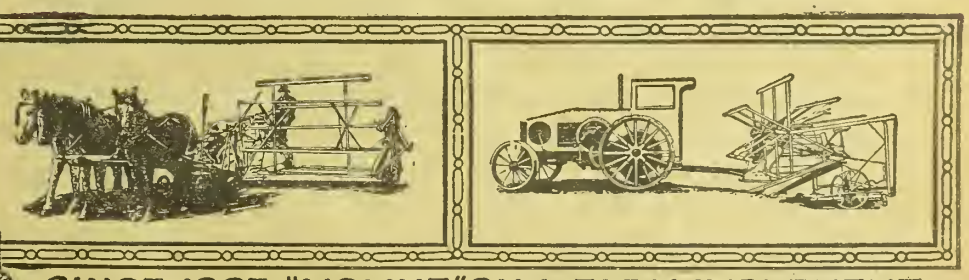


SINCE 1865, "MOLINE" ON A FARM IMPLEMENT HAS BEEN A MARK OF QUALITY

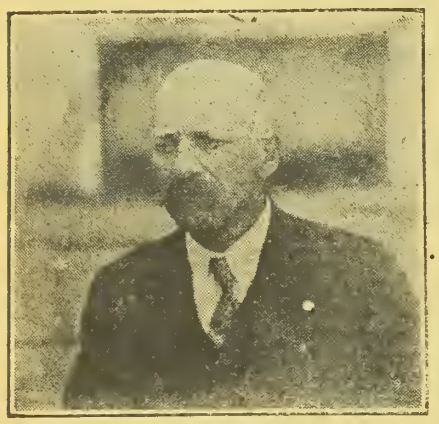
Colorado State Farm Bureau News

Matter appearing in this department relates to the activities of the State and National Farm Bureaus, including official communications from the Colorado State organization and general reports, calculated to keep farmers informed regarding progress of this great educational movement.

A Farm Bureau Song.

There have been a lot of songs of the dear old farm, but the Jackson County (Kan.) farm bureau suggests this one as a song for the dearer new farm. It follows the tune of "Old Black Joe:"

Gone are the days when my farm returned no pay.
Gone are the folks that used to call me Jay.
Gone are my debts for the better crops I grow.
I hear my neighbors' voices calling "Farm Bureau."
I'm coming, I'm coming, for my bank is full of dough.
I hear my neighbors telephoning "Farm Bureau."
Why do I reap where once no grain would grow?
Why do I ride where once no foot did go?
Tooting my horn with pleasure here below.
I hear my neighbors' voices calling "Farm Bureau."



E. J. Leonard, Secretary, State Farm Bureau.

Who's Who in the Farm Bureaus.

The Colorado State Farm Bureau, following the policy of the National Federation and of a majority of other state organizations, is officered by actual farmers. This is due to the manner in which the Farm Bureau idea was born. Its roots lie in the community project. Each project is worked out by a committee of farmers; each committee works in harmony with a general development plan for the county as a whole and its leaders are farmers, as are the community workers, because each deals with local problems of farm improvement. From this community activity we have the first outgrowth, the county farm bureau; next the state; then the national. All along the line we find farmers in charge. To bring out this point, Western Farm Life expects to publish in this department from time to time, short sketches of the officers of the Colorado State Farm Bureau and of some of the county bureaus. In this issue we shall start with Secretary E. J. Leonard of Fort Morgan. Let us trace his pedigree briefly:

Born near Beecher, Ill., January 20, 1868; father, Vermont Yankee tracing back to imported stock in 1630; mother directly from the Emerald Isle; therefore a mixture of Yankee and Irish, from which combination we have some of our finest Americans. Raised in Dallas County, Iowa, on a large cornbelt stock farm; youth spent in farm work—and that means WORK. Graduated from Iowa Teachers' College in 1895; taught school several years; served as high school principal. In 1901 bought an interest in 400 acre stock farm and operated this as a feeder of cattle and hogs. Ill health in family caused removal to Colorado in 1908, settling at Fort Morgan, where the subject of this sketch bought an irrigated farm and started dairying. Incidentally organized the agricultural department of the Fort Morgan high school and taught four years, but has continued operating and living on the farm during the last twelve years. Has served as secretary of Morgan County Farm Bureau for ten years; also is secretary of a successful co-operative creamerey and now secretary of the State Farm Bureau. These secretaryships have not driven him from the farm, but have compelled him, in the last year, to lease out the place so that while he still lives there, he is not actually operating it at present.

Mr. Leonard has long been a writer on agriculture and during the existence of the Colorado Farmer, which was later absorbed by Western Farm Life, he was associate editor of that publication. He does not believe in the farmers striking, but is much inclined to advocate (for E. J. Leonard) a five-day week, a six-hour day and lots of half holidays! But he does not expect that to happen "here below" and will keep right on working for the betterment of agriculture. Does he BELIEVE in the Farm Bureau idea? He does not; he KNOWS it is good.

$462 For Raymond Law.

The boys are learning how all right, so are the men because the boys are showing them. $462 is a neat little sum for a boy. Most men would not object to being so successful. The following from the Boys' and Girls Club News published at the Colorado Agricultural College in Fort Collins will be of interest to farmers all over Colorado:

Club members will be interested in learning what a 17-year-old Morgan County boy has done in farm work. The boy is Raymond Law. Here is his story:

I started tilling the soil for spending money when but 9 years of age, but not until 1917 did I join the Boys' and Girls' Club work.

The summer of 1917, being a town boy, I secured a town lot and raised cucumbers for the Heinz Pickle Company under the auspices of the Boys 'and Girls' club leader. I got a good stand and they did fine, but later I was hailed out.

The next spring, my folks decided to move to the farm, as we owned a small piece of about 43 acres. As we decided to build a new house, we had a great deal of work to do besides farming, but even at that, my father was willing to allow me three acres of land near the house.

Of the three acres, I sowed one to onions and the other two to potatoes. In spite of a hail storm, I came out at the end of the season with a little more than $400.00.

I had purchased a sow which has proved to be a money maker, and from the start of which I now own 41 hogs and have sold ten.

This last year was my best year. My father rented me the whole place of 43 acres, feeling that his interests called him elsewhere.

I succeeded in putting up about 40 tons of alfalfa, besides marketing some $600 worth of potatoes.

The death of a fine working mare which I had purchased, put a gloom on my farm work, but the large increase in my hogs has put me ahead again.

For my club work this year I raised 1½ acres of potatoes. Cost of crop:

Plowing and harrowing	$ 26.85
Planting	6.60
Cultivating and hoeing	25.05
Rent of land	30.00
Harvesting and grading	34.50
Cost of seed (2,400 lbs.)	36.00
Cost of sacks	5.00
Other expenses	9.00
Total cost of crop	$173.00

Size of plat, 1½ acres.
Total yield, 393 bushels.

Marketable potatoes sold (22,080 lbs.)	$605.00
Sced potatoes (1,500 lbs.)	30.00
Total value of crop	$635.00
Cost of crop	173.00
Profit	$462.00

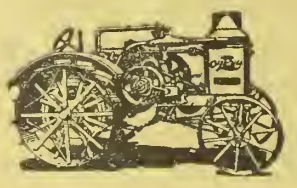
Farmers Considered As Producers and Consumers.

ALFRED M. WILSON.

The farmer is a producer; and in the eyes of people who live on wages and salaries, he is only a producer. Proceeding on that assumption, it is easy for those, living far from the plains and the valleys and the mountain ranges and working in the stores and shops, in the mills and mines, to imagine that the farmers not only control the production, but also fix price of food and raiment, of butter and eggs and meat, of shoes and dresses and even silk shirts—easy for those living in the large cities and in the great industrial centers to brand the farmers of the country as profiteers and to demand that they be haled into court and be made to answer to the high crime of forcing upon society the High Cost of Living.

It is only since April, 1917, that the

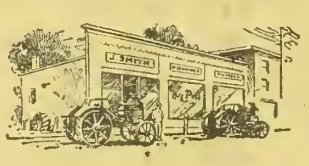
SERVICE



Eleven successful years of service in the field, meeting every farm condition, has tested the design of Rumely OilPull Tractors. "Old Number One" and many other early models, after eleven years of dependable and constant service, are still going strong. Over 15,000 later models built on the same general design, are giving the same dependable year-after-year service.

Advance-Rumely service is backed by over three-quarters of a century of success in the manufacture of farm machinery. 80 years of successful growth have built for Advance-Rumely a manufacturing institution of permanency and great strength. Advance-Rumely has factories at La Porte, Ind., Battle Creek, Mich. and Toronto, Ont., 127 modern buildings covering over 195 acres.

In order to provide closer co-operation with the farmer, Advance-Rumely has established 29 branch offices and warehouses. Each has a complete stock of machines and parts, capable of rendering to its customers the all-important, close at hand, immediate service. These branches are all located at important railroad points, and are under the supervision of competent men.



Every one of the three thousand Advance-Rumely dealers is able to provide intelligent and expert service to farmers in his locality. A tractor school is held for dealers each winter at the La Porte factory, where every detail of the product is made known to the dealers by expert instructors. This provides each dealer with the ability to supply the last link in the service chain.

The Rumely OilPull Tractor was designed and built to burn kerosene, and each OilPull is guaranteed in writing to burn kerosene under all conditions and at all loads to its full rated brake horse power. It is oil cooled—the motor is low speed, heavy duty, valve-in-head—cylinders are ground to the thousandth part of an inch. The owner of an OilPull in 1920 is assured of the same efficient and dependable service from his tractor that the owner of an OilPull purchased in 1909 has received.

The OilPull is built in four sizes—12-20, 16-30, 20-40 and 30-60 H. P. Send for a catalog.

ADVANCE-RUMELY THRESHER COMPANY, *Inc.*
La Porte, Indiana
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ADVANCE-RUMELY

term "profiteer" has been seriously and on an extensive scale applied to farmers; but nothing could better illustrate the hysterical state of those living in the cities than the application, by them, of the term profiteer to farmers; for what is a profiteer? I should define profiteer as a person who, taking advantage of people's necessities or of their vanities, sells what they have to sell at a price that will enable them to net a profit out of all reason. If that be a fair definition of a profiteer, then there are few, if any, profiteers among farmers. Occasionally a farmer, by better management or by sharp business practices which will not bear too close scrutiny, or favored with a farm of exceptional productivity, will make more than his fellows; but the farmer who makes $15,000 in thirty years is doing far better than the average farmer. There are, however, thousands and thousands of farmers who from year to year make no profit, only enough to keep body and soul together. Then there are the farmers who have failed; also, the vast army of tenants, tenants not for a day, but for life. Farmers profiteers? Tell it to the inhabitants of Mars, but not to the men in America who know the facts.

"But farmers fix prices!" Yes, the farmers have, in a few instances, combined and set a price per quart upon their milk. What happened? They were arrested and prosecuted for violating the Lever law or the Sherman law. But in combining to set a price upon the milk which they were furnishing the public, what were they seeking to bring about? A fair profit above the cost of production. If that be a sin, then those farmers were sinners, meriting the opprobrium of all those who think that the farming business should be run at a loss and on a philanthropic basis, that farmers and their wives should find their reward, not in just returns, but in the great spiritual satisfaction of having fed and clothed the hungry and naked. All very fine and all very true, but farming so conducted will not pay doctors' bills, or square grocery accounts, nor will it buy shoes for the children.

But these instances of price-fixing are exceptional. So far, the farmers as a whole have had no thought, at least no plan, of setting a definite price upon the products of their farms. For them collective bargaining is not even yet in the experimental stage. Farmers may in time resort to price-fixing; they must do so if there is no other way to safeguard their economic rights. Up to this time, so far as there has been any price-fixing, it has been done not by the farmers, but by those to whom they have sold their products.

The implication, if not the direct charge, that farmers control production in the sense that they limit production to boost prices, is, moreover, far from the truth. The cotton growers in the South are trying to restrict the production of cotton so as to get a higher price; but the circumstances under which the experiment is being made are exceptional. It remains to be seen whether the experiment will be an economic success. But all farmers should not be judged by what some farmers are doing under exceptional circumstances. Some farmers, however, have through incompetency or inefficiency, produced less than they should have done; but that is a condition which the Farm Bureau is seeking primarily to correct. On the other hand, the history of farming in this country will show that the farmers have never shirked, that whether prices were high or whether they were low, they have at least tried to produce all that they were capable of producing. "Produce less and get more" has never been the slogan of the farmers, and it never will be for this reason if for no other: The farmer is a consumer as well as a producer, a fact which people, especially those in the large cities, are apt to forget. There is, however, a striking difference between the farmer-consumer and the city-consumer. The farmer can raise his own meat, his own vegetables, especially potatoes, a big item in the cost of living, his own apples and grapes and strawberries, and other small fruits. Because he can do these things, the farmer-consumer has a sense of independence that the city-consumer does not and cannot have; but so far as most other things are concerned farmers and city dwellers are in the same boat. Does the city-consumer buy flour and sugar, oysters and sardines, olives and bananas, lemons and oranges and alligator pears? So must the farmer-consumer if he would have these things.

Being a consumer as well as a producer, the farmer understands what the high cost of living means. Being a consumer, the farmer will not deliberately limit production, thereby adding to the cost of the things that he must buy. Being a consumer, the farmer is able to sympathize with those dwelling in the cities large and small, who must buy everything that goes upon their tables.

City-consumers, by their ill-advised attacks upon farmers and by their ill-founded charges against them, are adopting a course which must tend to alienate those best qualified to sympathize with them and to understand their economic problems—the men and the women on the farms who would gladly join hands with them in a sincere effort to bring down the high cost of living. But there must be no loafing either in the country or in the town. Neither party must claim any privilege that it would deny to the other. If it is wrong in the country to produce less and get more, it is equally wrong in the city to work less and get a higher wage, for by so doing the man in the city automatically reduces production. On the other hand, if it is right for the storekeeper and the manufacturer so to order their business as to realize a profit, it is also right for the farmer so to order his business than he can be assured of a just profit above the cost of production. When people shall see these things aright, the way will be open for an hearty and effective co-operative effort by city-consumer and farmer-consumer, for the solution of the problems they have in common, which shall be satisfactory to both town and country.

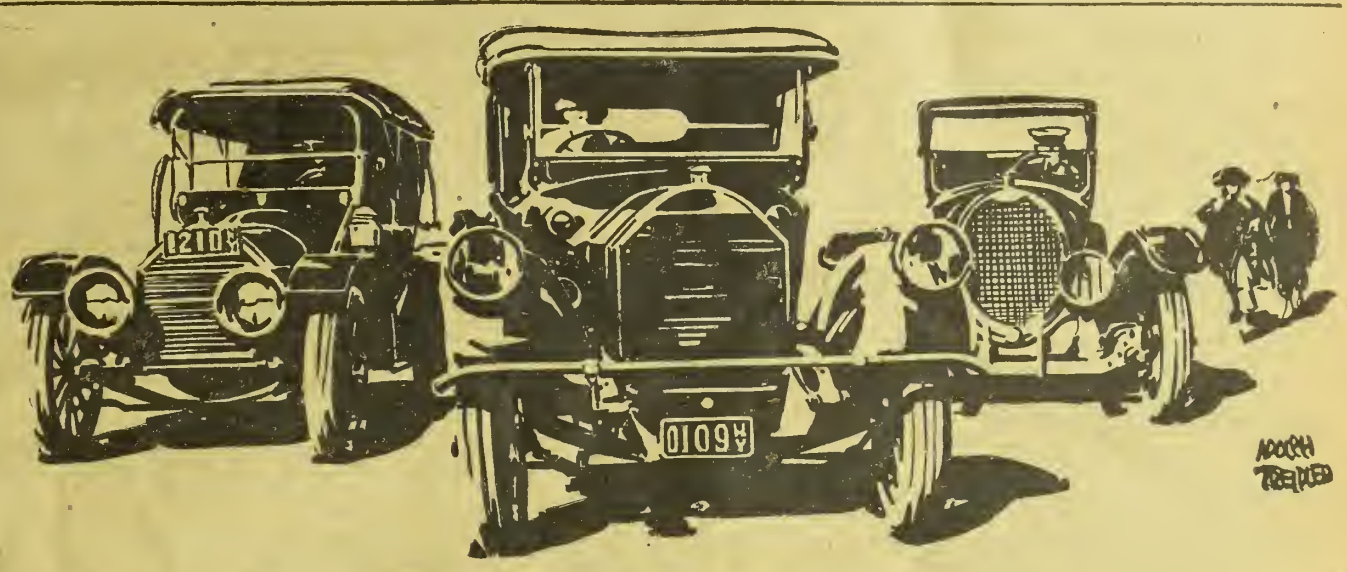
Armour Offers Club Prizes.

Miss Maude Sheridan, State Club Leader of Colorado, and Mr. G. L. Noble of Armour's Farm Bureau, Chicago, have recently prepared an agreement whereby the champion pig grower and the champion corn grower of the Junior clubs of the state of Colorado may win a $100 prize trip to the International Live Stock Show held in Chicago next December.

The winners will be selected by the authorities of the Colorado Agricultural College in charge of club work, at least three members of the college staff passing upon the records of the various club members. The winners of the prizes will be announced at least three weeks before the International takes place, and the prize money for the trip will be distributed by Miss Sheridan about two weeks before the show. In order to receive this money it will be necessary for the winner to take the trip to Chicago and prepare a brief story of his or her experiences at the Stock show.

Armour's Farm Bureau is offering these prizes in the belief that the most potent force in producing more and better livestock is that of the boys' and girls' clubs, whose influence is growing rapidly in every state.

Fruit trees are like children: In the beginning they give us a great deal of trouble and worry, but in the end we are proud of them.



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H. A. LINDGREN

All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, WESTERN FARM LIFE, Denver, Colorado.

Produce Better Cream.

The Colorado dairy commissioner's office reports the fact that over a quarter million dollars is lost each year by the dairymen of the state because some bring in cream of poor quality which is mixed with the good cream and lowers the grade of all. This should be a comparatively easy matter to remedy if the dairymen would pay close attention to the care of the dairy utensils and the handling of the milk from the time it is drawn from the cow and the cream delivered to the creamery or receiving station.

Too many people do not wash their separators after each skimming. That neglect is largely responsible for the poor cream brought in. Flushing the bowl with luke warm water is not sufficient. It should be taken down after each skimming and the parts carefully washed with water containing washing powder. They should all be scalded with hot water to destroy filth germs. All of the dairy utensils should be handled in the same way.

The responsibility for a high grade of butter lies largely with the cream producer. Why not keep the standard high for Colorado butter and thereby establish a worth while market for it?

The new grading rules in effect will create a difference in price for the lower grade article. This will in a way correct some of the evils. However every dairyman should strive to bring in a first grade article, as it will pay well and assist in advancing the industry.—H. A. L.

Notice On Cream Grading.

To All Cream Station Operators:

Cream grading was put in force in Colorado the middle of September last year. Most station operators have conscientiously tried to grade cream to the best of their ability. Much good has already been accomplished toward improving Colorado butter by keeping the poorest cream separate. The industry will benefit by cream grading if it is carried out uniformly and thoroughly. We wish to establish uniform methods and to see that grading is practiced by all creameries and cream stations.

The flush season will soon start and with it a larger percentage of 2nd grade cream. Cream grading will be more strictly enforced. All operators must grade churning cream. Competency of licensed operators may be judged by their ability to grade cream and license will be canceled or renewal refused for continued non-compliance or for refusal to carry out these regulations.

An enormous sum is lost to the dairy industry each year because low grade cream produced on some farms is mixed with good cream. Most cream producers want to produce first grade cream. All should do so. Those that do not should not be allowed to lower the quality of Colorado butter. Their cream should be graded 2nd and paid for as such.

The station operator will best benefit the industry by grading all cream according to the grading instructions and by encouraging those parties that deliver 2nd grade cream to improve the quality of their product by more frequent delivery and by better care of it at the farm.—H. C. Nevius, Deputy State Dairy Commissioner.

Don't Neglect the Boar.

While the herd boar should always be quartered in an individual house, the specifications for his quarters should not stop there. In addition there should also be a good roomy pasture in connection, with shade and fresh water always available. Under these conditions sanitation is more easily effected and exercise is sure to be taken. Hence a better breeding boar should result. Animals that are confined in small pens or lots never give as satisfactory service as would result were they allowed more room and range.

During the breeding season the feed should contain less of the fat forming feeds since vigor and strength of the generative system is the first consideration. The boar, on a rich muscle-building and bone-forming ration is normally the one that produces abundant spermatozoa and of plentiful vitality.

Animals in fair condition of flesh give the best service. An animal should not start the breeding season in show flesh unless it is intended to hold it there throughout. It is better to start in thinner flesh and finish the service season in better flesh than at the start. Medium flesh is advisable.

Breed the boar on an empty stomach. Services before feeding are better than after eating.

The number of services that may be allowed a boar depends upon age and individuality. Some boars will stand twice as many as others of the same age and condition. Mature boars can usually breed two sows a day if properly handled. One complete service is enough, for a normal male ejaculates many millions of spermatozoa at each service. Only one sperm is required for each pig formed. It is upon this fact that the successful use of artificial impregnation (commonly called capsule breeding, with horses) has been developed.

It is a mistake to leave the sow with the boar for a day or a night. One complete service is enough and more merely weakens the male.

A separate breeding lot is desirable. Take the boar there for each service. Breeding in the boar's regular yard is often responsible for developing the practicae of masturbation by the boar. Keeping sows in a yard adjoining the boar yard is likely to have the same results. Have the boar yards entirely separate from those occupied by sows.

Outside of the breeding seasons boars can often be handled together, a big saving in time and labor so far as caretaking is concerned. Be kind to the

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CREAM SEPARATOR

Farmers in need of a new De Laval Cream Separator this year may wisely place their orders immediately if they have not already done so.

For three years past, notwithstanding the constantly increased production, it has not been possible to make nearly enough De Laval machines to meet the demand. We shall make 25,000 more machines in 1920 than in any prior year, but are already behind deliveries in some sizes. Hence the importance of getting in your order early.

Superior as De Laval Cream Separators have always been to other separators, they are better still in 1920.

If you have milk to separate you can't afford to waste quantity or quality of product, time and convenience, through the use of any other means of separating than a De Laval machine.

An improved De Laval Separator will surely save its cost in a few months, and will go on doing so every few months for many years.

De Laval Separators speak for themselves. Their appearance and performance best demonstrate their superiority. Be sure you see and try one before buying any other or deciding to go on using an inferior or half-worn-out separator another year.

Your De Laval local agent will be glad to afford you the opportunity to do this. If you don't know him simply address the nearest De Laval main office, as below.

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Of course you want our silo and our service. It costs no more. We have an agent near you.

The Hinman Silo Co.

Stock Yards — Denver, Colo.

boar but never give them a chance to put you in a corner.

During the breeding season keep a close watch on the boar's reproductive organs. If any abnormal conditions appear establish immediate communication with your veterinarian. Any inflammation of the testicles or secrotum must be looked after in early stages.—Vird O. Cudd, in Duroc Bulletin.

The Value of Pasture.

When pastures on the farm were first advocated it was often remarked that it would not pay on high priced land. This idea still seems to be held by some farmers. A careful study of the returns from the various acres in different crops as compared with good pasture, will convince a man that the net return from the acre in pasture will be greater than from many of the so termed high paying crops. It is agreed that the best pastures are those on the irrigated lands. They will support from 1 to 2 cows per acre. In the case of the dairy cow it has been found that the ideal feed is pasture. She will come nearer producing her maximum on it than when fed any other feeds. A good cow, which is the only kind that should be kept, will produce an average of 30 lbs. of fat a month. The average pasture period is 6 months. During that time she would produce 180 lbs. of fat which at 50 cents a pound means $90. Many cows will produce more. What will the other crops produce?

Here is another thing that should be considered in this comparison, the fact that, you have done away with the expense of harvesting the crop. The cow has also produced some manure which is of value to the land.—H. A. L.

Falsifying Cream Tests.

Conviction was secured recently in the courts of Denver of the Climax Dairy company on the charge of falsifying cream tests. The case was prosecuted by State Dairy Commissioner, G. E. Morton, on complaint of a number of farmers. Seven counts were included in the warrant and the verdict was guilty on each count against the company. The cases against the individual officers of the concern Morris H. Robinson, Harvey H. Butler and John Helstein were dismissed at the direction of the court, as the evidence did not fix the blame on any particular individual.

Information from the dairy commissioner is to the effect that the tests on which these complaints were filed varied all the way from 2 per cent to 10 per cent from the correct test. The successful prosecution of this case will go a long way toward obtaining for the farmers correct returns from their shipments of cream. Farmers on whose complaint these cases were filed are located in various parts of the state, and include Louis Larsen of Gowanda, Lillian Howell of Hillrose, S. A. Lane of Atwood, Thomas J. Hayes of Byers, Willis A. Call of Kremmling, H. H. Rudolph of Kremmling and B. T. Shelton of Hayden.

He'll Build A Silo.

Editor Western Farm Life:

For several years I have milked a few cows, fed out a few steers, and practiced what you might call general farming. My wife and I have gotten along very nicely on our little farm. We have worked together and planned and saved and gotten ahead. Occasionally we keep a few accounts so we know something of what departments of our business are paying. I must confess, however, that my wife deserves the credit for telling me about the good work of the cows and chickens. For some reason it is hard for a man to keep track of these small sums which come in every few days, but which at the end of the year show a surprising total. I told her that I had noticed recently that our best farmers were inclined to erect monuments somewhere among their buildings, and these monuments certainly reflected something. The round high towers give a splendid opportunity for a man to look around him and take a general survey of his property; but more than that these fellows who have the observation towers seem to have very big cream checks, and when they ship out a load of cattle there is a sort of shine and fullness to them which makes them top the market. I noticed that when they had those cold stormy spells, the men who owned the silos seemed to be perfectly content, and I am sure their cattle were.

This chopping corn out of shocks when it is covered with ice and snow is not the kind of job which keeps the boys on the farm, and it's not the kind of feed that puts the milk in the pail. The other day when I hauled in a load of corn stalks that had been weathered for some six months, and looked like hazel brush well cured, my wife remarked that she would prepare some of the cabbage which had been left in our garden for my dinner. I observed the cabbages as I came in, and really thought she had summed up the situation correctly. When I found some good old sauer kraut and spare ribs on my plate I couldn't help but think of those good cows and their brothers smiling over their mess of silage.

I figured up the other day and found our cows were producing about one hundred and fifty pounds of butterfat a year, and this I know is above the average; but I found that Henry Jones' cows had averaged over three hundred pounds of butterfat for the year, and this meant that he received about six times more out of his cows than I did out of mine, for it costs about so much to keep a cow a year, and of course there is no difference in the cost of milking whether a cow gives four quarts or four gallons. The investment is there, and it's a cow that must be kept; so if a cow make a profit on one hundred and fifty pounds of butter it is a pretty small one, and it is easy to see where this profit can be increased ten times by slightly increasing her production. The cost of hay and feed as well as of pasture is so high that it seems that a fellow has got a lot of money to throw away if he leaves half of his corn crop each year to be spoiled by the weather and storm.

There is another thing I notice about this silo business. Every once in a while, in fact it is pretty near twice in a while, some durn thing goes wrong with the crop. We have a hot wind that cuts down the yield, or it gets so blamed dry it does not fill, or we have a hail which just about strips it to pieces, or a patch gets drowned out and we have to put in a late crop which gets caught with the frost, or if we are a little late in planting, an early September frost will put it out of commission. The fellow with the silo is always prepared to save whatever he grows and then to turn it into high priced product that can be marketed for cash as cream or beef. I figure that down in this country with the average corn crop, at least one-half is in the stalk and leaves. This is the average, taking one season with another. If a fellow can tell me that he can afford to grow this crop and throw half of it away, I certainly can say to him that he is fortunate. If he can save the whole crop I figure he can be sure of a profit.

Yes, I have made up my mind, and you can put me in the silo class. I will have my watch tower right up above the barn as soon as I can get it there. When the neighbors go by they well remark that Spivins is prospering; they always figured that he was a pretty smart fellow and sooner or later would show evidence of it; nothing can keep a good fellow down, and it will be only a few years before he will be buying up some of these surrounding farms.—A. S. B., Otero County, Colo.

Alfalfa Pasture for Hogs.

It will soon be time for turning the hogs on alfalfa and thereby, with a little grain, make the most economical gains of the year. The first pasture, though a little watery, will assist in reducing expenses in feeding from that incurred by the dry lot method. Several divisions to the alfalfa pasture have been found advisable. This will enable the shifting from one division to another at intervals and keep a new fresh growth before the hogs.

Most hog men agree that a little grain is of value in connection with the pasture. Some use a 1 per cent ration and others 3 per cent. They feel that either method brings better results than pasture alone.

The hog raiser who lives in the alfalfa producing section and does not make use of a part of it for hog pasture, is missing a real opportunity.—H. A. L.

A young man entered the village shop and complained to the owner that a ham he had purchased there a few days before had proved not to be good.

"The ham is all right, sir!" insisted the shopkeeper.

"No; it isn't," insisted the other. "It's bad!"

"How can that be," continued the shopkeeper. "when it was cured only last week?"

The young man reflected a moment, and then suggested:

"Maybe it's had a relapse."—London Blighty.

S. E. Van Slyke

Two Men With the Perfection Milker Take the Place of Five Men Milking by Hand on S. E. Van Slyke's Farm.

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The Perfection is the Milker with the Downward Squeeze Like the Calf

PERFECTION MILKER

A Silo Tour in Larimer County

DAIRY AND BEEF FEEDERS FIND SILOS PROFITABLE.

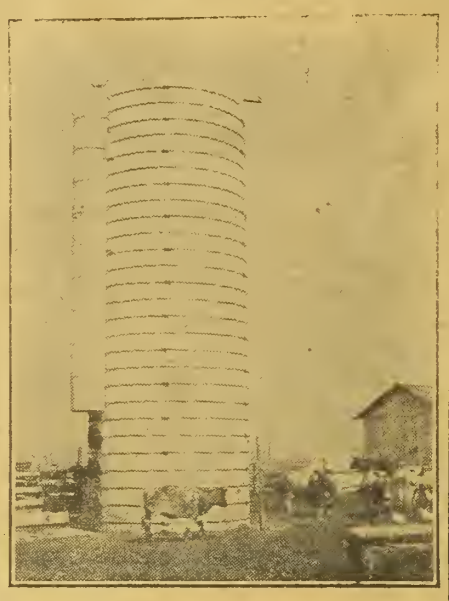
H. A. LINDGREN.

A SILO tour was recently planned for the farmers of Larimer county by County Agriculturist D. C. Bascom and County Club Leader W. S. Hill. The dates set were March 17 and 18. The first day was to be spent in the Loveland district and the second at Ft. Collins. On account of the weather conditions on the 17th, the farmers were busily engaged with their spring work with no time for getting away for the silo excursion. However, a few of those interested made the trip and gathered some interesting facts on silos, some of which were history but they go to show the interest taken in silos in the community. Most of the farmers visited on the trip were dairymen and the general idea gathered from talking with the farmers was that they felt that silos were essential to dairying, and that it was impossible under ordinary conditions to keep up the milk flow without silage.

Practically all types of silos made in Colorado were seen on the trip. The first stop was at the farm of B. D. Dragoo of Loveland, who has a Hinman silo 12x40. This past season he weighed the corn put in at filling time and weighed the silage taken out and found practically no shrinkage. In weighing out the silage he verified the recent improved tables of capacities worked out by the Kansas and Missouri stations. His yield of corn for the silo was 9 tons to the acre. Mr. Dragoo has sold the greater part of the contents of the silo to a neighbor who fed it to beef cattle. No freezing of silage was experienced during the cold weather. It was removed evenly over the surface each day.

The next stop was at the farm of Robert Beaird who is a close neighbor to Mr. Dragoo. Here we found a cement stave silo opening directly inside the barn which makes feeding comparatively easy for dairy stock. This silo was giving complete satisfaction. Mr. Blaird has just disposed of a herd of well bred Jerseys on account of his health. He has recently rented his 60 acres for an annual cash rent of $1,800. Mr. Beaird uses two men in the silo at filling time to tramp the silage. He uses a small amount of water when filling. His corn yield was 10 tons per acre.

The party stopped next at the farm of J. W. Dickey about 2 miles from Loveland. He has a herd of grade Guernseys of excellent type and quality. Here we found a cement stave silo and an enthusiast for silage in connection with dairy feeding. Mr. Dickey also raises Poland China hogs. He recommends a covering of beet tops on top of the corn in the silo as one of the best methods of keeping the silage from spoiling. The tops are run through the cutter covering the corn with about 6 to 8 inches. This reduced spoilage to practically nothing. Mrs. Dickey makes all of the cream from 9 cows on the farm into butter which she has been selling in Loveland at creamery butter prices.



Silo on Farm of Howard Irwin, Loveland, Colo., Breeder of Registered Shorthorns.

We next drove to the farm of E. A. Hankins where we found two wood stave silos 14x30 in size. The contents of one of these brought $700, or about $50 per acre for the corn. The silage was fed to beef cattle. Mr. Hankins says a man can pay for a silo the first year from its contents.

Across the road from Mr. Hankins we visited Mr. C. L. Wilson who has two 12x28 silos above a five-foot pit. He had most excellent results last winter in feeding silage to a carload of young mules. He also fed some to milk cows.

W. D. Warnock and Sons, of Loveland was the next farm visited. These gentlemen and also Mr. Howard Irwin feel that the silo is indispensable for breeding stock when intelligently fed. They have 4 cement stave silos on their farms, or a capacity of over 500 tons. These have a large acreage in irrigated pasture of which they speak highly.

Lunch was the next in order after which the farm of Mr. R. C. Benson was visited. Here we found two wooden stave silos built on two corners of the barn and opening into it. They were 12x28 above the pit. Mr. Benson milks Holstein cows and uses a milking machine.

"A dairyman is foolish to dairy without a silo. I use silage for my hogs and find it worth while when fed in the right way," was his indorsement. He uses it in a limited way for hog feeding simply as a succulent feed.

The next and last stop was at the farm of T. H. Hill about midway be-

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Price, $1.04 per treatment, including war tax.

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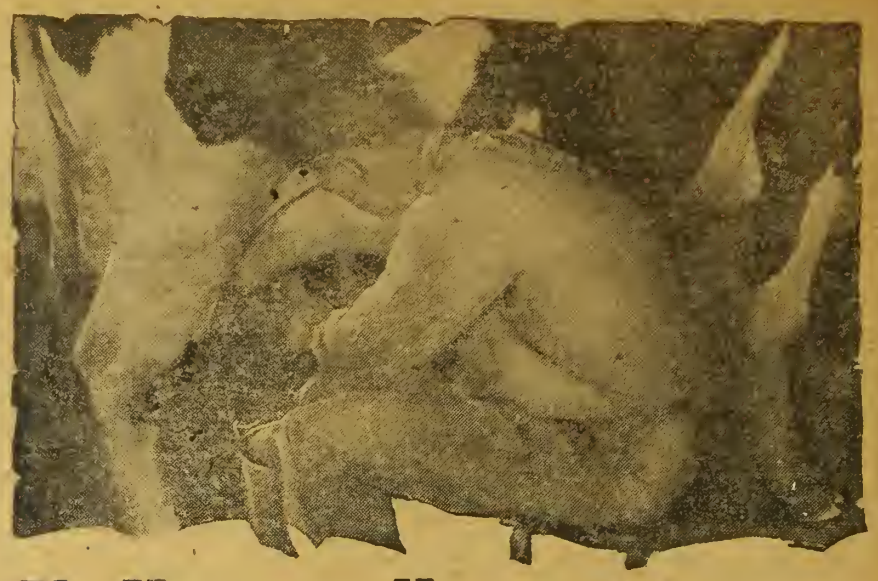

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Majesty's Feather Lad, Grand Champion Jersey Bull, owned and shown by A. M. McClenahan, Greeley, Colo. This is the Herd Sire of the Sweepstakes Champion Herd of the National Western Stock Show, 1920.

tween Loveland and Ft. Collins. Mr. Hill is cashier in one of the Loveland banks and has imported quite a large number of dairy cows into the country. He maintains a herd of 40 milk cows on his farm. He has a Hinman hollow tile silo.

County Agent Bascom reports a total of 135 silos in Larimer county. The goal is " a silo on every farm."

The 18th was to have been spent in the section near Ft. Collins where silage is being fed to sheep, but on account of a heavy wind storm that part of the tour was postponed until a more favorable date.

The general idea gathered in regard to silos on this tour was that people in that section are no longer doubting their value in livestock feeding.

Strasburg Silo Tour.

Wednesday morning about fifteen of our farmers and business men together with Prof. Clark of Fort Collins and County Agent Vanderlip made a silo tour in the district south of Strasburg.

The first stop was at the S. Dye place where the silo was inspected as was the silage which had been in the silo for two years and what was left was in excellent shape. It was very plain to see by the looks of the livestock around this place as to the benefits of feeding silage.

The next place the crowd visited was the R. L. Edelen ranch. Here a short time was spent in looking over the silo and a great deal of time in looking over the hogs. Mr. Edelen has as nice a bunch of show hogs as we have seen in this valley. From the Edelen home the tour took the men to the Mauritz Lindfors ranch, where the first inspection was made of a pit silo. It took Mr. Lindfors single-handed just two minutes to raise a box that holds about 400 pounds of ensilage. This silo is about 34 feet deep and 12 feet across and will hold close to 100 tons of silage.

H. C. McCullough and wife with the assistance of Mr. and Mrs. Chas. Elliott were the next entertainers of the sightseers and put on a luncheon that was great. We have always claimed that our wife was the best cook in either county, but we must take her to the McCullough home some time and take a couple of lessons on how to build cherry pies. After eating a regular mansized dinner we ate a big piece of cherry pie, right after which we ate another piece of cherry pie, and while the rest of the bunch were talking silo in the other room we sneaked in the kitchen for another piece of cherry pie, but curses! Totten had been there first and the only thing left was a grease spot on one of the pie tins. After Prof. Clark gave a talk on feed and how to prepare it, that is for stock (Mrs. McCullough is the leader on that subject when it comes to humans), the crowd adjourned for the inspection of another pit silo on the McCullough place. At this stage of the journey the snow began to come down in chunks and the crowd had to hurry to the C. J. Elliott home, where the party inspected a silo, also a cement grain crib half full of corn. From Elliott's we went to the Patsy Mourning ranch, where two pit silos were in the course of construction. Patsy was the busiest man on the job, trying to boss and tell us poor ignorant cusses just how to build silos.

On the way home we stopped at the H. N. Mennenga ranch and saw some real stock fed on silage. The trip ended with a short stop at the R. L. Bietler place.

Summing the entire journey up we will venture to remark that so many ask if there is such a thing as insurance against dry weather. There most certainly is, and it is one of the cheapest and surest of any kind of insurance you can buy. A well filled silo is the only insurance against drouth.—M. E. Dodd, in The Strasburg News.

Discipline Par Excellence.

A visitor, green about army life, walked interestedly to the soldier, who was digging a hole.

"Digging a trench, my good man?"

"No," smiled the soldier, sadly, "I'm digging a grave. One of our rookies just passed away. We were on the rifle range and the captain told us to hold our breath while pulling the trigger on the rifle. This lad's rifle was old and rusty, and the trigger stuck, and there you have it."—The American Legion Weekly.

Orchard grafters are the only kind of grafters who don't get into trouble these days.

Just a simple law of nature

AN apple falling from a tree awoke Sir Isaac Newton and supplied to Science the law of gravitation. The jumping of a tea kettle lid showed James Watt the power in boiling water and gave the world the steam engine.

The intense centrifugal force generated by a revolving tubular bowl was what P. M. Sharples put into a machine for the complete separation of butterfat from milk. Later he made his greatest improvement by utilizing the vacuum generated by the same centrifugal force to lift milk into the bowl in the exact quantities that the speed of the bowl will skim absolutely clean.

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The Sharples discovery is protected by United States patents. No other separator is a suction-feed separator. No other maker of separators can make use of the principle.

Milk is vital to the welfare of the American people. Its production should be raised to the highest point of efficiency by the use of time and labor-saving machines.
(Signed)
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Suction-feed makes possible the knee-low supply tank, doing away with lifting. The oiling system needs little attention. The one piece bowl—no discs—is easy to clean.

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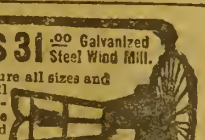

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Banish the Scrub Sire.

An article in the Duroc Bulletin of March 15 under the title "Let Every Duroc Breeder Use the Knife," brings out some truths that are aplicable to all lines of livestock breeding. The fact of the matter is, we have too many scrub pedigreed bulls in the country. Though they may be bred right, they are of poor conformation and in breeding do more harm than good.

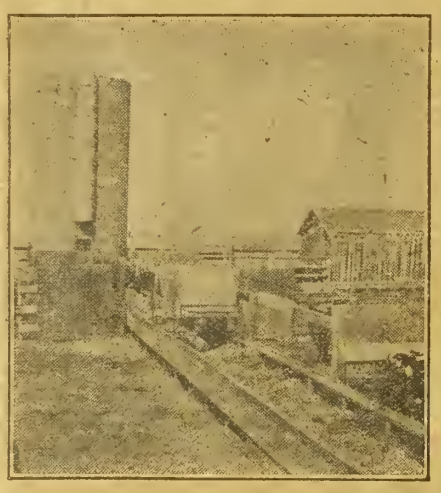
The knife should be used freely on that kind of stuff. Fewer males will make the good ones more valuable; not only that but there will be more progress in the breeds. As a general rule the livestock farmers are using too many sires. A little co-operation on the part of the breeders would enable a good sire to be used in more herds. It is often found that a good sire is not being used to capacity on the farm while a neighbor may be using one that is inferior.

The responsibility for the right kind of stock rests largely with the breeder who has it in his power to use the knife on sires that tend more to tear down constructive breeding than to build it up.—H. A. L.

Visit Carpenter Herd.

Several farmers from Larimer county accompanied County Agriculturist Bascom and Club Leader Hill to the farm of Delph Carpenter of Weld County to look over the pure Bates Shorthorns that he is breeding. There were some 15 people in the party and all felt that they had spent a very profitable day as the guest of this progressive breeder.

Mr. Carpenter has some 90 head of Shorthorns on his farm which is ideally situated for a purebred livestock enterprise. The greater part of the herd are of the pure Bates breeding, which are the foundation strain of the Milking Shorthorns. He makes the assertion



Silo and Feed Rack on Carpenter Cattle Company Ranch.

that they are as rare as buffalo. With recent importations made from Kentucky he has one of the largest herds of pure Bates breeding in the country.

It is the idea to breed bulls for the dry land farmer. It is not the aim to follow the show circuit, but to keep the stock on the farm all of the time. Some very exceptional stock was found. The cows are large with good udder development. They are hardy and are producing a good flow of milk, as evidenced by the fact that after feeding the calf well there is still milk in the udder to be milked by hand. Some of the cows are giving more than enough for two calves.

The two herd sires in use are Baron Groom, a pure Bates bull, and Coles Coming Star, an imported Milking Shorthorn bull. Both of these animals are outstanding in conformation. The last named is a little more on the Scotch type. He is capable of winning in any beef class.

Mr. Carpenter is unable to supply the demand for bulls for breeding. He does not make it a policy to sell any heifers. He has on hand a limited number of bulls of serviceable age. There are many orders booked ahead. Everything offered for sale is closely culled. It is the idea of the owner to maintain the standard of the breed. When the bulls are sold at private sale, choice is given in order of listing of inquiry.

The feeding equipment used on this farm is one of the most convenient ever seen. All hay is cut in short lengths through the ensilage cutter. This eliminates most of the waste. The cut hay is stored in a large bin. A track leads from this bin through the feed lots. It is built directly over the feed bunks. A car is run on this track. It has a false bottom. On the opposite end of the track is the silo. The same car is used for silage feeding also. By this plan it is possible to feed the entire herd in thirty minutes. This feeding arrangement can be easily used in any feeding operation and saves a great deal of time.—H. A. L.

Accredited Herds.

The time will come in the near future when the man who has taken advantage of the opportunity to have his herd of stock tested by the U. S. Bureau of Animal Industry under the accredited herd plan will be selling his stock more readily than the man who has waited. The main idea of the plan the government is carrying on, is to get stockmen interested in testing their herds for tuberculosis and to follow a careful campaign to keep the herd from becoming reinfected. After a series of tests during which the herd has been found to be clean it is listed as an accredited herd with the Bureau of Animal Industry. Any one desiring to know if a herd is accredited may learn from this source. It is of course necessary to fol-

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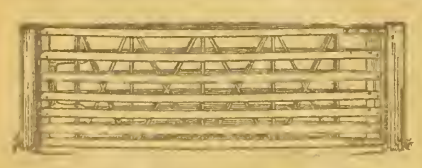

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The 1920 PRIMROSE at the 1918 Price

BUTTER and baby shoes, underwear and eggs, coal and automobiles—prices of these things and other things have climbed and climbed since Armistice Day. Has the price of anything on earth stayed down?

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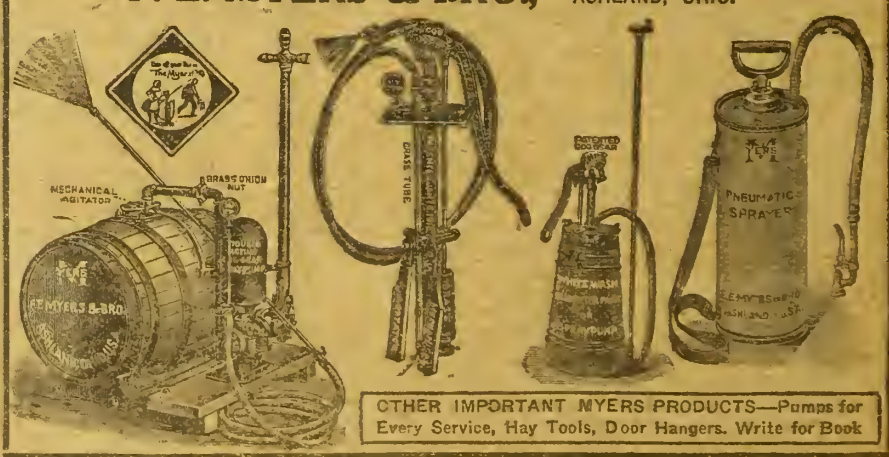

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low up this work carefully even after the herd is pronounced clean. In order to keep it so no stock can be added to the herd unless they are from an accredited herd, or have been tested under the same plan. If all stockmen will take advantage of this plan their testing will be done by the Bureau without cost to them. The idea of the work is to stamp out this disease among the herds of the country. When this is done it will likewise greatly reduce the disease among the people.—H. A. L.

Defending the Appraiser.

To Western Farm Life: Oakley G. Pierce, who so unmercifully scores the Federal Land Bank Appraiser, on page 8 of your March first issue, seems to be only slightly acquainted with the appraisers in Colorado. I am personally acquainted with them and regret that I find it necessary to take the opposite view of the situation.

In my position, I have had a splendid opportunity to study, both the applicant and the appraiser at close range, and I have never had any cause, whatever, to criticise the appraiser. On the other hand, I have found applicants very often, who knew absolutely nothing about how this money is obtained with which to make their loan, who would try and tell the appraiser how much they are entitled to, and at the same time, their application plainly showed, they were borrowing for no other purpose than to liquidate indebtedness incurred for living incidentals; indebtedness, that in reality, should have never been contracted. In other words, they were borrowing to pay for a "dead horse."

Of course, I am not referring to Mr. Pierce, but speaking generally and, I think, for the good of the system. Farmers with inflated ideas, not familiar with the basis on which the system was founded, have visions of immense wealth that would eventually come their way if they could get so much, usually more than any other member had ever applied for. Of course, because it was he, (whoever the applicant might be,) the loan committee should just recommend anything he applied for, and, naturally, the federal appraiser, should sustain the local board's recommendations because the applicant has it all doped out that with this 5½ per cent money he can make a fortune over night. But very likely he has stated in his application the money will be applied toward liquidating indebtedness instead of the purchase of equipment, livestock or something to help him sustain his present credit.

There are two sides to this loan business, whether it be federal or private. Let some of these critics place themselves in the position of the investor who buys the bonds issued against the mortgages. Would they care to buy bonds when they had reason to believe they were issued against securities chosen haphazard by poor judges of human nature and poor insight into an applicant's future? Investors who have money to take up our Federal Land Bank bonds did not acquire it except by close and conservative business judgment, and believe me, they are not going to use their money carelessly after they once get it. Usually an investor knows how to invest to be safe, and it is the safety of the investor and the loan system the appraiser has in mind when he places the amount loaned to the borrower. The borrower does not trust everybody with his pocket book and likewise the lender. It should be somewhere near equitable, and that is exactly what the appraiser is working for,—equity.

I believe, as a rule, the borrower is pretty well satisfied with the loans recommended by the federal appraisers. Of course, there are always some who are not satisfied with anything that has restrictions but they usually do not stop and think that this federal loan business is not a public trough where everyone dips in and helps himself. There is the investor to consider. Just as soon as he finds the mortgages are secured by inflated real estate he is not going to invest, neither would the critics, if they were lending instead of borrowing.

I am inclined to think most of the present financial condition is due, in part, to the misuse of credit. It is a mighty good thing for many people that they have some one to measure out the amount they are permitted to go in debt. It is a well known fact that a great many people will buy, and keep buying, even things they do not need, if they can buy them on time. It seems they do not know when to stop buying, or do not find it out until about pay day and then they think the world is against them because some creditor is urging them to pay. Then they score the men with money for robbing them, when in reality, they robbed themselves, ruined their credit, and of course, find it hard to get a new hold, are down and out and soon start knocking the system, never suspecting that possibly they could improve conditions wonderfully if they would only study their own mistakes instead of spending time finding fault in others.

The Federal Loan system is a great benefit to those who know how to use credit. It gives them plenty of money at a low rate on long time. It keeps a great many from getting into debt too far, and at the same time gives them ample money to work on if it is properly invested. I have often thought it a fine scheme to have some one appointed to help some of the borrowers invest their money in a way that it would help instead of hinder them. The Land Bank docs this to a certain extent but there are so many ways of evading the bank that poor investments are often the first thing a borrower makes; then when his money is gone and the interest is due, he has nothing to pay with, and again the appraiser is scored because he did not recommend enough money.

Would our friend please study the appraiser from the investor's stand and see how far wrong, or I should have said, who is wrong? Always remember there are two sides to every deal, a borrower and lender, a purchaser and a vendor. When we borrow we often see only the borrower's side; when we buy we do the same. We often think we have the only side worth mentioning, but turn the thing around, and see the appraiser's position and you will appreciate his attitude. He must be conservative or the whole system would go like a lot of other business, broke.—Roy Marple, Secretary Cope National Farm Loan Association.

Zang's Sale Makes Record.

Percherons on the Elmwood Stock Farm, Broomfield, Colo., sold so well on April 6th that the fame of this great breeding farm will go throughout the United States and over into France to the District of Perch, from which the foundation stock for this farm was procured. The average for 40 head of mature draft mares and stallions was $675 and six colts sold at an average of $260.

Glancer topped the sale at $1,300, this stallion going to Governor O. H. Shoup's Cathedral Rocks ranch in El Paso county. The Governor was a heavy buyer, coming away with six fine individuals. On mares the top was $1,200.

A look at the cover picture of this issue of Western Farm Life shows four of the mature daughters of Champagne, the noted sire at Elmwood. Three of these mares were put in the sale and disposed of as follows: Adelia, $675; Mattie, $850; Celine, $725.

This happened within twelve miles of Denver, a city boasting of an alderman who is fathering an ordinance which if passed, would banish horses from the streets of Denver! That heavy draft horses of the right breeding are appreciated, necessary and useful on the farms and ranches of the West was apparent in this sale, full details of which will be published in the May 1st issue.

One of the Texan friends of Representative Cooper met him the other day. "You smoke, don't you?" he asked.

"Sometimes," said Cooper.

"Take this," remarked the Texan. "This is something like a cigar."

Cooper took the weed, lighted it, and puffed three or four times.

"Yes," he asserted, "this is something like a cigar. What is it?" New Orleans Lawyer and Banker.

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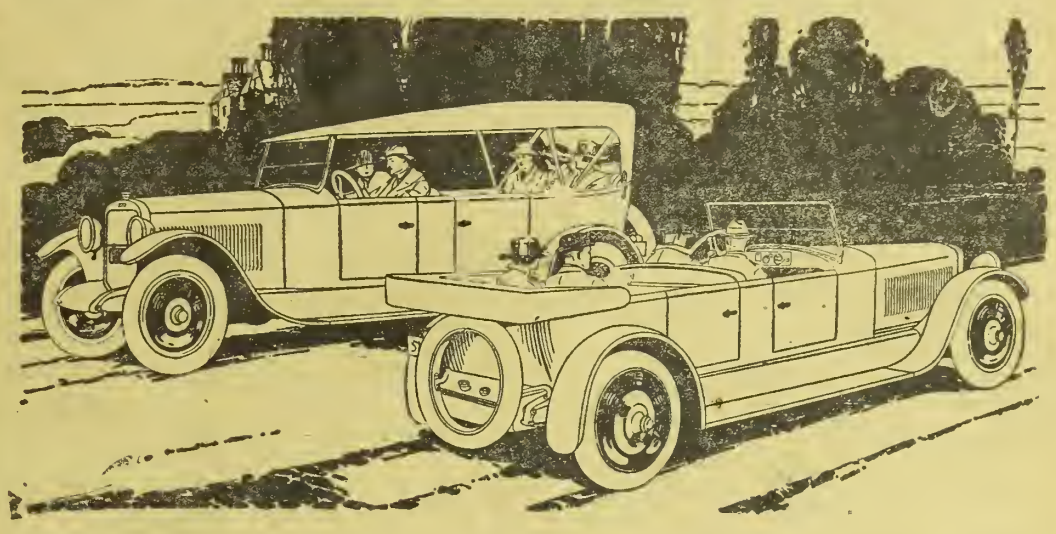

Two Great Chandlers Right Out In Front

HERE are two Chandler Six models which the big and constantly expanding Chandler factory production has never been able to build in volume that could supply the demand of discriminating motor car purchasers. They are the Chandler Six Touring Car and Dispatch Car, the former a big, handsome, roomy, comfortable, real seven-passenger car; and the latter a trim, smaller car, suggestive in its appearance of all the good things of outdoor life. The Dispatch Car has a touch of snappy style in its clean lines, and is strikingly finished in the beautiful Chandler Rainbow Blue. It seats four persons in restful comfort.

Both the Chandler Six Touring and Dispatch Cars are mounted on the same standard Chandler chassis, developed, through seven years of manufacture, to a surpassing point of excellence and famous for its really marvelous motor. The Chandler Car is priced much lower than other cars which may, perhaps, compare with it.

If you want your new Chandler this Spring, place your order now

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Seven-Passenger Touring Car, $1895 *Four-Passenger Roadster, $1895*
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Seven-Passenger Sedan, $2895 *Four-Passenger Coupe $2795* *Limousine, $3395*
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CHANDLER MOTOR CAR COMPANY
CLEVELAND, OHIO

Better Pay for Our Agricultural Workers.

Comment appearing in The Progressive Farmer on the subject of "Better Pay for Agricultural Workers" fits conditions in the west so well that it is reproduced below. The editorial was written by Dr. Tait Butler formerly on the faculty of Kansas State Agricultural College, who speaks from knowledge of conditions and whose suggestions therefore have unusual weight:

DR. TAIT BUTLER.

One of the conditions now most seriously threatening the progressive development of Southern agriculture is the inadequate salaries paid official agricultural workers, as compared with the salaries paid by positions in the commercial world requiring similar knowledge and ability.

The professional teacher and the scientific investigator in all countries and for all time have been notoriously underpaid, considering the training and ability required and the exacting nature of their work. In the past the social, educational and other living conditions of the college professor and experiment station investigator and their absorbing interest in their work have seemed sufficient compensations, and have attracted and held the brightest of those educated in agricultural lines to college and experiment station work. But when the cost of living arose to the point where even by their modest habits of living it became impossible to make the salaries paid meet necessary expenses, and the expansion of all lines of commercial business offered attractive opportunities to all educated men, the exodus from the colleges and stations into commercial lines become a serious menace to all lines of agricultural work.

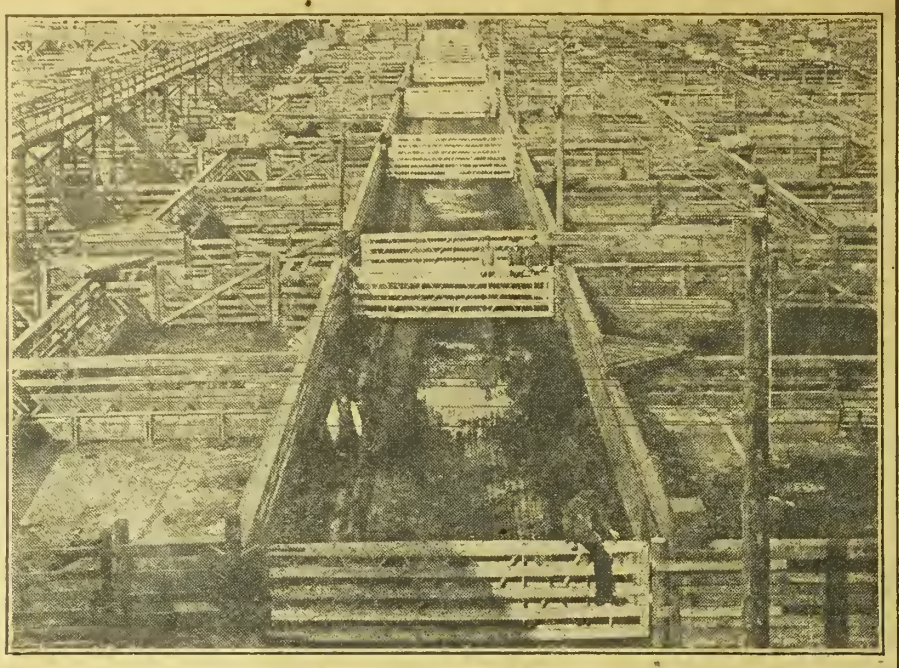
A young man takes the salary offered, but if he remains long enough to become most efficient in his work, just then, if he has surrounded himself with a family, he must begin thinking about the revenues necessary to keep and educate this family. The constant changing w hich these conditions cause among the agricultural workers, especially in experiment station work, not only retards progress but in many cases actually nullifies much of the work of our stations.

The small salaries now paid agricultural workers in Federal and state work is the greatest menace to the future of our agricultural college, experiment station and extension work. But while present conditions make this problem especially acute at this time, they also offer during these times of prosperity the most favorable opportunity for raising the salaries of such workers to a living wage.

Something must be done that will lead to interesting the business leaders of this country in a movement for placing the salaries of agricultural workers and in fact the whole teaching profession on a better basis.

The present methods, however, of employing, promoting, and retaining both efficient and inefficient men in these lines of work are somewhat responsible for the low salaries paid. First, men are hired for teaching agriculture on their training in the agricultural sciences or their knowledge, with often little or no regard for their ability to teach or without regard to their special aptitude for research which are inborn faculties. Second, when a man does an especially good piece of research work or proves an excellent teacher the only way of rewarding him with better pay, even with a living wage, is to transfer him to some executive position for which he may or may not be fitted. In fact, he usually is not fitted for executive work if he is an especially good investigator. Moreover, executive ability is really more common than excellence in research and instead of being better paid this executive work is entitled to less pay. There should be possibilities of rewarding a man, while keeping him in the field where he has demonstrated his ability, without changing him to what is to him an untried field where success is more or less uncertain. Third, the habit of retaining inefficient men year after year, when they have proved their inefficiency, is very largely responsible for the low salaries now paid agricultural workers. If the efficient are to be paid salaries more in line with the salaries paid for the same ability, industry and honesty in commercial lines, then the inefficient must be promptly discharged or shifted to other positions, just as occurs in commercial life.

Let Western Farm Life Service Bureau help solve your farming problems. All questions promptly answered by letter.



The Master Farm Gates installed at Denver Union Stockyards.

A Colorado Farmer's Invention.

They say necessity is the mother of invention and that's as true as it ever was. A Colorado ranchman who had experienced the usual trouble with farm gates got his wits to working and evolved what is known as the Master Farm Gate. He needed a gate that would not sag, that had strength enough to resist hard usage, that would open both ways, that would last more than a season and that would not injure stock by wire cutting. Other ranchmen and farmers had been up against the same need year after year and they all said: "There is no such gate; gates were made to annoy and get out of order; they are a necessary evil."

Not so this farmer. He tried out his invention near Monte Vista and it worked so well that a company was formed which is now putting the patented idea on the market. Recently a lot of these gates were hung in the Stock Yards at Denver, where the main alley was widened to 20 feet. Master gates of 18 foot width were put in, as these were just the type for such a wide span, where constant use requires durability and ease of operation.

The art of gate making is not new by any means, but in the past it has been found that the wider the opening the heavier and more massive the gate, the harder the operation and the greater the frequency of repairs and replacements. This is overcome by the material out of which the Master Gate is built, namely white spruce, the same wood that is used in aeroplane building. The secret of its strength lies in the manner of construction. There are seven ¾x3½ inch panels to a side; these panels are bow shaped with crossed and upright braces between. The paneled bow construction gives strength and resiliency. It is hung on patented hinges and, as above stated, swings both ways. The latch fastens top and bottom with one motion. To make the gate impervious to weathering it is dipped in a specially prepared black paint, which is penetration proof against sun or rain. It is made in 12, 14 and 16 foot lengths at the factory, which is located in Denver.

Among the big ranches near Denver that are equipped with the Master gate are Perry Park Ranch, at Larkspur; Ken Caryl Ranch near Platte Canon; the Mac Rose Ranch, University Ranch and Edgewater Ranch. Farms and ranches in Colorado, New Mexico, Utah, Idaho, Wyoming, Nebraska and Iowa are now equipped with Master gates.

Wheat Growers Organize.

Idaho wheat growers are organizing for the purpose of marketing their grain to better advantage. Up to April 1 eighty meetings had been held in that state and the plan of organization was favorably received by the growers at each point. The plan is modeled after that adopted by the California fruit growers and is contingent upon the signing up of a minimum of fifteen million bushels of wheat. Idaho expects to join Washington and Oregon in a tri-state organization which will control the marketing of the bulk of the wheat grown in the Pacific Northwest. The wheat organizers have taken the matter up with Farm Bureaus in all wheat growing districts and they expect to work through that organization in getting the producers together.

Forget all gossip as soon as you hear it, or before.

Lee Union-Alls

The Most Popular Work Garment in America

Don't wait another day before enjoying the comfort, convenience and economy of LEE UNION-ALLS. It is the ideal work suit for farmers—warm in winter, cool in summer—does away with the strains and pulls caused by suspenders and belts and protects your body from chaff and dirt. Moreover LEE UNION-ALLS are the best made work garments ever manufactured.

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Remember

IT CAN'T BE A UNION-ALL IF IT ISN'T A LEE

Farm Bureaus And Marketing.

CHARLES L. HOVER, Longmont, Colo., in The Breeder's Gazette.

The article by "C. L. H." in the Feb. 12 issue is most timely. It brings up the point as to whether the marketing of farm products and activities along that line are wise undertakings for farm bureaus. Incidentally it raises the point as to what the functions of farm bureaus really are.

These matters, I presume, are being discussed all over the country as they are here in Colorado. Out of it all in the fullness of time will come some practical, sensible, rational settlement. One year ago Colorado organized its state farm bureau. As things stand now it seems to be the generally accepted principle that farm bureaus, county and state, should avoid political propaganda, and the commercializing of their work.

There are good reasons for this. If we go back to the beginning of farm bureaus, we find that their purpose was crop and livestock improvement, better farming and better farm management. They desire, in short, to promote efficiency in carrying on farming processes. That, I believe, was the motive of the framers of the Smith-Lever Act. That was the understanding of the members of Congress when they discussed and voted on the measure. It was the understanding of President Wilson when he signed the bill, and moreover it was the understanding of the farmer himself, or at least he acted upon this principle, when he chose his county agent. For almost if not entirely without exception county agents have been selected for their fitness as agricultural experts having practical as well as theoretical knowledge of farming, and practically in no case for their business capacity. The Smith-Lever Act authorizes no use of the funds it appropriates save for farm and home economic demonstrational work, which can only by a stretch of the imagination, include marketing.

It may be claimed that the whole system of farm bureaus has been built up around the idea that good farming and good farm management always pay, no matter what the prices of farm products are, and that poor farming and poor farm management never pay. This theory is economically sound. It is a fundamental from which we must not part in these bewildering times.

Farm bureaus should not be disturbed in their efforts with this fundamental truth uppermost. They are organized for this work and no other. This is by no means belittling the marketing problem. It is holding an organization to the purposes for which it was organized, and discouraging it from undertaking things for which it was not organized. We are all witnesses to the efficiency of a dual-purpose animal created by nature, but there are few if any of us who have knowledge of an efficient dual-purpose organization created by human nature. We have records of societies organized for religious purposes dabbling in politics ,with the result that they have made a mess of both.

Those who are insistent upon taking up the marketing problem as it affects agriculture should not paralyze, as they surely will if they persist in burdening farm bureaus with marketing activities, the efficiency of farm bureaus in their legitimate work. Much better would it be if they create as a running mate, so to speak, an organization peculiarly fitted for solving the problems of marketing, and to which marketing problems as they affect rural development could be confined.

Better farming and better farm management will ever be a rural problem, and real work in a national way along this line will always be a tremendous undertaking. There is no room in farm bureau work for sordid motives. It should be undertaken for the good of agriculture, and only as we are connected with agriculture should the personal element come in. Wherever agriculture is practiced, wherever the soil is tilled, there the work of the farm bureau should go, no matter whether the owner is a member or a non-member of the bureau. It is primarily agriculture that we should be interested in as members of a farm bureau, and only secondarily personalities.

The situation is different in marketing. It is hard to treat marketing from an impersonal point of view. It is work fully as tremendous as farm bureau work. It calls for a specially organized body. But first, what do we mean by marketing? Do we mean the control of prices? If we do we are going to follow in the ways of labor leaders and capitalists. Have we not by this products wherever practical, then it is possible that we shall have the assistance of government and the good-will of all classes in working out these problems. But the point now is that we must know what the American farmer means by marketing, and until we come to a clear understanding of this matter we cannot organize intelligently and our successes will be mixed with many failures.

If we solve our marketing problems with due consideration for the welfare time ample proof that both labor and capital in their attitude to the public are wrong? Do we, as farmers, deliberately wish to make this same mistake? On the other hand, if by marketing we mean the economic distribution of raw food and fabric materials along with co-operative efforts in changing these raw materials into finished of all classes we shall let supply and demand take their natural course in determining prices. We shall work to the end that distribution shall be as simple and economical as civilization will permit. More than likely we shall employ co-operative action in this work. We shall develop co-operative institutions for working up raw food and fabric materials whenever it proves practical for farmers to co-operate in such undertakings. Lastly, we shall employ patience and common sense in the task. These things cannot be done over night. They should not be done in a hurry. The program implies education not alone of the farmer but of the nation. As farmers we must know how to co-operate. We must know what co-operation means, the service and sacrifice it demands, before we can make headway in marketing. This can only be brought about by a slow process of evolution. We must, through our public educational institutions and through a willing compliance on the part of successful co-operative establishments, develop available human capacity schooled in the theory and the practice of co-operative business management before we can expect our co-operative establishments to avoid failure.

How can we believe that this tremenuous undertaking does not call for an organization of its own; how can we expect anything short of disaster to farm bureau work and marketing if we persist in saddling such an undertaking upon an organiaztion not designed to undertake it? Such a program necessitates a national organization to establish and perpetuate a national marketing policy, but the actual business of marketing in its very nature must be the work of many interrelated co-operative institutions.

Let the farm bureaus function as they were organized to function. Create a national farm marketing organization to take care of an orderly and sane rural commercial development, and let both pieces of work be done with the welfare of civilization as our primary motive. Then we shall be doing something worth while.

A $5,000 Holstein Calf.

The Turkey Creek fancy stock farm owned by Spencer Penrose of this city has a world's record Holstein bull calf, born on March 2, which will be worth $5,000 cash at the age of seven weeks, according to an offer made by a prominent stock breeder in Nebraska.

The reason that this calf commands such a record price is that its mother is a world-record butterfat producer and its grandmother on the paternal side of the family is also a world-record milker. The average of the individual records of these two cows is 44.43 pounds of butter and 639.60 pounds of milk in seven days, and 168.75 pounds of butter and 2743.8 pounds of milk in 30 days. No other two cows in the world can show such a high record.—El Paso County Democrat.

The Notable New Six

IT'S the Cleveland Six. Not really new, either, for the factory began deliveries last Summer and since then the Cleveland has gone out over the country into the hands of thousands of owners. And these owners say they are delighted with it. There is every good reason why they should be delighted with it. For the Cleveland Six is really an extraordinary car.

We cannot tell you how good the Cleveland Six is. You must ride in it and drive it to know.

This experience will convince you of the power and pick-up and speed and flexibility of this exclusive Cleveland-built motor.

It will convince you of the comfort of the car, contributed to so much by the low underslung spring construction and the wide soft seat cushions.

You will be amazed at the ease of handling your Cleveland, how lightly it steers and shifts, and at the instant positive action of its brakes.

There isn't any other light car that will give you so much of all that you wish, and at such a fair price.

Touring Car (Five Passengers)	$1385	Roadster (Three Passengers)	$1385
Sedan (Five Passengers)	$2195	Coupe (Four Passengers)	$2195

(Prices F. O. B. Cleveland)

There are Cleveland Six dealers in more than 1500 cities and towns. There is one where you live, or nearby. Arrange to see the Cleveland. Catalogue mailed on request.

CLEVELAND AUTOMOBILE CO., CLEVELAND, OHIO

$1385

Witch's Island

BY W-T-NICHOLS

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CHAPTER XXV.

Perham's Great Speculation.

If my nerve failed, Grayson's was proof. He put the plate back in the box, folded his arms, and faced Abels.

"May I inquire the cause of your special interest in these things?" said he. "Producer yourself? Or consumer? Or destroyer?"

"The last." Abels's tone was rasping.

Grayson nodded. "That would have been my guess. Something in a glorified detective line, perhaps?"

"Never mind the line. I've authority."

"To destroy these plates? Chuck 'em overboard, for example?"

"To deliver them to high officials, who will see they're never put to use."

"Delivering them as trophies of your bow and spear(modernized into that forty-odd caliber of yours?"

Abels frowned. "This is no joke. Treat it seriously."

"With you there," said Grayson calmly. "I'll be as serious as you please. And, to begin with, I'll state as solemnly as may be that neither Scott nor I happen to be in the counterfeiting line. We've no intention of making use of this stuff—illegal use. How, though, can we be sure you won't? You've got credentials?"

"I've got the drop!"

"Granted. That's an extra-legal advantage, however. And see here, Abels!" Grayson's manner changed and he smiled. "You've stood by us lately when we needed help, and needed it badly. I don't forget that, and I don't intend to forget it. Show your authority—that's the first step to agreement."

"You're American citizens, both of you. As good citizens you will not hesitate to obey me."

"As a representative of the United States Government?"

"That and more. Call it I'm in the interest of half the nations."

"You've a wholesale commission then?"

"Something very like it."

Grayson's air was as far removed from the belligerent as from the cringing. "If you base your demand on that gun, your position's entirely logical. If there's law for it, you ought to show a warrant. You tell us these are plates for counterfeits. I'm not gainsaying you, but I'm open to proof. On the one hand Scott and I, as the discoverers, feel we deserve whatever return there ought to be. On the other hand, we've fought alongside of you, and we've no wish to fight against you. That's our case in a nutshell."

Now Abels had not levelled his pistol theatrically at the head of either of us, but had been content to hold it ready to swing into position, so to speak, and Mrs. Vincent had followed his example. At Grayson's words both weapons sank a trifle.

"If you must have my case, in brief, here it is," said Abels. "The man who owned this boat—Perham—had planned a magnificent counterfeiting coup. He had been preparing it for years. For months, anyway, we had been on his track, in half a dozen countries of Europe. He hired the highest grade criminal talent wherever he found it, and paid it royally. He was going in for bonds as well as money. He'd have flooded two continents. Why, in that box are plates of bogus securities and notes of all the Americas, North, Central and South!"

"Ah!" Grayson's tone might mean much or little, I couldn't tell which.

Abels warmed to his theme. "He'd mapped his moves like a German campaign. Everything was arranged. He had the goods; he had the customers; he had the mummies to use in smuggling consignments through custom houses, if necessary—specimens for museums, scientific exhibits, innocuous and unlikely to rouse suspicion. You understand?"

"Yes—better than I understand what switched a man of his type upon such a line—a man of fortune, standing, reputation."

"Most of the fortune had melted, and he was ready to risk the other things." Abels spoke impatiently, as if eager to turn from causes to results. "Then he drew a queer distinction between obligations to individuals and obligations to society. Stickler to pay personal debts, and at the same time ready to swindle the public—find 'em that way sometimes. All we've gleaned about his private life bears out the theory."

"And a lot of the gleaning has been done by you—or for you right here on Witch's Island," I put in. "You've had able assistance. That lady now——?"

"My wife; we often work together," said he.

"Great team!" I told him. "Only I'd like you to know this news doesn't burst upon me as an undreamed of possibility."

Mrs. Vincent frowned, and there was temper in her blue eyes, but Abels held the floor.

"My business has lain not with Perham, the reputable citizen, but with Perham, master crook. We've been after him for months, as I've said. We found his trail abroad. We were up with him at Havana. There we put one of our agents aboard his yacht. This man was on her when she sailed on her last voyage."

"One of the crew?" asked Grayson.

"It's head—the captain. Perham had got rid of his old skipper; our man happened along providentially."

Grayson bent forward in his earnestness. "Abels, if you knew so much of this crooked affair, and if you could palm one of your people as Perham's sailing master, why didn't you land your prize then and there?"

"For the simplest reason in the world. We believed the plates were on the yacht. Our man believed it, but had no notion where they were hidden. A premature move, and they'd have been slipped overboard. It was wiser to let the game go on. Our man was picking up bits of information. He may have learned more after they left Havana—of course, though, that's pure conjecture in view of what happened."

"I think he did learn more," said Grayed a deal—at cost of his life. Perham son gravely. "My idea is that he learnshot him."

A moment Abels stared at my friend. "Perham shot him! Why have you never told this before?"

"Because," Grayson answered, "I saw no good ground for doing so. Perham was dead, the yacht's captain was dead. It was reasonable to suppose both were drowned, but in fact, both were shot—each by the other, I believe. I'd figured it out there might have been a quarrel following the wreck—her navigator had put her on the rocks, remember. Now, from what you tell me, I'm sure there was such a quarrel. Your man wrecked her deliberately. Perham charged him with it, then came the pistol practice—that will have been the way of it. We'll surmise the crew had taken to the boats, which must have been swamped."

Abels nodded. "So it may have been."

"So it must have been," Grayson insisted. "Given more discoveries by your man; given, too, fear on his part that there was only one way for him, singlehanded, to checkmate Perham's elaborate plans—what more do you need to understand his course in piling her up?"

"It may have been so," Ables repeated.

Grayson took a new tack. "Considering your persistence in the pursuit, didn't youd elay remarkably your coming here fora n investigation, on the spot?"

"Reports of the wreck were misleading. We were told that nothing was left of the yacht above water, and that wreckers had given up all thought of salvage. So I was detailed to another line of inquiry."

"To dog Perham's daughter?"

"To keep her under surveillance. Not that she was suspected of guilty knowledge of the case, but—well, you can't neglect any possibilities in an affair of this sort. She slipped away from home very quietly, but we were only a few days behind her at St. Thomas. There her mission was common talk of the waterfront."

"As we've had cause to know!" quoth Grayson.

Abels smiled in superior fashion. "Yes, it was an easy trail, made easier still by a bit of luck. Chap who owned the Fair Lilian came along—sick of cruising—glad to charter his boat for a month. I snapped him up, changed crew in part—oh, yes, I had some of my operatives along."

Grayson smiled, too, but mirthlessly. "I noticed they knew what to do in a scrap."

"They're better fighters than mariners," Abels went on. "We had our troubles in the blow, though, after all, it gave excuse to run in here. Before that we'd looked you over, you know—rather imperfectly, to be sure—little visit in the dark. Still, it yielded a fair idea of your force."

Up went my hand to the back of my head. "Good Lord!" said I. "So it was you, was it? It's not your fault I haven't a broken skull."

"Count it you got off easily," he told me.

"You've a quaint notion of the English language," I protested.

"Oh, that's ancient history!" said Grayson. "The doctor made a night reconnaissance, went off of his yacht, and was caught in the blow. Then he improved the chance to make port, flying a flag of distress. By the way, Doctor, did you really lose a boat's crew, or was that an artistically imaginative extra touch?"

Abels grinned. "I didn't file affidavit with the yarn."

"True for you! Not that it matters now. You're here, and however you got 'em you hold the winning cards."

So saying, my friend turned his back on the rest of us and moved away, with such complete and bland disregard of Abels's big revolver that its owner, after an instant's hesitation, thrust it into a pocket. As for Mrs. Vincent, her pistol hand dropped to her side, but her blue eyes lost none of their alertness.

"Abels," Grayson said after a pause,

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Build that concrete foundation, watering tank, walk, steps, or cellar with the "Elmco" Concrete Mixer. It will pay for itself on your first job. If you do your own concrete work it will be done right—no cheating—no cheap mixing.

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Please send me your free catalog, telling how to mix good concrete and mortar, also describing the "Elmco" Concrete Mixer.

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"I saw 10 ranch plants in one day— but I didn't buy 9 of them"

"I can't write an ad, but at least I'll make out better now than I could have done the other day. Then I was just back from our county fair and fed up on peanuts, pink lemonade and lighting plants. I looked at a dozen plants and finally bought one. Whether luck or plain, ordinary horse-sense was my guide, I think I got a good one. It's a Western Electric, and even if you don't agree with me, you may find the story of what I did and why I did it helpful." Wm. E. Schultz

Editor's Note: Mr. Schultz is a rancher located near Bartlett, Ill.

Maybe my outfit wouldn't suit you

"Now of course you have your own ideas on what an engine or a generator should do. So have I. It's a pretty high standard we ranchers have too. I applied it without fear or favor to the plants on exhibit, and I didn't make a choice till the salesman had proved to me that his particular outfit could take care of the stiff demands I have to make on it. I need a powerful plant and found it in a Western Electric.

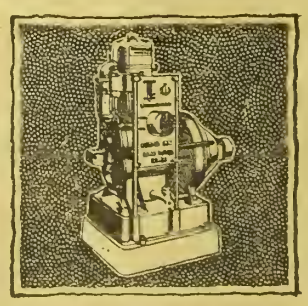
Power—a bread and butter proposition

"After all, power is what ranchers are most interested in, because it means the saving of time, labor and money. The light goes along without saying.

"Experience with more than one engine had taught me a lesson that doubtless you learned long ago. An electric lighting plant isn't worth bothering with unless the engine can furnish extra pulley power at the same time it is charging the batteries. For the sake of a few lights a man can't afford to shut down his ranch.

"So I held out for an engine that would score on this point. In an actual test I saw the pulley connected to a line shaft and running a churn, a separator and a washing machine. All this while the batteries were charging. What is more, I can switch the generator off and deliver all the engine power to the pulley.

"But when the salesman started to talk to me about what he called 'portable power,' I thought that was going a bit too far. Then he showed me what he meant—a general utility motor that you carry around the place. Just connect it up to any outlet or lamp socket, and it's ready to run your feed mixer, your grinder, your corn sheller and any other piece of machinery you otherwise would have to turn by hand. I'm not a fancy rancher and I don't go in for frills—but a man can steal a harrow from me any night if he only leaves me my utility motor.



But how about fuel and lubrication?

"The answer for me is a valve in head engine with automatic lubrication. Air cooled and running at constant speed under any load. An engine that burns kerosene but starts on gas and runs at first on a mixture of gas and kerosene. Then this changes to all kerosene as soon as the engine gets heated up enough to take care of the heavier fuel.

How long do the batteries last?

was my first and last question. And I kept on asking it till I found somebody who could prove to me that his method of charging really meant long life to the batteries.

"'The charge flows in without straining the batteries,' he said, 'because as they fill the flow of current gradually slacks up, till at last it is just trickling in gently and easily. No stress, no high pressure, no overflowing and loss of current. It's an automatic regulation known as the tapering charge.'

"And I feel satisfied that this is what will settle my battery troubles once and for all."

Note: The automatic regulation of battery charge, which has proved so successful for Mr. Schultz, makes the Western Electric Power and Light Outfit strongest at its most vital point.

Western Electric Power & Light

If you are interested in what Mr. Schultz has to say about the Western Electric Power and Light Outfit, just write for booklet WL-3, Western Electric Company, at Denver or Salt Lake City.

Makes the Battery last longer

"I suppose this is a big thing for you, professionally."

"My top-notch case to date."

"You'll be for taking that stuff back to the States?"

"Naturally!"

"What will be done with it?"

"I shall deliver it to the proper authorities. Eventually the plates will be destroyed."

"Umph!" said Grayson, and strolled leisurely to the platform where the diver's pump was set up. His manner was abstracted, and his hand strayed mechanically over the mechanism. An odd notion laid hold upon me; perhaps Grayson would like a diversion which would permit him to do his thinking undisturbed.

"There'll be more or less of a to-do, Doctor, won't there?" I queried.

Abels smiled, a bit self-consciously, "We're not advertisers, as a rule, but when a thing's too big for a bushel to hide, how are you going to cut off its light altogether?"

"That is, there'll be talk in the papers?"

"Such things happen."

"Description of the items in the haul, and all about the circumstances, eh?"

"Very likely."

"And the people who figure in the matter?"

"Oh, more or less."

Grayson came back to us. His hands were deep in his pockets, and he slouched abominably.

"What's the use of all that—to you?" he drawled. "The head men don't need press prodding to recognize your services, do they? If you took an axe and hacked those plates to pieces, and then went home and told what you had done, your report would be accepted, wouldn't it?"

"I flatter myself it would," said Abels.

"Only there'd be less cause for publicity?"

"Undoubtedly."

Grayson's hands came out of his pockets with a jerk. He caught up the box of plates, heavy though it was, strode to the side, dropped it, splashing mightily, into the sea.

Quick as he had been, he achieved the feat by the barest of margins. Abels was caught unaware, but Mrs. Vincent's pistol cracked sharply. But another lucky impulse had been mine, and I had lunged against her arm as she drew trigger. More, I caught the smooth, firm wrist, and prevented a second shot.

By this time Abels had his gun out, but Grayson, his arms folded, was confronting him tranquilly.

"You can blaze away, if you will," my partner told him, "but why should you? Think it over! Better not waste any witnesses of the destruction of the plates. Oh, yes; they're as good as destroyed. In twenty feet of water. Our diving machine is put out of commission. Sand'll shift and cover the box long before you can get another. Yes, think it over, Abels! See if it's worth bloodshed to have that girl yonder put to merciless notoriety and shame as the daughter of the century's king counterfeiter. You'll get your reward just the same, we've your own word for that. And there's no reason why the world at large should know any more about that girl's father than she herself knows about him—that he was an honest man, who died an honest death. It'll be as well for the world and a lot better for her to go on thinking so."

Mrs. Vincent had been struggling viciously, and now she began to shriek hysterically. Abels laid a hand upon her arm.

"Let her go," he said to me. "She's a bit upset by the sulddenness of this twist. And I'm not so clear myself as I might be as to the proper proceeding."

"Anyway, there'll be no shooting!" said I with a touch of cheerfulness.

Abels swore deep in his throat, and jammed the pistol into his pocket. "No," he growled. "It's too late for that. I'd a right to shoot, and I ought to have shot, but I let the psychological moment pass. I don't forgive the trick, and I don't pretend to; but damn it, man! I can't butcher a chap for making a bluff and catching me on the play."

CHAPTER XXVI.

The Romance of the Wreck of the "Zenobia."

In this world, men and women continually find themselves doing things vastly against their will and faring not so badly thereby, after all.

So itw as with us who sailed from Witch's Island on the Fair Lillan. Had there been another boat on which to beg, buy, or steal passage, Grayson and I would not have troubled Abels's hospitality, which scarcely would have been affered under such conditions. Once aboard the yacht, however, we had to maintain terms of civility. Abels at bottom was a decent chap, not given to grudges, and he treated us, on the whole handsomely. In this, I suspect, he was influenced in no slight degree by Edith Perham.

To the girl, at least, the pilgrimage to the wreck of the Zenobia had brought full reward, in proofs that in his business affairs her father had been to the last a man of probity and honor.

Of the other phase of his story she had no inkling. Grayson's lips were sealed, and so were mine. Abels was too good a fellow to breathe a word to disturb her filial trust. And with this trust confirmed, with the burden of doubt and uncertainty lifted from her, she was like a new creature. Daily we met an Edith Perham, of whose charm and graciousness, I, for one, had never dreamed. To me, then, she was a revelation, as she was to Abels; and as she was not, it may be to the keenly feminine wisdom of the lady of the eyes of baby blue.

Mrs. Vincent, clever as she was, had the hardest role to fil,; for it was still as Mrs. Vincent, sister of the doctor, that she sailed with us. I can not say that there was deliberate purpose in this, save as it seemed to us who were keeping the secret, the easiest course to address her as she had been addressed before Abels, it may be, had dropped her a hint to keep her claws sheathed, and she beamed upon us, and dimpled, and gave vent to little ecstasies quite in the old manner. She played the indulgent chaperon to perfection, and only now and then let that ugly glint impair the ingenuousness of her orbs of paling cerulean. Inasmuch as she, doubtless, hated Grayson and me, and had cause to envy Edith Perham's youth and bloom, she behaved, to my notion, with distinguished suavity.

Yet this little yachting voyage made so leisurely over summer seas, had a haunting sense of unreality. It was as if we were actors in a drama, upon which the curtain was about to fall. Close at hand was St. Thomas, and the parting of the ways. Abels and Mrs. Vincent would hasten back to the States; Edith Perham would have no cause to linger; my own leave was drawing to a close; Jose would drift among the islands; Hoban would travel in the train of his mistress. That left Grayson to be dealt with. He might drift, too, as Jose would drift, and as he himself had drifted for years. He deserved something better—but what was it to be? I might help him—a little. There was another who might help him far more, if—well, if a day dream of mine came true.

I was thinking it over, smoking a pipe far forward one evening, when he joined me. He had news to tell; Abels, who was of a speculative vein, had offered to buy our mummies. The amount he mentioned as payment would cover our expenses, give Jose a neat sum, and leave us with a few hundred dollars to divide.

"Accept," I counselled. "We'll more than break even—that's something."

"It's a good deal. It'll clear the path for me, Scott. I'm going back—north." He spoke in his quiet fashion, but with a note of resolution.

I seized his hand, and gripped it hard. "To stay, of course?"

"To try again, at least."

"If you try, you'll stick," said I stoutly.

"Proverbs about rolling stones which gather neither moss nor foundations to the contrary notwithstanding, eh?"

My glance strayed aft and rested on Edith Perham, esconced in a steamer chair. There was a fair moon that night, and I could see her distinctly.

"Rolling stones roll, I reckon," said I, "because there's no steadying, anchoring attraction to keep 'em in place."

He let the observation go unchallenged.

"Now, on the whole," I went on cheerfully, "this venture of ours is turning out well. What do men seek anyway, in this world? Health, wealth and happiness. I've found the first, I'm as hard as nails. I'm in better shape to strive for the second—as you'll be, if this yields you the third and best of all. You know trades enough——"

"True!" he said, impatiently. "It's not a bread and butter problem. I can make a living."

"If somebody will strangle your infernal wanderlust," I urged. "That's just what I'm driving at. And I've a notion the fireside slipper is the grand specific cure for the uneasy foot."

He laughed, but not convincingly. Again I glanced at Edith Perham. We were good friends, now, she and I, I could talk to her frankly and directly. And I would talk to her—if somebody else played the laggard.

"Grayson," said I, solemnly, "Grayson, I want this thing to end right. You're going back. That's fine! Told her yet?"

He started at the blunt query. "No, certainly not."

"Then I will," said I, and dodging the hand which caught at my arm, moved briskly away.

"Scott!" He didn't raise his voice, but it was shaking with consternation, yea, with panic. "Scott, come back! Come back!"

I disregarded command or entreaty—it was as much one as the other. It was no affair of mine, to be sure, and I was rushing in where angels might fear to tread. But there might be no other occasion like this, with the deck to ourselves and the blessed moonlight.

There was a chair beside Miss Perham's. Into it I dropped.

"Grayson's going to the States—to live," I blurted out. "What do you think of it?"

There was the barest of pauses. Then she said, "I think it a very wise decision."

The moon at best's an uncertain luminary, I couldn't be sure whether or not the girl's color heightened. But I recalled that darker night on Witch's Island, when Grayson's head had rested on her breast and I had speculated just how tightly her arms had been about him. Then, too, there had been his rescue of her, when she was a prisoner in the hut. As an honest well wisher for both of them. I would have given much to know what had been said and what had been done on that occasion, but the only witness was Hoban, and if Hoban was as faithful as the enduring rock, he could also be as uncommunicative.

"Grayson's a fine chap," I blundered on. "Deserves the best there is in life. But he's human; he'll strive the harder when the prize is the greater."

"The prize?" she repeated. "Mr. Scott, you remind me of a duty I've neglected. I've not paid for your services, I've not even offered to pay."

"Don't!" I told her in haste. "Don't—not now, anyway. I'm not talking dollars and cents.'

"But I must. I haven't told you before but—but there was more in the safe than the record I sought. There were securities, securities worth thousands of dollars, I think. And you justly are entitled to a share."

"Oh, settle that with Grayson," said I.

"But I infinitely prefer to settle it with you."

"You can't," I declared. "I won't even dsicuss it. Let's get back to our topic—and that's Grayson."

(Turn to Page 38.)

ESSEX MOTORS DETROIT USA

Tests That Proved Hudson Also Speak for Essex

And Essex Holds World's 50-Hour Endurance Record

Built by the same makers, Hudson's unequalled records also speak for Essex. They foretold performance never expected of a light car.

The prophecies now are facts.

An Essex stock chassis set the world's 50-hour endurance mark of 3,037 miles. That is officially certified by the American Automobile Association. And Essex holds the world mark of 1061 road miles in 24 hours. A stock touring car did that.

Local road, speedway and hill-climbing records in every section of the country are held by Essex. Scores of abusive tests have proved the endurance that 30,000 owners find in the daily service of their Essex cars.

Judge Essex Quality By the Hudson Standard

But it is not only in performance that Essex shows the same stamp of quality as Hudson. Its beauty of line, its luxury of appointment are the work of years of leadership in coach design.

See the care and completeness, even in the smallest details. Its riding comfort, its smooth, quiet running ease, with the suggestion of well-contained reserve power, are qualities comparable to the finest of high-priced cars, yet you gain all the advantages of the light weight type, more important today than ever.

Judge the Essex, not by the lightweight standards that you have known, but by the much more exacting requirements of the large, costly cars. Measure it by the highest standard of performance and fine quality, rather than by its moderate price.

You, too, will find the appeal that has won 30,000.

In all Hudson's unmatched records this important fact is clear—No ability is sacrificed in one direction to gain supremacy in another.

Hudson Records Prove Its All-Round Mastery

Hudson is the fleetest. Its stock car speed records have never been equaled. On the speedway its racing cars won more points than any other team ever gained.

But its speed means no forfeit of other qualities. For in official tests, the Super-Six has also out-performed all other types, in endurance, hill-climbing and acceleration. In every motor performance it has established leadership by unanswerable proofs.

Only a supreme advantage, that others cannot use, could account for such all-round dominance. Hudson has it in the Super-Six motor. It minimizes vibration to within 10 per cent of vanishing—nearer the ideal than any type we know.

In the same size motor the exclusive Super-Six principle added 72 per cent to power, and 80 per cent to efficiency. Endurance is practically doubled.

Hudson Motor Car Company, Detroit, Michigan.

(3055—173)

HUDSON SUPER SIX

Practical Work of E. R. Parsons

WHAT A DEPARTMENT CIRCULAR SAYS OF HIM.

NEW subscribers—and there are many of them—naturally have a curiosity to know who the men are that stand as authorities on the various subjects handled in these columns. Dry land farming is one of the most important matters of constant discussion, because we do our farming under semi-arid conditions, whether we irrigate our crops or not. Irrigation farmers make a mistake if they fail to read, or if they give only casual attention to articles headed "Dry Land Farming," because the principles underlying the system of agriculture in the plains and intermountain states are the same, whether the farmer uses only the natural rainfall, or depends upon an irrigation system to help him grow crops.

This brings us to the point of our authority on the subject of dry land agriculture. He is Mr. E. R. Parsons, who, after many years of farming in Douglas County, Colo., has established himself on a small rancho near San Diego, Calif., where he still follows dry land farming, both experimentally and on a crop raising scale, and puts in his leisure time writing for Western Farm Life. Mr. Parsons is the author of "Parsons on Dry Farming," an authoritative volume in which the principles underlying semi-arid agricultural practice are made plain. His services are available to our readers absolutely without cost. Letters of inquiry regarding dry land farming problems should be sent him care Western Farm Life, Denver. He gives these letters his personal attention and is always willing to discuss matters by letter with farmers who are seeking information regarding the handling of soils and crops under semi-arid conditions.

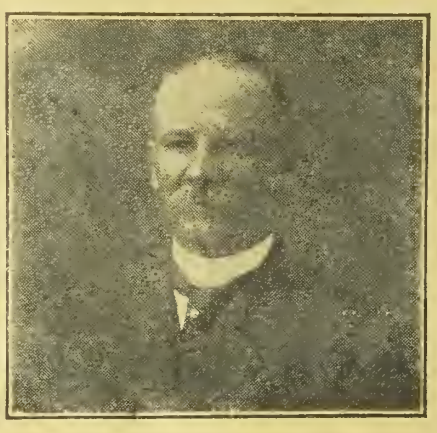
No one familiar with his work ever raises any question concerning his qualifications, but for the benefit of our new friends and more recent settlers in the Plains country, we wish to re-print what a noted authority on western agriculture says of him in an official publication of the United States Department of Agriculture. This authority is President William M. Jardine, of Kansas State Agricultural College, who spent many years in research, investigation and experimentation on semi-arid agricultural problems while connected with the department. In the course of his travels Doctor Jardine visited the farm of Mr. Parsons, about 25 miles southeast of Denver, and his official report of that visit is given in a Department Circular entitled "Notes on Dry Farming," from which we quote as follows:

"In Colorado I visited the dry farm of Mr. E. R. Parsons, located 23 miles southeast of Denver, on the Colorado and Southern Railroad, near Parker. Mr. Parsons is a very intelligent Englishman. He came to this country from the Transvaal, South Africa, where he had considerable experience in dry farming. He has a commercial orchard, which was set out in 1895. He says that the success obtained in producing crops without irrigation in eastern Colorado will depend on the man.

Mr. Parsons has been living on this farm since 1886, and is therefore familiar with the whole of eastern Colorado and thoroughly competent to speak intelligently on the conditions obtaining in this part of the Great Plains. He states positively (and his farm will bear him out in his statements), that there is no sane reason why the average farmer cannot succeed on the plains of Colorado if he will farm intelligently.

"The orchard is planted on land sloping to the north and west. The soil is very heavy clay. It is 300 to 500 feet to water. The annual precipitation averages about 13 to 15 inches. Last year the precipitation was 13 inches. Five to seven acres are planted to cherry trees of the varieties Montmorency and Morrello, which are now 10 years old, the first named being the most hardy and drouth resistant, and hence the preferable variety. Mr. Parsons has secured from this orchard on an average 1 crate of cherries to the tree during the past three years, except last year, when they were frozen down at the time all fruit was frozen in Colorado. He has about 120 trees planted to the acre and received $3 a crate for his cherries delivered in Denver. He also has about 4 acres of apple trees now bearing fruit. The 10-year-old trees are bearing about 4 bushels to the tree. He has more than 100 trees to the acre, but has since decided that this is too close planting, and in his new orchard, recently set out, the trees are placed about 40 feet apart, or 80 trees to the acre. The Jonathan, Rome Beauty, and Ben Davis seem to be the most profitable varieties to grow in this particular locality.

"In addition to his cherry and apple orchard, Mr. Parsons has 4 acres of



Mr. E. R. Parsons.

currant bushes of the London Market variety. These are planted 8 feet apart each way. During the past three seasons he has taken from each of the 5-year-old bushes 1 gallon of currants, realizing 15 cents a gallon. In 1906 Mr. Parsons realized in cash from his orchard $1,500. This was in addition to fruit necessary for home consumption and generous distribution among friends.

"Considerable alfalfa, corn and wheat are also grown by Mr. Parsons; in fact, everything necessary to feed his animals. His corn crib was filled with excellent corn, samples of which I brought to the Department. This last winter he fattened 100 head of beef steers on alfalfa grown on his farm without irrigation. He has harvested each year from 1½ to 2½ tons of excellent hay to the acre. Turkey Red wheat yielded him last year a little more than 40 bushels to the acre.

"During 1907 Mr. Parsons produced 40 bushels of corn to the acre on sod land that was plowed 9 inches deep. This is a little contrary to the general belief as to what can be done on sod land. The general practice is to plow sod as shallowly as possible, in order that it may rot the better during the summer. Mr. Parsons, however, in his twenty years' experience on a dry-land farm has obtained far better results by plowing the sod deeply.

"Early Ohio potatoes have been found most profitable for his section. The best yields are always obtained from this variety, planted about April 1.

"Mr. Parsons attributes his success to the thoroughness with which he cultivates his soil. He never plows his land less than 9 to 12 inches deep, whether it be sod or otherwise. This is usually done with a hand plow pulled by four horses."

Dr. Daly Takes in Partner.

A letter from Dr. F. T. Daly of Cambridge, Neb., brings news of Crusader Queen, the sensational gilt that won first in her class at the National Western show in January last. She was also Junior Champion Duroc sow in the show. She is a wonderful individual

Crusader Queen, Prize-Winning Duroc, Owned by Dr. F. T. Daly, Cambridge, Neb.

and Dr. Daly writes that she is developing better than ever.

Dr. Daly has disposed of a half interest in his herd to Prof. L. R. Thompson, a thorough hog man and a graduate of the University of Nebraska. They now have 80 spring pigs in their herd which are doing nicely.

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THIS $12 OFFICER SHOE
Hand sewed, First Grade. The factory price -- direct to you at only.... **$6.89**

The retail price of this shoe is 12.00. It is made of the best waterproof mahogany calf leather. Guaranteed to give the best wear. If these shoes are not just as we say, send them back. You don't lose a cent. — If you are sending money order or check, do not include postage. Pay only $6.89 for shoes. We pay postage. State size.
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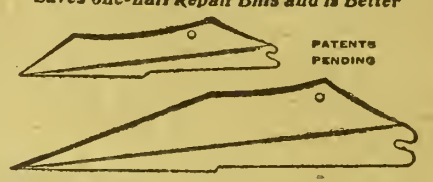

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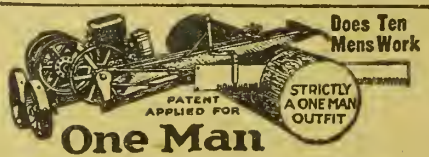
STRONG, RIGID AND DURABLE

Better than welded point in all soils and stony ground. Made of best steel. Fits all plows, right or left: Also HEAVY ROAD PLOW POINT. Double the service at one half the cost. No delays running to shop. Any one can apply them. Get ready, Mr. Farmer and Blacksmith—this is your friend. Dont delay. Right now is the time. Circulars and testimonials upon request.

MORGAN C. FRENCH, Craig, Colo.



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The Ottawa Log Saw falls trees or cuts off stumps level with ground. Saws up logs, cuts up branches, ice cutter, runs pump jack and other belt machinery. Mounted on wheels. Easy to move anywhere. 10 Year Guarantee. 30 Days Trial. Write for Free Book and Cash or Easy Terms.
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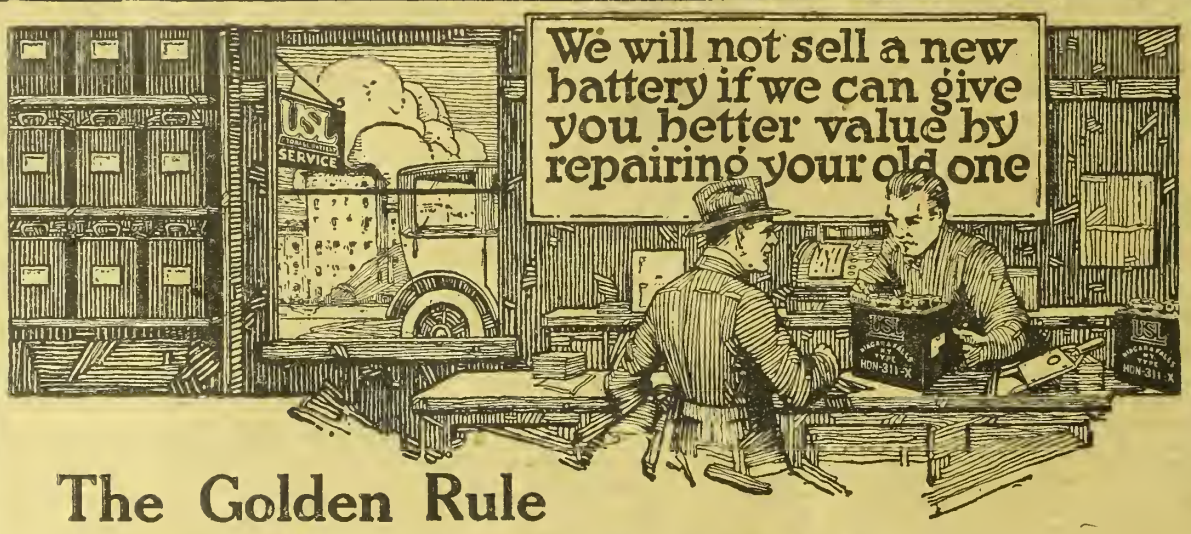


The Golden Rule —good *ethics* and good *business*

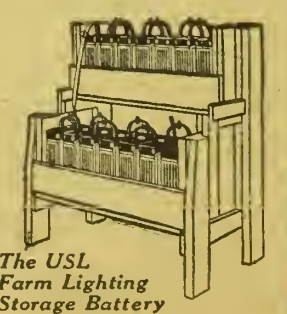
"YES, Sir! Success in *our* line isn't something we can *grab*—we must *build* it. We aim to prosper right here in this community of people who drive motor cars. We need their good-will.

"We don't try to unload a new battery on any man who comes in here with a lame one. No, Sir! We give our patrons exactly the kind of service they would want if they could know batteries inside and out as we do. That's the way we build up their good-will."

The USL Man does not assume that your battery is worn out just because it has *begun* to fail. He will open it up so you can see for yourself how the plates or separators look. If the plates are sound enough to warrant a repair, he will put your battery in first-class trim and guarantee his work for eight months, but he will *not* do this unless it is more economical for you than it would be to purchase a new battery.

But the day will finally come when your old battery has lasted as long as the best battery-skill can make it last. Then, and not before, the USL Man will sell you a new USL Battery—the one with the durable Machine-Pasted Plates, which comes from the factory "Dry-Charged" so that you get it factory-new.

So if you have trouble with your automobile battery and it needs either recharging or repairing, go to your nearest USL Man and enjoy *real* Golden Rule Service.



The USL Farm Lighting Storage Battery

U.S. Light & Heat Corporation, Niagara Falls, N.Y.

Likely there's one of our fifteen hundred service stations in your town. If there isn't, get the address of the handiest by dropping a post-card to the nearest of the following distributors:

THE AUTO STORAGE BATTERY CO., Denver, Colo.
THE MOTOR CAR EQUIPMENT CO., Salt Lake City, Utah.
EL PASO BATTERY & IGNITION CO., El Paso, Texas

Farmers' Congress at Loma.

ALFRED M. WILSON.

The annual "congress" of the farmers in the Loma district was held Friday, March 26, in the Methodist church at Loma. Loma itself is a small village in the lower end of the valley and eighteen miles west of the county seat, but the men of Loma and the surrounding district are big, enterprising farmers who do things. It is said that in the Loma district there are more energy and enterprise to the square inch than are to be found anywhere else in the Grand Valley. C. M. Clayton says so. A. E. Swartzlander says so. Fred Luph says so. C. B. Wilson says so. John Grosskop, the beet man, says so. The two Meads, A. C. and W. I., say so; and it must be so. The "congress" on the 26th, the second of its kind, was a demonstration of the fact.

Co-operation was the keynote of the "congress," of every talk that was made. Even the subject of "Good Roads" that was presented by E. W. Weckel of Fruita, a member of the executive committee of the Mesa County Farm Bureau, involved co-operation on the part of the farmers if what he had in mind was to be realized.

The big guns at the "congress" were L. P. McCann, the new county agent of Mesa county; V. C. James, the state organizer of the Farmers Educational and Co-operative Union, and Mr. Callicote, "the Grand Old Man" of the Farmers' Union.

The writer did not reach Loma in time to hear the two forenoon addresses, the one by County Agent McCann on "Co-operation on the Farm," nor that by B. A. Batt, of Fruita, on "Farmers' Co-operative Organizations." Everyone spoke well of these addresses, but especially of the fine impression the new county agent made.

In the afternoon two of the speakers failed to put in an appearance or an excuse for their absence. Their places were filled by Mr. Callicote and D. C. Sims, the manager of the Farmers' Union Co-operative Exchange, Grand Junction.

Mr. Callicote spoke on "Social Service—A Factor in Farm Life." He was at his best. He made a hit when he said: "I'm only a kid, 73 years old, but I'm going to live to be a hundred." His reference to the consolidated school, the emphasis he placed upon its importance and influence, naturally led him to speak of the importance of the right bringing up of children. They should have the best educational advantages their parents can give them. As a necessary part of their training to fit them to be useful citizens, they should be taught and encouraged to work on the farm; but he added, "Children should not be the breadwinners of the family." Branching off to immigration, Mr. Callicote made a very sensible suggestion. He would have the Congress of the United States to pass an immigration law that should authorize the purchase, by the government, of a farm of several thousand acres near New York, preferably in New Jersey, where immigrants on their arrival at Ellis Island, should be taken and given instruction in farming and the various trades and a course in constitutional government. Such a school, conducted by the government and at its own expense, would pay big dividends ultimately in enlightened citizenship.

V. C. James, the state organizer, spoke in a humorous vein on "Here and There in Farm Organizations." The way in which his subject was worded gave him great latitude, nor was he slow in availing himself of that latitude. Like the Ford in which he makes his cross-country runs, he rambled on, to the great amusement and satisfaction of the crowd, from one topic to another, from the great opportunity of the county agent who is an unmarried man, to an appeal to the women who had not already done so to enroll as members of the local.

Manager Sims spoke on "Unanimity in Co-operation." Mr. Sims made a splendid address, one of vision and inspiration. He tactfully suggested that farmers, in working out their own peculiar problems, should remember that there are others who also have rights.

The "congress' was held under the auspices of the Farmers' Union Local. The local was organized about two years ago. It has now a membership of 73, of whom twenty are women. The dinner served by the women at the noon hour was in every sense a feast of good things. Thomas Jefferson Putnam, in his perambulations over the Eastern Slope never met up with better pie and baked beans than were served on that occasion.

The musical feature was an important and enjoyable part of the program. The saxaphone solo by Bert Smith was indeed very good.

Jefferson Breeders Organize.

Another registered livestock breeders' association was formed in Colorado on March 27, when the Jefferson County breeders met at Golden. There were nearly forty breeders present. It is estimated that there are over 100 breeders of registered stock in this county. There was much interest in the plan among those present. From the attitude taken by them it is safe to say that they will have one of the strongest associations in the country.

It is their plan to take the advantage of their location as a livestock center and let the rest of the world know through publicity what they have in the way of livestock. Their plan of organization is similar to all of the other associations formed in the state. They have a few additional features that are of value. One of these is the provision made for the employment of a publicity expert to assist them in advertising their stock. This should be of great value in getting a campaign outlined in an effective way.

Jefferson county, situated as it is and being the home of so many breeders of wide reputation, has an excellent opportunity to become famous over the country as a livestock producing center. It is said that more tourists come to this county than to any other county in the state.

Practically every breed of livestock now in demand may be found on the farms of Jefferson county. The new association stands for fair dealing in the sale of stock and in their advertising of the same. Aside from this they stand for better livestock on every farm.

The county agriculturist, K. A. McCaskill, called the meeting and assisted in the organization. The officers chosen to act during the ensuing year are as follows: President, Harry Petrie, Golden; vice president, P. D. Willmarth, Evergreen; secretary-treasurer, C. W. Duke, Fort Logan. Directors—Beef cattle, R. P. Morris, Evergreen; dairy cattle, Carlos Hall, Morrison road; hogs, R. O. Parks, Edgewater; sheep, W. M. Wilson, Morrison; horses, J. Frank Smith, Littleton.

A meeting of the board of directors was called after the meeting of the general association to decide on a program of work for the coming year. It is the plan to conduct a combination sale. An advertising scheme was outlined which calls for the placing of large signs some 8x10 feet in size, along the main highways of the county. These are to call attention to the Jefferson County Breeders association. In addition to the large general signs, the association will order for the members desiring them, a small uniform sign to be used on the gate at the farm of each breeder, calling attention to the fact that they are members of the Jefferson County association and to the particular kind of stock they are breeding. This system of publicity will bring results in a large way and will be as effective as anything that can be done to advertise Jefferson county stock.—H. A. L.

Foster's Cows Do Well.

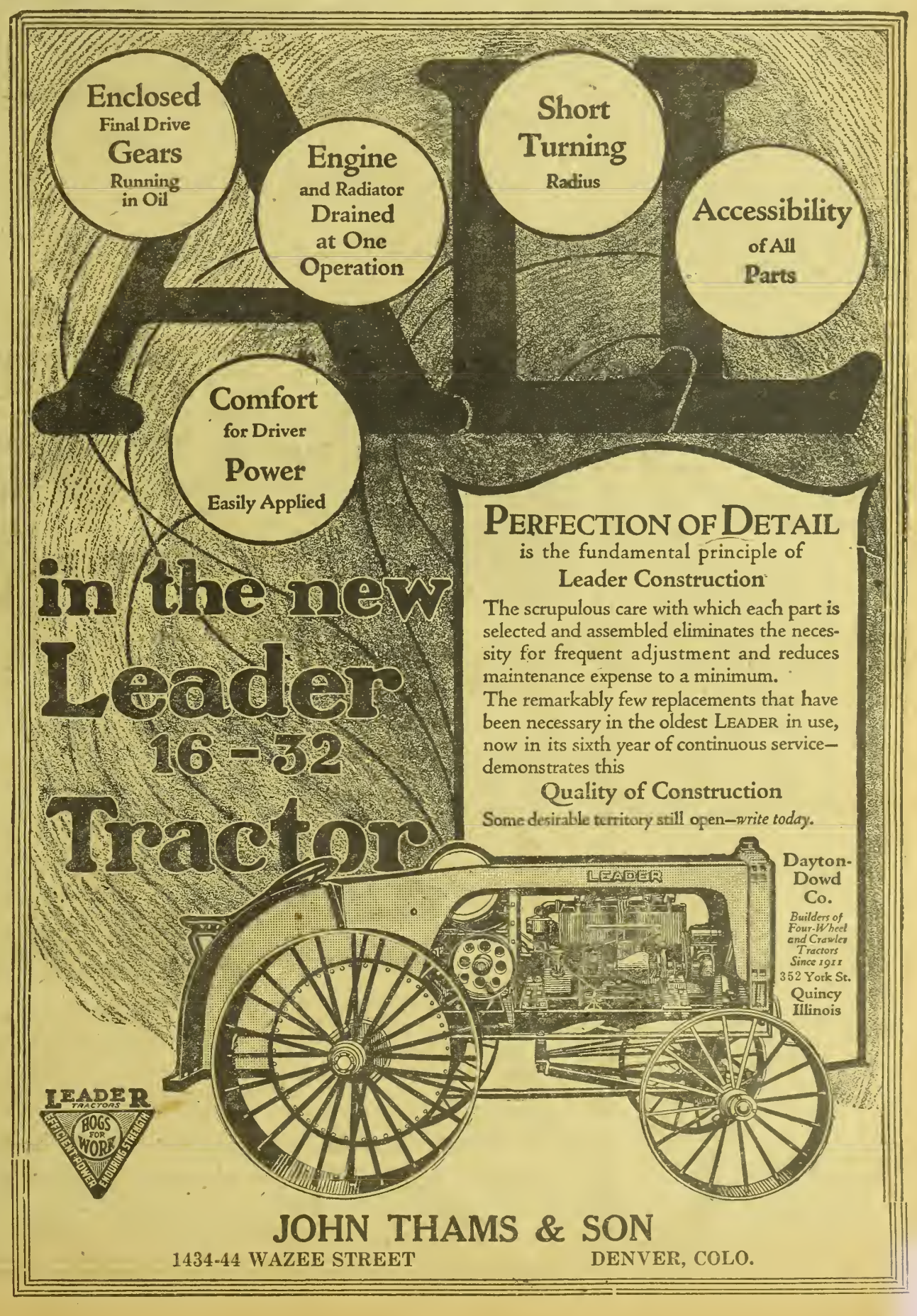
Mr. W. G. Foster of Englewood, Colo., has five cows that have passed the A. R. O. test in the past two weeks. Mr. Foster is a new breeder in the state and the showing made by his cows is commendable. Among the cows tested were three junior 2-year-olds with names and records as follows:

Colantha Bess Matina, 14 pounds; Sunny Flats Sadie Rag Apple, 15 lbs., and Gem Johanna Segis Pontiac, 16.5 lbs. A senior 3-year-old, Segis Korndyke De Kol Lass 2nd made 22 pounds of butter and produced 84½ lbs. of milk in a day.

Mr. Foster will be remembered as the man who purchased the son of King Segis Pontiac Count at the Donley & Hansen sale for $6,500.—H. A. L.

Forget the pinpricks, slights and trivial offenses incident to life.

Let Western Farm Life Service Bureau help solve your problems.



The Tubercular Test.

DR. L. S. DIJKSTRA.

How can tuberculosis in cattle be detected? Exterior symptoms indicating the existence of the disease are as follows: General run down condition, rough coat, cough (if some part of the breathing apparatus is attacked), enlargement of the lymph gland, etc. The exterior examination, however, is by no means an exact diagnosis indicating the existence of the disease, for any of the above symptoms, by which tuberculosis is suspected , are sometimes caused by some other sickness. It also frequently happens that animals apparently in the pink of condition are badly affected without causing the least suspicion. An exact diagnosis is possible only by the aid of special methods, such as the tuberculin test, which has proved to be the most satisfactory diagnostic agent known in determining the presence of tuberculosis.

What is tuberculosis? When Dr. Koch in 1882 discovered that this disease was caused by a germ, he also expected to find an agent of the germ that would have a curative effect upon the disease. For that purpose he isolated tubercle germs in a special fluid containing veal bouillon and a small amount of glycerin. This fluid was then placed in an incubator and kept at the temperature of the animal body for a period of six to eight weeks. The germs multiplied and the fluid became filled with tubercle germs and their products. When the necessary growth had been produced the fluid was heated sufficiently to kill the germs, and later it was well filtered so that all the germs were removed. This substance is the well known "tuberculin." Dr. Koch did not realize the results he anticipated, that is to have in this "tuberculin" a curative agent, but he found in it a dianostical agent, as it was observed that following the injection of tuberculosis patients with tuberculin, they showed a high temperature. This experiment led veterinarians to apply tuberculin to suspected animals with the same result.

Is tuberculosis infallible? From time to time questions have been submitted to me relative to the reliability of the test and in answer to these inquiries I can safely say that with the necessary precautions and the services of a competent man, this method detects the disease practically without fail. As exception I might mention that it does not detect the presence of the disease in a too recent infection, for instance after the first ten or thirty days of entrance in the body. Also, in cases where animals are too extensively infected. An ordinary sized dose of tuberculin on an advanced case of the disease will have slight effect where so much natural tuberculin is already in the system. Also if the tests are taken within too short intervals no reaction follows.

There are various methods of application of which only that officially used shall be described, namely: "The Subcutaneous Method." The technique of this is as follows: Cattle, which are to be submitted to the test, must be placed in a properly lighted and ventilated stable with sufficient litter and space to make them as comfortable as possible. If the animals are not accustomed to confinement they should be installed in quarters the evening prior to the test day. In case they are not used to grain, feed hay only and have plenty of fresh water at their disposal throughout the period of testing.

Animals suffering from other ailments, such as inflammation of the udders, catarrh, very fresh cows or springing calves, should not be given the test. Doubtful reactions may also result from testing in very cold or very hot weather; from cattle that have aborted, cows that are in the heat period, bad weather, mouldy and frozen food, fatigue, casual lesions, lameness. All these conditions the tester should take into consideration. If possible at least three temperatures should be taken before the injection of the tuberculin; one immediately before the injection—for instance 2 p. m., 5 p. m., and 7:30 p. m., giving the injection at 8 p. m.

Animals showing a temperature exceeding 103 degrees Fahrenheit should not be subjected to the test. The place of injection, preferably the side of the neck, should be disinfected with a 2 per cent solution of creosote. The hypodermic syringe and needles should be sterilized before using on a herd, the needle dipped in a 5 per cent carbolic solution for each injection.

The injection should be carried to the subcutaneous tissue just under the skin and not into the muscular tissue. Although the quantity of tuberculin given is determined by the age, weight and the findings revealed in physical examination, I generally use the following doses of diluted tuberculin:

For animals 3 months old, 1 cubic centimeter.

From 3 to 6 months old, 2 cubic centimeters.

From 6 to 9 months old, 2.5 cubic centimeters.

From 9 to 12 months old, 3 cubic centimeters.

From 1 to 2 years old, 4 cubic centimeters.

For 2 years and over, 5 cubic centimeters.

Diluted tuberculin over three days old should not be used. The date and the dilution degree are generally found on the label, together with directions for using. The reaction of tuberculin consists in a gradual rise of temperature beginning from the sixth to the eighteenth hour after injection and even later. If the animals are injected at 8 in the evening the first temperature should be taken the following morning at 4 o'clock and every two hours thereafter, until the twentieth hour after injection. The difference between the maximum temperature after injection and the temperature before injection may be from two to five degrees. Changes in habit and posture may often be observed accompanying a feverish attack, increased rate of pulse or respiration, depression, lack of appetite, defective rumination, muscle twitching, erection of the hair and diarrhea.

A rise of temperature of any animal on the second day should be recorded not only by the registering of one thermometer, but at least three, to avoid any possible error. A rise of two degrees F. or more above the maximum temperature prior to the injection of the tuberculin, or a temperature above 103.8 F. should be regarded as an indication of tuberculosis, provided the temperature shows the characteristic rainbow curve. Rises of one degree F. only should be considered as suspicious and such animals should be retested within ninety days with an increased dose of tuberculin.

What kills the tubercle bacilli outside or in the barn? Outdoors they are killed by the sunshine. In the barn and house also the sunshine, providing it does not have to penetrate dusty window glass. Open windows are most effective in annihilating the germs.

How long can the tubercle germ live outside the body? In water about 300 days and longer; in the field 450 days under favorable circumstances.

Can tuberculosis be eradicated? It can, but it takes three things—perseverance, sacrifice and money. A disease that is perhaps as old as mankind and universally spread is, of course, hard to root out, but as has been proved here in our accredited herds, it is possible with proper effort. It requires sacrifice, for instance when a man sees his best cow taken away, by which perhaps a whole generation is lost and finally

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Camels are sold everywhere in scientifically sealed packages of 20 cigarettes for 20 cents; or ten packages (200 cigarettes) in a glassine-paper-covered carton. We strongly recommend this carton for the home or office supply or when you travel.

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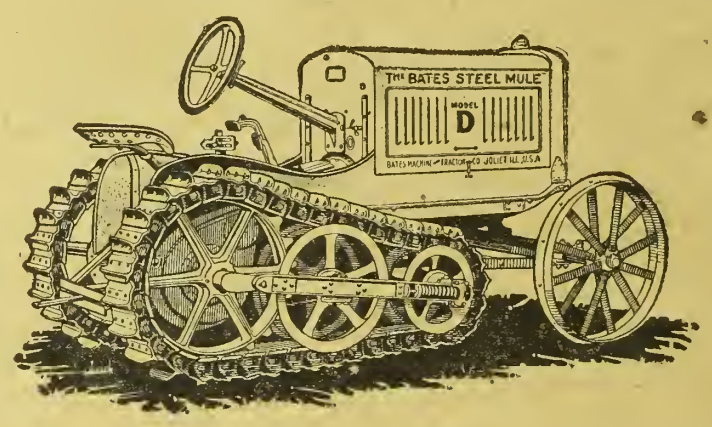

Supreme on Seed Bed

THE Bates Steel Mule does its work fast in all soils and under all conditions, but on seed bed work it is supreme.

The broad surface of the Crawlers distributes the weight of the tractor so it does not pack and the twenty-four cleats constantly gripping the ground give it the traction to pull its load at a fast speed.

Bates Crawler Shoes have hardened steel parts and are 100% oversize—that's why they last for years.

The front wheels make easy steering and comfortable riding.

Bates Machine & Tractor Co.
Established 1883
Joliet : : Illinois

The New Bates Steel Mule

The most efficient Tractor in America

it takes money to achieve something on a big scale and for the general benefit of mankind. But it is certain that the time will come when a general stand against this disease will be taken. Many states are already setting a good example.

Clark's Travel Letter.

Mr. Thomas Jefferson Putnam,
Salem, Colorado.

Dear Tom:—It is cold, rainy and dismal and you don't know how I long to be back on the farm tonight. It seems that I would be perfectly happy if I could take a lantern, go out and listen to the pigs snore in their warm, snug beds, hear the barn door move on its rollers, listen to the cows chew their cuds and hear the horses grind hay. Just think what a pleasure it would be to clean the beds, shake up the straw and make them soft and comfortable for the night. I am lonely Tom, because I am not on the farm but I am headed that way and sometime I hope to have you and Josephine out to see me and get a taste of good food and real country life. I don't expect to make anything but a living, but there is something more in life than accumulated wealth.

To appreciate farm life and to receive all its benefits one must have been born and raised there. Living in a hotel is no place for a farmer; he is a duck out of water. Why, Tom, it is sad the way farmers are selling out, moving to new and strange places, leaving the homestead where all the children were born, raised, educated, baptised, married and probably some of them buried. My mother is living on the same farm for over sixty years and it possesses more comfort for her than all the wealth in the world. My father helped to make the first roads, establish the schools and churches, to change the country from a wilderness to a habitation.

Recollections of the past mean more to my mother than the attraction of the city and it would be a crime to sell the farm and move her from it. About ten years ago I was sent to Fort Benton, Montana. It was during the time of the great land boom in that state. Across the Missouri river from the village, living in a tent I found an old man and his wife who had just sold out in Oregon and were going out 75 miles from the railroad to homestead with their two sons. They had lived the pioneer's life once, had established a comfortable home, were well to do and had created sacred bonds of love and friendship. As they told me about their selling out and moving away from the old homestead and leaving their friends behind their voices choked and tears rolled down their cheeks. I often think of them Tom, and wonder how they have endured that terrible four years' drouth in Montana.

It would be better for the farmers, when comfortably situated, to keep their farms, build them up and keep out of debt. We hear about the farmers striking. They can't strike because they are too deeply in debt. They couldn't strike if they wanted to. The money lender would foreclose and set them in the road and then what would they do? Some farmers know this and that is why they say strikes are wrong. Selling the farm, buying another, taking on a big mortgage is a process that is holding the farmer's nose close to the grindstone. The saying that the farmer is independent is absolutely untrue. The farmer is not independent and he cannot strike until he is out of debt. I have heard that nearly every farm in the state of Iowa is mortgaged and under that condition farmers can only make a noise.

Well, Tom, the western slope is just booming. I have never seen as much prosperity and everybody shows it. The fruit crop last year was good, the demand for it strong and prices high. I think the Grand Junction country has more Jersey cattle than any other place I ever knew. Why, good cows are common, but they are not always well cared for. Alfalfa is abundant but barns, silos and good care are lacking. Why, think Tom, George La Grange last year got 5 cuttings of alfalfa and a yield of 8 tons to the acre. Louis Harms and a few other Grand Junction farmers have made arrangements to do advance registry work in their herds this year. Last year Mr. Harms, in an unofficial test, found that a grade Jersey cow made 516 pounds of fat.

The Fruita Co-Operative Livestock Shipping Association has made seven shipments and saved the farmers hundreds of dollars to the carload. Why, think, a saving of $235 on one load of hogs! The manager handles the stock most carefully and had a gain of 35 pounds on one car. Managers of other associations should take notice of this and act accordingly.

You know, Tom, I once mentioned that members of farmers organizations are sometimes jealous of other farmer's organizations. I observe this condition nearly everywhere and I am unable to understand it. As long as this condition prevails there is little hope for any farmer organization. In time they will decay and pass away. Any member of a farmer organization that will attempt by word or deed to injure another farmer organization is an enemy to the farmer.

The county agent, Mr. McCann at Grand Junction, has offered to help the farmers in their breeding and feeding operations and one night in every two weeks he is going to meet them in a class. That is business Tom, and I hope other county agents will follow his example. The time has come when the farmer must give close attention to this part of his operations.

Later: I came to Canon City yesterday and today I am examining conditions at Penrose. Conditions have changed wonderfully since I first visited this place three years ago. The farmers are learning conditions and are doing more general farming. Two carloads of cows have been placed on the project in the last two years and farmers now have a steady substantial daily income. More alfalfa seed is being sowed and a few silos are going up. The growing of cucumbers, melons and cantaloupes for seed is a new, but very promising line. One farmer told me that last year he cleared $400 an acre on melon seed. The livestock shipping association is doing fine work. It handles most of the stuff raised in Fremont county. The manager told me that with hogs it has saved the farmers $5 to 15 a head. It doesn't seem possible, but I think it is true.

You have heard Tom, of the "honest farmer," but will you believe me that some farmers after they have consigned their stock to the association, will sell it to the local buyer? I am still of the opinion that farmers are no more reliable than any other class of people, but thank goodness they are no worse. The success of co-operation depends upon every man doing his part. Suspicion, jealousy and distrust must be banished from the mind. Co-operation on the part of the individual means some sacrifice and self denial. Trusts and corporations are generally condemned by the farmer, but they have their rise through the co-operation of individuals. Isn't that a lesson for the farmer?

Every farmer organization should endeavor to co-operate with every other farmer organization that has the betterment of the farmer as its object.

I am quite anxious, Tom, to get home and get my garden planted. I don't know how I could live without it and wonder how any family can get along without a garden. Last year we had abundance of all kinds of vegetables. I planted corn the 15th of July and had roasting ears from it before frost. I am afraid the wind has blown the manure away. How is your garden doing? Got it plowed yet? Goodbye.—R. W. CLARK.

At Lytle, in El Paso county, Colorado, the laundry problem was nicely solved by community work. All families bring their clothes to the post office where the bags are collected by the mail carrier. He brings back the clothes from the wet wash laundry the following day.—C. A. C. News Notes.

I am enclosing a M. O. for $2 for Western Farm Life for 5 years. I like your paper fine. I think every farmer should subscribe for one farm paper in his own state, that brings him in touch with implements needed on a farm and breeders of every kind of stock.—Wm. J. Philips, Florence, Colo.

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We carry supplies and do repair work. We have twelve patterns to select from, both electric and non-electric. Can suit any case. We have selected the PORT-O-PHONE, electric hearing instrument as being the best up to present time. Four patterns. Five-year guarantee.

Free Demonstration.

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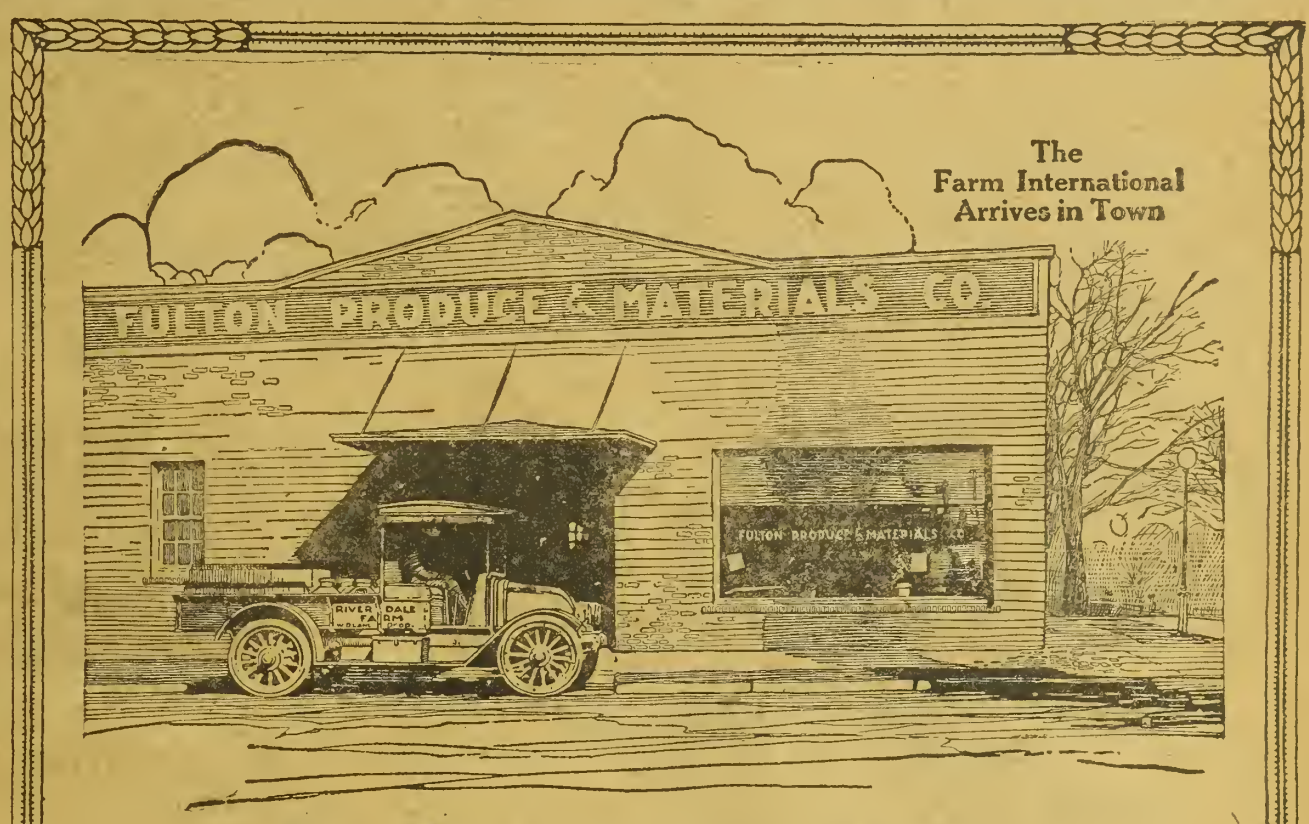

To the Tractor-Owner:

YOU know the value of power in the saving of time, money and labor on the farm—provided you have the right tractor.

If you also own an automobile, you have learned what a wonderful time-saver this form of power is in making quick trips to town and getting around the country.

You will readily appreciate, then, the great value of a motor truck as a saver of hours, dollars and work on the farm, for it combines the heavy-duty utility of the tractor and the distance-reducing responsiveness of the motor car.

International Motor Trucks, which are made in five capacities—¾, 1, 1½, 2, and 3½-ton—are particularly adapted to farm use because of their sturdy, rugged construction and powerful engines. They are entirely *factory made* at the Harvester Company's plants—*not assembled*—and are made with the same care and regard for quality and service as McCormick and Deering haying and harvesting machines, with which you are familiar. Harvester Service is always available through the 92 International Harvester branch houses, conveniently located, which serve thousands of local dealers.

Do your hauling with International—the truck that "goes where the going is hardest." Write your name along the margin of this advertisement and mail to us so that we can send you a folder that will give you a faint idea, at least, as to how good-looking and good-working **International Motor Trucks** really are.

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Great Plains Agriculture.

F. D. FARRELL,
Dean of the Kansas Agricultural College, in the Agricultural Review.

Agriculturally, the major part of the Great Plains in the past has been a land of alternating feast and famine. Periods of agricultural prosperity have alternated with periods of acute agricultural depression. This has been true chiefly because of two things: (1) The wide annual and seasonal fluctuations in rainfall and other weather conditions, and (2) the extensive adoption of a system of farming which has not been well suited to the uncertain climatic conditions. Something of the fluctuating character of the annual precipitation is indicated in the table below, which shows the minimum, maximum and mean annual precipitation at ten points on the Great Plains area during the past twenty to thirty years:

Annual Precipitation at Ten Stations on the Great Plains Area.

Station—	Precip't'n Inches Min.	Max.	Mean
Judith Basin, Mont....	15	24	18
Williston, N. D.....	10	19	15
Belle Fourche, S. D....	7	18	13
North Platte, Neb.....	11	23	18
Akron, Colo	15	22	18
Colby, Kan.*..	7	32	16
Hays, Kan.*.....	12	35	23
Garden City, Kan.*....	9	29	19
Wallace, Kan.*.....	7	34	16
Amarillo, Tex.	11	28	18

*Long record, from U. S. Weather Bureau. Others, shorter records, from U. S. D. A. Bul. No. 222.

The agriculture of the region has been built up primarily on the basis of grain production, wheat being the principal crop grown. This agriculture has proved unsatisfactory, except in certain favored localities, because of low yields of crops and frequent crop failures.

In the recent past, the disillusionment of the Plains settlers who have failed to succeed in grain farming has led many of them to attempt to develop their agriculture on a different basis. Each year sees an increase in development in the new direction. To discuss the prospective agricultural development of the Great Plains it is not necessary to indulge in unsupported prediction; a description of the changes already taking place is practically sufficient. From these changes it appears that the future development of the region will be characterized by six major economic features. (Doubtless there will be many important social changes also, but these will not be discussed here.) The six major features which are coming to be apparent are as follows:

The agriculture of the region, as a whole, will be based on livestock industries instead of crop industries. This will be somewhat in the nature of a reversion. The Great Plains area when the white man found it was a buffalo pasture. Later it became what was perhaps the world's greatest cattle pasture. Broadly speaking, the agriculturist has failed to transform successfully what formerly was exclusively a cattle country into a specialized crop country. Between these two extremes the agriculture of the region is gradually becoming established. Instead of agricultural specialization there will be agricultural diversity. It would perhaps be as unwise to attempt to return to exclusive specialization in cattle as to continue in the present prevailing practices. Some cash crops should be grown in a great many localities, but, in general, crop industries should be subsidiary to livestock industries. The kinds of livestock industries will vary in different parts of the region and under different local conditions.

Much of the area will continue to be used primarily as a pasture for beef cattle. In many places the dairy industry will find a foothold. There will be opportunity for the successful establishment of the sheep industry in many places. Parts of the area may come to be important in the production of pork. In that part of the region where the beef industry now predominates, it probably will continue to predominate. There must be changes in the methods of beef production, however, in order that the industry may be made more reliable and more profitable. The dairy industry in many sections can be depended upon by relatively small land owners as a means of paying running expenses and making a living. In a farming system in which wheat production is secondary, the experience of many practical farmers is now showing the practicability of the dairy industry based on small herds. In the Plains country sheep probably will find a place as consumers of waste materials which cannot be utilized effectively by other livestock, and as destroyers of weeds. Where there are special favored spots, as along the [illegible] courses where alfalfa can be produced successfully, pork production doubtless will find a place.

Most of the remaining virgin land of the Plains probably will be left unplowed. Plains experience has demonstrated that millions of acres of the virgin land of the region can be most effectively utilized as pasture. There can be no doubt that other millions of acres in the region have been plowed up which should have remained in its virgin state.

More feed crops will be grown, and a smaller acreage will be devoted to crops grown for sale; there will be more acres in forage and fewer acres in grain. There is a wide variety of forage crops which can be grown successfully in the region, some being adapted to one set of conditions, and others to other sets of conditions. These forage crops include the sorghums (kafir, milo, cane, Sudan grass, etc.), corn, alfalfa, sweet clover and rye. It is not impossible that the Russian sunflower may prove useful over wide areas. Where native pasture is not available or where supplemental pasture crops are needed, use must be made of such plants as sweet clover and Sudan grass, each of which is making a place for itself in the agriculture of the Plains.

It will be necessary to utilize as livestock feed more of what is ordinarily regarded as waste material. Practicable utilization already is being made in many instances of volunteer grains, corn fodder, straw, and even Russian thistles; and there are indications that the wild sunflower will be found worth harvesting for feed.

More feed will be stored during years of plenty for use in winter and during periods of crop shortage. The Plains farmer must make very extensive use of the silo as a means of storing feed against hard winters and protracted drouth.

There must be developed a better relationship among the three chief classes of agricultural resources of the Great Plains; the grazing lands, the dry-farmed lands, and the irrigated lands. Too often in the past each class of land has been operated by itself without much reference to either of the others.

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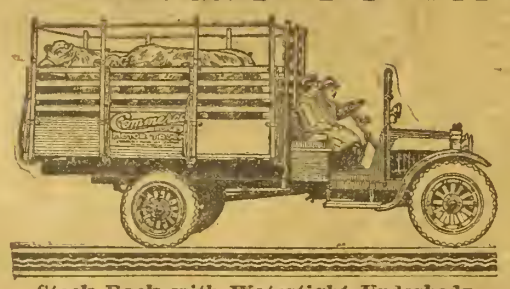

Stock Rack with Watertight Underbody

Pneumatic Cord Tires, Speedy Dependable, Fully Equipped-- A Wide Range of Bodies to Select From

Sixty per cent of the Commerce Truck output for the past 2 years are working today on the farms of America. Commerce Trucks are manufactured to farm specifications by a 10 year old truck manufacturer, who has continuously specialized on trucks of 1 and 2 tons capacity.

Equipped with Pneumatic Cord Tires Commerce Trucks insure greater speed, reduce oil and gasoline consumption, cut down vibratory stresses, double the life of the truck, increase the pay load. Eliminates unnecessary unsprung weight. Gives easier riding qualities, etc.

In addition to the Everyway Farm Body, which enables the farmer to carry every kind of a load, there are five other distinct types of bodies to choose from.

The Commerce chassis is sold fully equipped with Electric Lights, Impulse Starter, Spotlight, Bumper, Windshield, Horn, Tools, Front Fenders, etc.

The report of the U. S. Bureau of Agriculture just issued states that 90 per cent of the trucks in use by farmers are of Commerce capacity 1 to 2 tons. In all motor truck tours into the farming districts that Commerce Trucks have participated—they have made perfect scores.

There Is a Commerce Sales and Service Station Near You
Write us for catalogue and special farm body literature

THE COMMERCE MOTOR CAR COMPANY, DETROIT, MICH.
Largest Manufacturers of 1 to 2 Ton Trucks in America

For Sacks and Similar Loads

For Handling Hay, Straw, etc.

Hauls Light Material, Loose Grain, etc.

For Baskets, Crates, Passengers and Boxes.

A "Home-Like" Store

We like to think we give our customers, in person or by mail, something more than the bare goods they buy from us.

—These are the days when thoughtfulness, patience, energy and skill can do much to secure better goods—more likeable kinds and patterns—and we are giving more of that sort of service than ever before.

—And we like to give the friendly, personal service to patrons of our store—the little courtesies as well as the big favors—intelligent information about the goods—helpful advice about things best suited to each individual need.

—We are trying to become of more Service to you each day—more helpful—more satisfying. We want you to feel the friendly Service of this Store.

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—The same intelligent, personal attention will be given each patron, whether you order by mail or shop in person.

16th and Curtis. **The Joslin Dry Goods Co.** Denver, Colo.

TRACTORS must work on an average of 210 days per year on the large ranches of the West—which means anywhere from 2100 to 5000 hours service per year.

BEST TRACTORS have mastered these conditions for over thirty years. BEST engineers have gradually made improvements until today the BEST TRACKLAYER SIXTY stands supreme as the most dependable heavy duty tractor built.

The tractor built in the West to meet Western conditions in farming, road building, logging, hauling and belt work.

Best "60" Tracklayer and road scraper. Taken at Denver, Colorado, June 1919. Lower photo shows Best "60" pulling 9 plows 8 inches deep in hard adobe land

BEST TRACKLAYER TRACTORS

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A few outstanding features of the SIXTY are: Ease of operation—accessibility—no wheel, all track—no belts or chains, all gear driven—turns in own length—37 anti-friction bearings—manganese steel tracks—working parts completely housed—non-lubricated rocker joint in track, etc.

Catalog upon request

C. L. BEST GAS TRACTION COMPANY
San Leandro, California

"60"

The range lands can be more effectively utilized when their utilization is associated with that of dry-farmed lands and also with the irrigated lands of the region. The irrigation farmer, while occupying an almost neglibly small area of the Great Plains, nevertheless can be very helpful to both the dry farmer and the range stockman, and at the same time benefit himself. Relationships among these three classes of lands can be developed which will improve materially the utilization of all.

The best development of the above important features of the agriculture of the Great Plains will require:

More far-reaching plans by Plains settlers It will be increasingly necessary for the land operator in the region to project his plans far into the future. Livestock industries cannot be successfully developed on a one-year or two-year, or any short time basis, and permanently successful agriculture in the Plains now appears impossible without livestock industries. Before long-time plans of development are placed into operation there must be a radical change in the prevailing point of view with reference to Great Plains agriculture. The essential thing in the required point of view is that the agriculture must be placed upon a new basis and that development must proceed over a long period of time.

Public support, both moral and financial, of the better Plains agriculture. The time requirements of developing this agriculture, as already indicated, are greater than those of the agriculture which has been attempted and which has not been satisfactory. The change from the one to the other on a large scale will not be easy. The foresight, determination, equipment, time and capital required will each be very considerable. It is important that all people who are interested in the development of the agriculture of the region bear this in mind, and maintain a sympathetic point of view toward the upbuilding of stable agricultural practices.

Land Tax Referendum.

Idaho farm bureau members, to the number of about 14,000, will be called upon, before April 15, to indicate their approval or disapproval of the plan proposed by a bill in congress, to levy a tax of 1 per cent on land holdings in excess of $10,000. Their vote will be in the form of a referendum submitted by the American Farm Bureau Federation, which was formed at Chicago, March 3.

Submission of this referendum is the first result in Idaho of the action of the Idaho State Farm Bureau, at its recent meeting in Boise, in deciding to join the national federation. At the Boise meeting, especial approval was given by the delegates to the provision in the proposed federation constitution, that the federation should not be committed to opinions on national policies without submission of such questions to a referendum of the membership. It says:

"February 7, 1920, Representative Nolan introduced in the House of Representatives a bill to provide for the raising of public revenues by a tax upon the privileges of the use and enjoyment of lands of large value. Section 1 of said bill defines land to be 'the surface of the ground with all assessments in, on and over same,' includes forest, water rights and minerals, 'and not including improvements the result in whole or in part of the application of labor to land.'

"Section 2 provides 'That all persons, firms, associations and corporations owning land in value in excess of $10,000, whether in possession or leased to others, shall be subject to an excise tax upon the privilege of the use and enjoyment of such excess at the rate of 1 per centum.'"

The referendum says: "The object of this act is to raise public revenues. It is not supposed that it will do away entirely with, but be supplementary to the present income tax laws. The proponents of this and similar measures believe that land does not at present bear its just proportion of taxes as compared to the industries.

"Effect: In considering this act you should not allow the fact that the revenues therefrom will come in principal part from the farmers, to prejudice your judgment, but should consider it in relation to fairness to other interests; and whether or not it would be of sufficient burden to affect land values, rentals or incomes and thus affect production. There is no provision made for deductions for liens or mortgages. The provisions merely call for 1 per cent per annum on actual valuations of all holdings above $10,000. Since the farmers of the nation are most vitally concerned in this proposal, we ask that you give this careful consideration and return the enclosed ballot to the American Farm Bureau Federation, Ames, Iowa, not later than April 15, 1920."

SAVAGE QUALITY

SAVAGE

A THAW BRINGS OUT THE COONS

THEY come out of their den-trees—travel a little during the night—and then lie out on limbs in the grateful afternoon sun.

Take a walk in the woods with your little Savage Junior rifle. Watch the snow around the trees for the hand-shaped tracks. Run your eye along the highest limbs. Search for the black-marked mask—the gray body—the ringed tail.

A hollow-pointed .22 long rifle bullet from your carefully rifled, carefully targeted, deadly accurate little Savage Junior will bring a coon from the tallest tree *and coon skins are bringing high prices this year*

Your little .22 Savage Junior Bolt-action single-shot rifle is simple and dependable. If you haven't yours yet, your dealer has it for you. Only $9.75. Ask him to show it to you. For description, write us.

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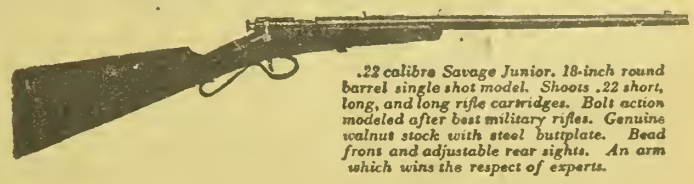


.22 calibre Savage Junior. 18-inch round barrel single shot model. Shoots .22 short, long, and long rifle cartridges. Bolt action modeled after best military rifles. Genuine walnut stock with steel buttplate. Bead front and adjustable rear sights. An arm which wins the respect of experts.

The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Green Things Growing.

O the green things growing, the green things growing,
The faint, sweet smell of the green things growing!
I should like to live, whether I smile or grieve,
Just to watch the happy life of my green things growing.
O the uttering and the pattering of those green things growing!
How they talk each to each, when none of us are knowing;
In the wonderful white of the weird moonlight
Or the dim, dreamy dawn when the cocks are crowing.
I love, I love them so—my green things growing!
And I think that they love me, without false showing;
For by many a tender touch, they comfort me so much
With the soft, mute comfort of green things growing.
And in the rich store of their blossoms' glowing,
Ten for one I take they're on me bestowing.
Oh, I should like to see, if God's will it may be,
Many, many a summer of my green things growing!
But if I must be gathered for the angel's sowing,
Sleep out of sight awhile, like the green things growing,
Though dust to dust return, I think I'll scarcely mourn,
If I may change into green things growing.
—Dinah M. Craik.

Speaking of Vacations.

A number of years ago when the travellers of this country seemed "Europe mad," many of the large magazines started a "See America First" campaign. How successful they would have been, we'll never know because what used to be the Kaiser, started an exciting game that was altogether too much for the nerves of even the most travel hardened tourist. And the results of that game have left the beauties which used to be visited for the sake of the beauty alone in a state to interest only the curious.

Now the public don't have so much to be told to "See America First" as to "See America which is near you at any rate." For most of us are scornful of that which we can reach easily or which is more or less familiar already. A man once travelled around the world in search of a sign which should point the way to wealth, fame and the most beautiful woman. He came back after years of bitter and fruitless search to find the sign in his own front door yard, carved there by childish hands many years before. The ability to enjoy something whether it be near or far is what counts and not the thing itself.

So much for learning about the enjoyment. The next thing is to use the time and material to go upon which we have, for we want the readers of Western Farm Life to be first in using the slogan on "See America which is near you."

None of us in the western states need be told that there is scenery and to spare in our western states but do you know how close some of these famous spots are, for what they are famous and how many people from away back east visit them every year? And wouldn't it be doing the Ford, or the Dodge, or the Maxwell a favor to take it along and find out?

Every family—particularly every farm family—needs to get farther away from home than the town in which they trade. Not only do they need a few new faces, but they need the increased respect for their county and their state which a trip to some of the beautiful places will bring.

The "Shade of the Sheltering Palms" hasn't anything any more interesting in the way of a tent or camping place than the side of that same car, so don't worry about a hotel. The writer knows a family that keeps a camp outfit always packed and in readiness to go anywhere within reason for a day or two's outing. They know how to enjoy outdoors and never get tired of visiting a certain old fort used in the protection against Indian days. The fact that there is a bit of good fishing close by doesn't detract from the historic interest and beauty of the scene for father.

How many of the readers have visited the Yellowstone or Estes National Parks or the Mesa Verde—so full of Indian lore you can taste it, or some of the wonderful spots of Indian legend in New Mexico? Plan on taking some days to do some of these things this summer. In the meantime we hope to arouse your interest and curiosities and desires with bits about these spots and some pictures perhaps. But if you have anything to say on this vacation idea, say it for the rest of us. Don't wait. Help us plan some trips right now.—E. D.

Summer Style Hints.

Two style hints noticed these last two weeks are the beautiful voiles for summer wear and the shellacked raffia for hat trimmings.

The voiles are anything from light to dark with light figures or contrasting colors in all sorts of designs from flowers to peacock feathers. Some of the dark ones are very beautiful and very practical for they can be simply made and worn almost all summer with just pressing to freshen them. They may even be worn on car trips time and again and still stand the wear and the dirt. If you are planning a new dress by all means look first at some of these beautiful materials.

The varnished raffia is difficult to describe. The designs are made usually of a number of stripes, each stripe is made of many strips of the same color of raffia held together at intervals by a black cross thread or strip. The colors are very beautiful and there are enough brilliant ones to keep even an Indian happy.—E. D.

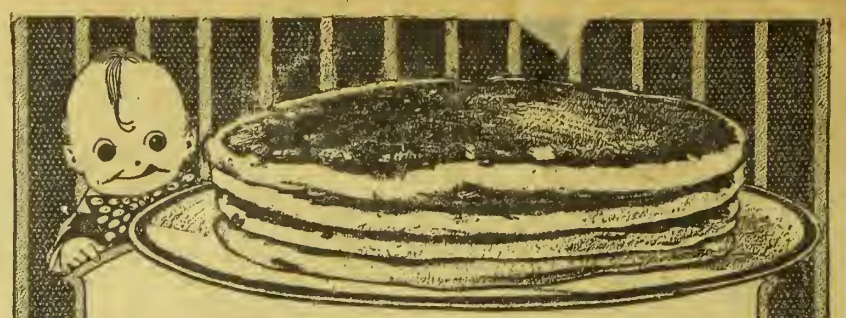
Preventing Darkening of Peeled Fruit.

Apples, peaches, pears and other fruits may be prevented from turning dark if they are to stand but a short time after being peeled by being put into cold water. If they are to stand some time the addition of a teaspoonful of salt to a gallon of the cold water will prevent their changing color. Lemon juice or vinegar may be used in the place of the salt. Use a tablespoonful of these to a quart of water.

Peeled bananas can be kept white a long time if they are dipped in lemon juice. The lemon helps the flavor of the banana, in the opinion of many persons.

When thes... its are to be made into salads, ...m with a coating of the dressin... as they are peeled and they wi... hite a long time.

When nuts ... lish walnuts stand



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in fruit salads they give them a purplish gray color. This may be prevented by mixing the nuts with the rest of the salad just before it is served. The salad will also have a finer flavor if this is done, since when they change color they give the salad a peculiar bitter flavor. There seems to be no bad results from eating salads containing nuts which have changed color, nor of eating fruit which has turned dark but in neither case is the flavor equal to that with the fruits with clear natural color. —Edith Allen.

Ways of Cooking Beef.

Those country housekeepers who have beef packed away for use in winter and early spring are never at a loss for the wherewithal to cook a substantial meal. All families who butcher their own meat will make provision for plenty of corned and dried beef; and when I say dried, I do not mean smoked; I mean such dried beef as we used to have—salted and hung up to dry, the kind that is so delicious for supper or lunch when shaved in thin slices or "frizzled" with a cream gravy. Corned beef and cabbage may be plebian, but it is satisfying; neither is corned beef hash to be despised, neither boiled, pulled into bits, and made with a gravy served on toast.

It makes one smack one's lips to see in retrospection the juicy roasts and delectable tender stews with dumpling while, as for ox-tail soup, real ox-tail, not the canned product, there is no adjective fit to describe it.

Stakes—rare, juicy, cut thick enough to please your fastidious palate. But fresh beef steaks and roasts will not last forever, then what?

Of course, you may can beef, of which more later. Pickled tongue and tripe are good, although the preparation of tripe is a rather tedious one, but it has the excellent recommendation of being more easily digested than almost any other sort of meat.

Baked or boiled heart is good, and so nice sliced cold for tea or for the youngsters' school lunch.

From three to five gallons of mince meat should be provided for the "gude mon's" favorite pies.

The tougher, less desirable cuts of beef may be made tender and appetizing by judicious cooking. For instance: Beef en casserole, stews and soups, for which the tougher pieces are admirably adapted by the long, slow process required to bring out the flavor of the meat. My men folks enjoy a meat pie made in this way: Parboil the meat which has been cut into rather small pieces; back bones are good for this if boiled till the meat can be picked off the bones easily; put in a deep dripping-pan, add the broth and seasoning, some small potatoes and a sliced onion; cover with a good biscuit crust and bake 45 minutes in a moderate oven, basting occasionally to from a crisp crust. With it serve pickled horseradish, and stewed or scalloped corn, finishing with a cottage pudding for dessert.

In making a meat loaf use one-fourth chopped fresh pork to three-fourths beef. If mixed as it is put through the chopper it is better; add seasoning, a little garlic or onion, one or two eggs, according to the amount of meat used, and allow one cupful of cracker crumbs to three cupfuls of meat. Put in baking pan and pour over it sufficient broth or hot water in which a spoonful of butter has been melted, and bake in a moderate oven one-half hour.

Hamburger is better if a little fat is added to the chopped beef, one egg and a little chopped onion; roll in cracker crumbs and fry quickly, serve with a thickened gravy if liked.

To make a round steak palatable, pound well, roll in flour and saute in hot fat, or cover with a dressing of bread crumbs, roll, tie and bake 30 minutes, thicken the gravy and serve with potatoes. This is the same as mock duck.

Braised beef or pot roast is done by searing the meat in an iron kettle over a hot fire; when one side is brown, turn and brown the other, then dredge with flour, season and pour enough boiling water on the meat to prevent burning, cover and cook slowly till done, being sure to have enough gravy to cook and brown the potatoes. Horseradish and pickled beets are a good relish with this, accompanied by stewed tomatoes and scalloped onions; chocolate or custard pie or rice pudding makes a nice dessert to serve with this dinner.

An Irish stew is usually made of mutton or lamb, but an ordinary beef stew is very nice with dumplings. The secret of success with this as with all the cheaper meats is long, slow cooking or simmering, keeping it at an even temperature, and in just the proper proportion of seasoning. To make the dumplings, beat one egg until light, add one-half teaspoon of salt, one pint sweet milk, three teaspoons baking powder and flour to stir into a stiff batter. Drop into the boiling stew from a spoon and cook fifteen minutes. Be sure not to remove the lid of the kettle till the dumplings are done, then lift and serve at once. Cabbage salad with a cream dressing and creamed carrots are nice with this, with a tapioca pudding or baked apples and cream for dessert.

As an accompanying dish to serve with corned beef and cabbage have macaroni and cheese and scalloped potatoes to be followed by a steamed Indian dumpling. To make this stir up a batter as you would for corn bread with two eggs, three tablespoons shortening, two tablespoons sugar, one pint of sour or buttermilk, one level teaspoon of soda, half cup flour, and three cups of corn meal.

Grease well a turks-head cake pan, pour in the mixture and steam over the boiling dinner one hour and a quarter. Serve with butter and maple or other syrup.

A New England boiled dinner is easy to prepare, does not require much watching, and has the merit of not taking much room on the range or stove. For an ordinary sized family take three pounds of beef with some fat, put to boil in sufficient water to cover, skim often till the scum ceases to rise; keep boiling briskly till juices are extracted. Quarter an ordinary sized head of cabbage and put in with the meat; prepare carrots, cut in three-inch lengths, pare and quarter six or eight turnips, and add to the pot an hour before dinner, and half an hour before serving time put in as many pared potatoes as wanted. Serve on a large platter with the vegetables surrounding the meat, and place beside it a bowl of the broth or "pot liquor." Serve for dessert steamed apple dumplings or a baked Indian pudding.

Here is "Aunt" Sally Alden's recipe for mince meat, famed throughout the Berkshire hills of western Massachusetts:

4 lbs. lean beef, ground.	1 qt. boiled cider
1½ lbs. ground suet	4 cupfulls meat stock.
8 lbs. chopped apples.	1 cupful vinegar
1 lb. brown sugar	1 qt. grape juice
4 lbs. raisins	1 tablespoon salt
3 lbs. currants.	1 tablespoon pepper.
½ lb. citron cut fine	

Mace, allspice, cloves, nutmeg, cinnamon to taste. Mix the ingredients, add half pint molasses. Cook, then add the juice of two oranges, two lemons, and one tablespoonful almond extract. Will keep a year.—CARRIE E. FREDERICK, Montrose, Colo.

Potato Recipes.

The present per capita consumption of the potato in America is less than three bushels—about one-third that of Europe. America has not kept step. It is timely that Colorado, with her total annual production of about fifteen million bushels, should do her part towards increasing the consumption of that vegetable which has rightly come into the name of the King of Vegetables. Colorado Agricultural College has issued a circular giving recipes. This will be sent on request.—News Notes.

Time and Step Savers.

Bread mixers, food choppers, washing machines, dish drainers, carpet sweepers, paper towels, measuring cups, egg beaters, double boilers, colanders, graters. Wheel or home dinner wagon, wood box on casters, small kitchen table on casters, kitchen cabinet, drop-leaf table, placed just where needed, clothes chute from second floor to basement, indoor clothes line, hand tray.—Colorado Agricultural College.

She—Then we are engaged?

He—Yes, dear; we are.

She—And am I the first girl you have ever loved?

He—No, dear, not exactly. But I am much harder to please now than I used to be.—Exchange.

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The Clothing and Haberdashery sections of The Denver are not merely an annex to a dry goods store—each shop is under the direct supervision of an expert in the line of merchandise represented, and strong attractions are presented in

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QUALITY THAT MAKES GOOD,
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Clothes for all Places and Occasions ---Right Models and Materials for the Ranch and the Range---for Business Wear and All Social Events.

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Don't worry about perfect results. Use "Diamond Dyes," guaranteed to give a new, rich, fadeless color to any fabric, whether wool, silk, linen, cotton or mixed goods,—dresses, blouses, stockings, skirts, children's coats, draperies,—everything!

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Profitable Farm Poultry

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, WESTERN FARM LIFE, Denver, Colorado.

Some Seasonal Suggestions.

How much moisture shall I apply to the eggs in the incubator? How much ventilation is necessary? Where shall I place the incubator? A thousand questions, all old and never satisfactorily answered, are arising daily now. The best advice we can give is, "Follow the rules laid down by the manufacturer." We are too ready at the first failure to get a big hatch to condemn the instructions or the machine. Generally we have been careless in operation; the average person reads hurriedly, carelessly, thoughtlessly. Read the instructions again and again; never perform an operation without checking up with the rules even if you have done the same thing 21 or 42 times. After a few hatches will be time enough to go on experience.

The placing of a machine is of more importance than most people imagine. Freedom from draft and evenness of temperature are essential factors in the management of an incubator. Eggs of strong fertility are more essential than exact amount of moisture and ventilation. Follow the rules more carefully the second time and still more carefully the third time and success will follow.

Eggs to be used for incubation should be kept in a temperature of about 50 degrees. In other words, they should be kept cool, not cold or warm. Whether they should be turned occasionally I do not know; have turned them and haven't turned them with equal success. If you can sleep better after turning the eggs do so, it won't hurt anything.

Too much money in the hands of one not used to handling money is a misfortune and often a calamity; a really good incubator hatch may likewise be disappointing where no provision is made for the handling of the new wealth. How about that brooder? Is it set up? Large enough? Warmed up? Lamp or stove tested? Surely you are not going to depend on the soap box under the stove! With eggs at sky-high prices, and with baby chicks worth 20c to 30c, not to count the possible value of the broiler or that laying pullet next winter, one cannot be too careful. "A penny saved is a penny earned," as much now as ever. The brooder will pay for itself quicker than almost anything on the farm.

With new baby chicks come new troubles; smoky lamps, stoves that don't warm up, lice, mites, rats and cats, and a hundred and one other things. Ever have cannibalism among the little fellows? If not, you are fortunate. We have always felt that this trouble is the result of accident, and consider it, like the things mentioned above, preventable to a very great extent.

The trouble may start in the incubator; the first hatched chicks get restless and hungry before the hatch is completed and if the incubator is not kept darkened, when they see something that looks like a nice pink worm, they try to get possession, and if blood appears and the chick gets a taste of it, a cannibal is born.

One of the strongest arguments against hen-hatched chicks in favor of the incubator, is that those hatched in machines are free of lice. I have said and probably will say much about "chilled chicks." Whether lice or chilling get the most victims I don't pretend to know, but directly or indirectly they are the cause of most of the mortality. Both are preventable.

Bowel troubles get lots of chicks. Lice and chilling are most usually the cause; remove the cause; feed sour milk and buttermilk from the beginning and there will be few sick chicks.—W. E. Vaplon.

Raising Chicks in the Old-Fashioned Way.

Clean quarters, clean nests, clean food and clean water are essentials in any kind of successful poultry raising. Especially so, by the hen hatching method.

By clean quarters and nests, I mean not only that they be free from filth, but absolutely minus mites and lice. The best eradicator of these pests I have ever found is a mixture of lye, salt and kerosene in water (the suds from your wash is fine).

I moved to a place one spring several years ago where the mites were just in knots everywhere. I had never imagined it possible they could get so thick. Before I realized what was the matter, one hen died on the nest, and several others were perilously near death's door. I had about fifteen hens setting at the time. Well, I won't try to tell you what I said about any woman that would allow such an accumulation of vermin on her premises. It was even a waste of breath at the time; more heroic measures were necessary. That hen house positively had to be cleared of everything without further delay and I was just mad enough to roll up my sleeves and go after those pests with a vengeance.

Removing each hen and her eggs to a safe place outside, I pulled out every wisp of straw from the boxes, piled it up in the middle of the hen house, sprinkled sulphur all over it, set fire to it and closed the door, looking in occasionally to see that the fire was doing no damage. Then I scraped and swept up every particle of dirt, dust and ashes, used some kerosene and once more set it on fire. Then I used a can of concentrated lye, about half a gallon of kerosene, and at least a quart of salt in a tubful of wash suds, heated boiling hot. Before doing this, however, I poured the kerosene in the nests, one at a time, and burned them out. By the way, I kept a large pail of water near by, while doing this. Then scalded the whole house, nests, walls and floor with my mixture. The roosts I burned up entirely, sprinkled the floor while it was wet quite heavily with salt and ashes, poured kerosene in the nests, sprinkled in the salt and ashes, made new seats, dusted my hens thoroughly with insect powder and placed them back where they had been.

As each hen hatched I burned up every wisp of the old nest, used more kerosene, ashes and salt, and was not bothered again with mites, though I stayed in that same place for five years.

I have also had the same experience in another place since coming to eastern Colorado with the same satisfactory results. One should always be very careful not to throw any of the filth of a lice or mite infested house outside, for that only scatters them; either burn or cart it all entirely away from where the chickens run.

However, since that time I like to dip my hens in the mixture (not too strong, of course), before I cleanse the house, thereby preventing a second crop from what were on the hens. Holding the head in one hand, partly protecting the mouth and eyes, and the feet in the other, draw the hen swiftly through the mixture, feet first, against the feathers, in order to thoroughly wet to the skin. This is best done early in the morning before you turn out the flock. Pick a warm sunny day and the hens are soon dried off. Then proceed to use the extra strong solution on the hen house and nest boxes; sprinkle in your ashes and salt and make the nests temptingly soft.

If you think your hens haven't sense enough to appreciate your efforts to make them comfortable, just hang around their newly furnished, clean house and watch.

Madam comes in, peeks curiously around, tries first one nest, then another, all the while qua-qua-quaing her thanks in soft satisfied tones, settling down contentedly at last to pay you for your trouble in her own way, never failing to proclaim the fact in unmistakable terms.

Some one has aptly said, "The reason hens' eggs are always higher than duck eggs is because the one advertises her product, while the other does not."

When the hens become broody, a special, separate place apart from her laying sisters should be provided with new, clean, soft, warm nests, especially if it is in early spring. Several thicknesses of newspapers in the bottom and sides of nests is a wise idea for the extra early sitters. Food and clean water should be kept near by, also a box of ashes in which insect powder is sprinkled quite often for madam's daily dust bath. A few days before the eggs are to hatch carefully remove them, take out the old nest, clean the box thoroughly, dust in ashes, minus the salt this time, wet a newspaper with kerosene, place in bottom of box and put in fresh straw quite thickly and replace the eggs and hen. The fumes of the oil will drive every chance louse off of the mother by the time her babes are out of the shell. By removing the chicks to a nice warm basket as fast as they are dry, one often saves them from being mashed in the nest. It also keeps the hen on her job instead of trying to walk off with her first born babes, to the certain death of those lingering in the shells.

Lots of work? Yes, but it pays big dividends. You positively cannot raise chickens and lice both in the same coop, and chicks are far more profitable than lice. The old saying that "an ounce of prevention is worth a pound of cure" is doubly applicable in this case.

By setting at least two hens at a time one can put all the chicks with one hen if the hatch is poor, break up the other and start her laying again. It's not a good plan to re-set them as some do; it's really too much to expect of your hens. Three weeks' confinement is bad enough without doubling the dose.

A rain proof, rat proof coop, preferably with a little wire protected runway, is now in order. After insuring my little brood against the dreaded white diarrhea, which precaution usually excludes all other ailments as well. I start them out in life in much the same manner as the artificially hatched birds, except the ever necessary lookout for lice and mites.

I like a hover than I can turn back to air and sun. They are more easily cleaned too. Every now and then I pour kerosene on the ground or floor of the coop; when the hen hovers the chicks over this, the lice just simply skidoo. This plan is but little trouble and is quite effective.

The most satisfactory way I ever tried in caring for chicks at night was this: I procured boxes of the proper size, sawed out a piece in the side sufficiently large for the hen to pass in and out; tacked wire screening (one usually has old doors and windows) over the top and set them around in a closed-in shed. When madam was safely inside (and each one soon learned where

(Turn to Page 38).

How to Prevent White Diarrhea

Dear Sir: I have raised poultry for years and have lost my share of little chicks from White Diarrhea. Finally I learned of Walker's Walko Remedy for this disease, so sent for two 63c packages to the Walker Remedy Co., Dept. 446, Waterloo, Iowa. I raised over 500 chicks and never lost a single one from White Diarrhea. Walko not only prevents White Diarrhea, but it gives the chicks strength and vigor—they develop quicker and feather earlier. I have found this company thoroughly reliable and always get the remedy by return mail. Mrs. L. L. Tam, Burnetts Creek, Indiana.

Don't Wait

Don't wait until White Diarrhea gets half or two-thirds your chicks. Don't let it get started. Be prepared. Write today. Let us prove to you that Walko will prevent White Diarrhea. Send 63c for box on our guarantee—your money back if not satisfied. Walker Remedy Co., Dept. 446, Waterloo, Ia.—Adv.

For Sick Chickens

Preventive and curative of colds, roup, canker, swelled head, sore head, chicken pox, limber neck, sour crop, cholera, bowel trouble, etc. Mrs. T. A. Morley of Galien, Mich., says: "Have used Germozone 17 yrs. for chickens and could not get along without it." Geo. F. Vickerman, Rockdale, N. Y., says: "Have used Germozone 12 years; the best for bowel trouhles I ever found." Frank Sluka, Chicago, Ill., writes: "I have lost but 1 pigeon and no chickens in the 3 yrs. I have baen using Germozone." C. O. Petrain, Moline, Ill.: "I never had a sick chick all last season." Bernard Horning, Kirksville, Mo., says: "Cured my puniest chicks this spring." Ralph Wurst, Erie, Pa., says: "Not a case of white diarrhoea in 3 yrs. I raise over a thousand a year." Good also for rabhits, birds, pet stock.

GERMOZONE is sold generally at drug and seed stores. Don't risk a substitute. We mail from Omaha postpaid in new 25c, 75c and $1.50 sizes. Poultry books free.

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O. J. Snyder
SADDLES
Best in the West.
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1535 Larimer St., Denver, Colo.

BIG MONEY IN SHIPPING YOUR
HIDES
FURS — WOOL — TALLOW
To JOHN NELSON & CO.
[illegible] and Water Sts. Kansas City, Kan.

Service

THERE is undoubtedly no public service that touches directly so many individuals and enters so completely into the social and commercial life of the people as does telephone service. More business is transacted over the telephone than there is through face to face conversations. More social activities are planned, more invitations sent, more engagements made or cancelled by telephone than by any other means.

This places a tremendous responsibility upon those charged with the duty of rendering telephone service. Any failure of the service would have a disastrous effect upon both the business and social relations of a community. A general cessation of the service would cause nation-wide confusion.

Telephone employees realize their responsibility and recognize their obligation. It is this loyalty to duty that makes it possible for the Telephone Company to render service even under the most difficult conditions.

Quite generally there are at this time inadequate facilities causing congestion and confusion, a condition from which there can be no immediate relief. Sometimes the elements rage in a mad fury, but men and women brave storms that the public may be served. Occasionally a scourge of sickness depletes the ranks, adding to the burden of those who escape, but who perform their more difficult tasks with smiling determination to continue the service.

With such a spirit in the telephone organization, the service will at all times be the best that human effort can produce, in the face of whatever adverse circumstances may prevail.

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Farmers' and Stockmens' Exchange

Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LEGHORNS.

S. C. WHITE LEGHORN EGGS; PUREBRED, $8 per 100. Mrs. Lawrence Ricklefs, Troy, Kan.

ROSE COMB BROWN LEGHORN EGGS. STATE winners; 15, $1.25; 50, $3.50; 100, $6.75. Rufus Standiferd, Reading, Kans.

S. C. WHITE LEGHORN BABY CHICKS TO your door from Eggs-a-day-line; $20 hundred; elso eggs. S. Pelitier, Concordia, Kansas.

PURE SINGLE COMB BROWN LEGHORNS, bred to lay. Eggs $8, 100; $4.50, 50; $2 setting, prepaid. Chas. Bowlin, Olivet, Kansas.

SINGLE COMB WHITE LEGHORNS—EGGS, $1.75 for 15 prepaid parcel post, $6 per 100, express. Baby chicks, 18c. Mrs. C. C. Cole, Levant, Kansas.

PUREBRED ROSE COMB BROWN LEGHORN eggs, $8 per hundred, pen $3 setting, baby chicks 20 cents. Prepaid. Mrs. H. Lee Smith, Route 2, Kanopolis, Kansas.

S. C. WHITE LEGHORN EGGS, TOM BARRON and Ferris strain, 8 cents each in lots of 30 or more. Wm. A. Draves, Lemoyne, Keith Co., Western Nebraska.

S. C. WHITE LEGHORNS. NOW IS THE time to place your order for hatching eggs. My hens are bred to lay and do it. L. E. Larson, Fort Morgan, Colo.

PUREBRED SINGLE COMB BROWN LEGHORNS, exclusively. Eggs $1.50 per setting. Incubator lots, 8 cents per egg prepaid. Jacob P. Miller, Fowler, Colo.

FARMERS IF YOU WERE BETTER ACQUAINTed with the Buff Leghorn you would have more eggs. Baby chix and batcbing eggs now ready. Champney, 2057 So. Broadway, Denver.

BABY CHIX—BUFF LEGHORNS MARCH 10TH, weekly hatches after this. Other breeds in any quantity. Book your orders early to avoid disappointment. Champney, 2057 So. Broadway, Denver.

SINGLE COMB BUFF LEGHORNS—SELECT heavy layers; vigorous range stock. From best breeders. Eggs, $4.00 per 50; $7.50 per 100. Mrs. J. Rose, So. Locust St., Grand Island, Neb.

QUALITY EGGS FOR HATCHING. ROSE COMB white Leghorns 100, $8. Large 5-pointed single comb brown, 100, $7. Fine winter laying strains. Oakgrove Poultry Farm, Dannebrog, Nebr.

SINGLE COMB BUFF LEGHORN EGGS FROM our "Heart of America," and State Show winners, $2, 15; $5, 45; $10, 120 postpaid. Cockerels. Cockbirds, same breeding, $5 each. Pearl Haines, Rosalia, Kansas.

WINTERLAY—BARLOW'S WELL KNOWN strain, Hoganized Single Comb White Leghorns, standard. Bred to lay and do it. Flock of 160 laid 146 eggs January 17th. Eggs, chicks, catalog. Barlow & Sons, Kinsley, Kan.

SINGLE COMB WHITE LEGHORN HATCHING eggs (Young's Strain), from my Iowa and Nebraska State Show Champions. (Trapnested. My prirces are no higher than from common stock. Mating list. C. G. Gould, Alma, Neb.

BLAKELAND EVERLAYERS, SINGLE COMB White Leghorns. The famous Tancred high-laying strain. Breeding birds, hatching eggs and baby chicks. Place orders now. Quality the best only. Satisfaction guaranteed. Blakeland Farm, Littleton, Colo.

EXTRA GOOD SINGLE COMB WHITE LEGHORNS. Our flock is mated to produce results. Pure white beavy layers mated to sons of bigh record hens. (272 to 307 eggs per year at Oregon station). Eggs $7 per 100, setting, $1.50; order now. E. D. Allen, Route 1, Hastings, Nebr.

PLYMOUTH ROCKS

CHOICE BUFF ROCKS—EGGS, 15, $2; DELIVered. J. W. Ragan, Medicine Lodge, Kansas.

PURERED BUFF ROCK EGGS, $3 PER 15; PER 30, $5. Barbara Clinkenbeard, Wetmore, Kan.

PUREBRED WHITE ROCK EGGS $2 PER 15; $7 per 100. Mrs. Elsie Holderness, Dillwyn, Kansas.

BUFF ROCK EGGS, QUALITY, SIZE AND LAYers; $8 per bundred. W. K. Stillings, Cummings, Kansas.

RINGLET BARRED ROCK EGGS AND DAY-OLD chicks. Write for prices. Mrs. C. N. Bailey, Lyndon, Kans.

RINGLET STRAIN BARRED ROCKS, FINELY barred, big boned; no better any where; 16 eggs $2. T. E .Moore, Akron, Colo.

BARRED ROCK EGGS FROM GOOD LAYING fowls. Open range. $1.50 for 15; $8.50 per 100. Mrs. Geo. Stewart, Aroya, Colo.

WINTER LAYERS! BARRED PLYMOUTH ROCK eggs, 15 for $1.50; 50 for $4.00. Mrs. Lon Edwards, 1039 Garfield Ave., Loveland, Colo.

WINTER LAYERS; BARRED PLYMOUTH Rock eggs for hatching; $2.00, 15; $7.00, 100. Mrs. J. Thompson, 1105 Garfield, Loveland, Colo.

BARRED ROCK EGGS—HEAVY LAYERS; RED-eyed; nicely barred, 15, $1; 50, $3 select pen; dark mating; good value, 15, $2. Mrs. D. Ward, Ames, Kansas.

BARRED ROCK EGGS—HEAVY LAYERS; RED eyed; nicely barred, 15, $1; 50, $3. Select pen, dark mating, good value, 15, $2. Mrs. D. Ward, Ames, Kansas.

BUFF ROCK EGGS, FROM PRIZE WINNING stock, 100, $7; 50, $4; 200-egg Mandy Lee incubator, good as new, $25. Maggie Stevens, Humboldt, Kansas..

WHITE ROCK EGGS—GUARANTEED PURE, booking orders now; $2 per 15, $5, 50; $8, 100; cockerels, $4 each, three for $10. F. D. Webb, Sterling, Kansas.

BARRED ROCK EGGS FOR HATCHING, FROM pens, either light or dark, $3 for 15; from range flock, $6 for 100. Send for mating list. Chester Blunt, Route 1, Greeley, Colo.

LAYMORE BARRED ROCKS—Eggs $5.00 for 15. Baby chicks 50 cents each: Nebraska State Fair and Missouri first prize winners. First in Colorado in profit with over $70 each in 1918. Rhode Island baby chicks, $20.00 per 100. J. R. Anderson & Son, Ft. Morgan, Colo.

PARK'S 200 EGG STRAIN BARRED ROCKS. Utility eggs for hatch; 15, $2; 30, $3.75; 100, $8. Pedigreed 15, $2.50; 30, $4.50; 100, $10. Parcel post prepaid. R. B. Snell, Colby, Kansas.

BARRED PLYMOUTH ROCKS—THOMPSON strain. Dark narrow barring, barred to the skin, big-boned, bred for beauty, size and eggs. Special mating $5 per 15. Farm range, $2.50, $10 per 100. A. N. Waecbter & Son, Yuma, Colo.

BARRED ROCK EGGS FROM GRAND SPECIAL matings, 15, $5; 30, $9. Range flocks, 15, $2; 100, $10. Our strain bred for extreme exhibition and heavy egg laying qualities. Ahlquist Bros., Box A, Florence, Nebr.

EGGS FOR HATCHING—PUREBRED WHITE Plymouth Rocks, Fishel strain, world layers, also Golden Egg Tonic. Keep your hens healthy and laying. Satisfaction guaranteed. Mrs. W. F. Christman, Scottsville, Kans.

FOR SALE—BEST WHITE ROCKS IN THE West. Seven mated pens; pullets and cockerels to offer; setting eggs, $3.00 and 5.00. Last January at Denver Stock Show we won First Cockerel, First Pullet, First Hen, and many other prizes. F. L. Toliver, Ft. Collins, Colo.

HILL'S BARRED ROX. MY BIRDS WON HIGHest honors this season at Omaha, St. Louis, Mo., and Nebr. State Shows. The only flock in the state whicb has raised and exhibited a blue ribbon winner at a Chicago show. A few extra choice cockerels at $10 eacb; eggs from 6 good pens, $10 per setting. None better; satisfaction guaranteed. O. R. Hill, North Loup, Nebr.

RHODE ISLAND REDS

PUREBRED SINGLE COMBED, EGGS 15 FOR $1.50; 100 for $7. Edna Knisely, Talmage, Kans.

BEAUTIFUL ROSE COMB REDS. EGGS 30, $3, baby chicks 20c, postpaid. Lucy Ruppentbal, Lucas, Kansas.

ROSE COMB RED CHIX, $18, 100. EGGS FROM prize winners, $2.50, $3.00 per 15. Mrs. R. E. Hailey, Wilsey, Kansas.

THOROUGHBREDS ROSE COMB RHODE Island Reds. .Hatcbing eggs, $7, 100. Minnie Messing, Wiggins, Colo.

S. C. RHODE ISLAND REDS; HEAVY LAYING strain. Eggs $2 per 15; $8 per 100. Mrs. Roy Hickson. Valley, Nebr.

EGGS—S. C. RHODE ISLAND REDS, STANDard bred, prize winning stock, $3 and $5 per setting. V. B. Newell, Stafford, Kansas.

EGGS IN BOTH COMBS FROM OUR STATE show winners; $3 per 15. Ask for mating list. Brumley Red Yards, Wellington, Kansas.

FANCY PUREBRED RHODE ISLAND RED EGGS for hatching; $2 per setting, $10 per bundred. Mrs. F. V. Hawley, Belpre, Kansas.

PUREBRED ROSE COMB RHODE ISLAND RED eggs, $2 for 15; $10 per 100. Baby chicks, 25 cents each postpaid. C. S. Holtzinger, Ellis, Kansas.

PETERSON'S HIGH CLASS SINGLE COMB Rhode Island Reds. Write for prices and hatching eggs. Three pens. Nels W. Peterson, Mason City, Nebr.

VELVET ROSE COMB RHODE ISLAND RED eggs, 15, $2; Range, 100, $8. Bourbon Red turkey eggs, $5 per 11. Mrs. Mina Johnson, R 1, Erie, Kansas.

S. C. COCKERELS, HENS AND PULLETS; $5 eacb, mated trios $12. Bred from prize-winning stock. Eggs $1.50 for 15. A. W. Pbipps, Evanston, Wyo.

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

LOWER'S POULTRY FARM, ARVADA, COLO. is the oldest and largest breeder of tboroughbred S. C. Rhode Island Reds in the West. Our stock is line bred, from selected heavy laying type for seventeen years. Eggs for hatching, $12 per 100, $5 for 30. Send for catalog and price list of stock and baby chicks.

HARRISON'S FAMOUS, "EXHIBITION EGG strains." single and Rose Comb Reds. Show-winning, non-setting, developed layers. "Red breeding bulletins," and mating lists on request. Robert Harrison, The Red Man, Lincoln, Nebr., Station C.

WYANDOTTES.

PARTRIDGE WYANDOTTES—CHOICE STOCK and eggs. Fred Karre, Cotesfield, Neb.

GOLDEN LACED WYANDOTTE EGGS FOR hatching. Wm. Schreiner, Exeter, Nebr.

WHITE WYANDOTTE EGGS 15 FOR $1.50. Post paid; 100, $6. Angie Archer, Grenola, Kansas.

COLUMBIAN WYANDOTTES, STOCK AND EGGS in season; also fancy pigeons. J. J. Pauls, Hillsboro, Kansas.

WHITE WYANDOTTES — HEAVY LAYING strain, eggs $2 per 15, $7 per 100, prepaid. H. M. Savery, Cedar, Kansas.

COLUMBIAN WYANDOTTE EGGS, FROM HIGH class, free range stock; 15 eggs $2. Orvel Sharits, Route 5, Newton, Kansas.

SILVER WYANDOTTES. HAVE A FINE GOOD cockerel left; eggs, yards Nos. 1 and 2; $5 for 15; No. 3, $5 for 50. M. B. Caldwell, Brougbton. Kansas.

WHITE WYANDOTTE EGGS FROM LARGE bone, 7 to 8 Ibs. hens, 8c each in lots of 30 or more. Wm. A. Draves, Lemoyne, Keith Co., Western Nebr.

SILVER WYANDOTTES; WON BLUE IN 8 State Shows. Cockerels, $3, $4, $5; eggs $3; two settings, $5, parcel post prepaid. Free mating list. Chas. David Flanders, Springbill, Kansas.

ORPINGTONS.

BUFF ORPINGTON COCKERELS, COOK STRAIN $3 to $5 P. A. R. Unrub, Pawnee Rock. Kansas.

PUREBRED BUFF ORPINGTON EGGS, $1.50 15; $7.50 100. Mrs. C. H. Headberg, Axtell, Nebr.

EGGS—BUFF ORPINGTONS. FROM VERY choice birds, 15, $2; 30, $3.50; 50, $5. Cora Charlton, Little River, Kansas.

HIGH CLASS BUFF ORPINGTON EGGS FOR hatching. Winter laying strain, $2.50 for setting of 15, $6 per 50, $10 per 100. Good hatch and satisfaction guaranteed. Mrs. J. W. Lee, Bridgeport, Neb.

BUFF ORPINGTON—IN A LARGE CLASS, I won more firsts at this year's Kansas State Sbow than all others combined. Eggs for hatching from choice matings at $3.00 up. Write for ist. Carl W. Moore, Topeka, Kan.

ANCONAS.

SUNNYSIDE EGG BRED S. C. ANCONAS—THE world's greatest egg machines; they hold the world's record for egg production. Do you raise chickens? Then why not raise the best. Our Anconas are from the best egg-producing strain in the world. We have culled and reculled our flocks until only the best are left, so you may be sure they have the egg qualities bred into them. 90 per cent fertility guaranteed. Exhibition pens, $5 per 15; pens of selected layers, $10 per 100, $2 per 15; order your baby chicks now, a big batch April 9; Chicks, $20 per 100; 25c eacb for 50 or less. Mrs. J. B. Shenk, La Junta, Colo., Box L, R. F. D. 2.

LANGSHANS.

PURE BLACK LANGSHANS. .COCKERELS, $5, hens, $2.50; eggs, 15, $2; 100, $7. Mary McCaul, Elk City, Kansas.

BLACK LANGSHANS, FARM RAISED. EGGS, 15, $1.50; 100, $8; chix, 20c. Mrs. S. W. King, Solomon, Kansas.

BLACK LANGSHANS, SHOW WINNERS, EGG producers. Cockerels, $3 up. Eggs, $3 and $5 per 13. O. I. Moon, Ft. Morgan, Colo.

PRIZE WINNING BLACK LANGSHAN EGGS $2 setting. Winter laying strain; all first and second prizes County Fair. First prize Nebraska State Fair. R. Montgomery, Dennis, Kansas.

BRAHMAS.

PUREBRED LIGHT BRAHMA EGGS, $2 FOR 15, $10 per 100. Baby chicks 25c eacb, postpaid. C. S. Holtzinger, Ellis, Kansas.

SETTINGS FROM THOROUGHBRED, LIGHT Brahmas. Greatest of winter layers. Prices reasonable. E. Grosser, 2240 Perry, Denver, Colo.

MINORCA.

S. C. B. MINORCA EGGS, $7, 100; 15, $1.50. L. Schul, Minneola, Kansas.

BLACK MINORCAS, BUFF ORPINGTONS, EGGS, chicks. Frank A. Agnew, Southside, Omaha, Nebraska.

SINGLE COMB BLACK MINORCA EGGS, (Pape's strain), excellent layers. Hans Jufgenson, Overton, Nebraska.

HAMBURG.

SILVER SPANGLED HAMBURG EGGS, CHICAgo, Kansas City, St. Louis, Denver, Lincoln, Wichita, Dallas, Oklahoma City winners, $3 per 15; $5 per 30. Roland Talbott, Waukomis, Okla.

TURKEYS.

THOROBRED MAMMOTH BRONZE TURKEY eggs, $3 per 10, $25, 100. Everett McKim, Lamar, Colo.

TURKEY EGGS FROM 16 TO 20 POUND M. B. bens, large bone, 50c each. Wm. A. Draves, Lemoyne, Keith Co., Western Nebr.

PRIZE WINNING BRONZE TURKEYS—Denver tropby winners for five years. Toms, $15 up. Some good barred rock cockerels, $3.00. Eggs for batcbing. Mrs. L. P. Stone, Lexington, Nebr.

PURE BOURBON RED TURKEY EGGS, $6 PER 12. White African Guinea eggs, 10 cents each. Single comb White Leghorn eggs, $6 per 100. All eggs postpaid and guaranteed. Vivian Anderson, Oswego, Kans.

SEVERAL VARIETIES

CHOICE WHITE ROCK COCKERELS, WHITE Guineas, Buff Orpington ducks. Mrs. Chas. Snyder, Effingham, Kansas.

S. C. R. I. RED EGGS, $1.25 SETTING, $7 hundred. R. C. White Leghorn eggs $1 setting, $6 hundred. Harry Knoll, Portis, Kansas.

MODLIN'S POULTRY FARM, LARGEST IN THE West. Hatching eggs, free circular. Write today. Thirty best varieties. Route 7, Topeka, Kansas.

CLAY COUNTY POULTRY AND PET STOCK AS-sociation, 100 members. All breeds and varieties. Directory free. Sec'y. H. L. Boge, Harvard, Neb.

WISCONSIN SPECIALIST DISCOVERED HOW to distinguish sex of eggs. Price $1.00, money back if dissatisfied. Agent, Box 29R, Summitville, Indiana.

EGGS FROM SELECTED PENS; BUFF ORPINGtons, and Bradley Barred Rocks, $3 per 15; $5 per 30. Choice cockerels for sale. Archdale Farm, Fremont, Neb.

BUFF ORPINGTONS AND SILVER SPANGLED Hamburgs. Orpington eggs $7 hundred, $1.25 setting. Hamburg $1.50 setting of 15 eggs. Leslie Chrestenson, Route A, Akron, Colo.

BUFF- LEGHORNS, RHODE ISLAND REDS—best layers on earth. Headquarters for cockerels, baby chix; hatching eggs. Write us your wants. Champney, 2057 South Broadway, Denver.

COLUMBIA HATCHERY—WE CAN SUPPLY you with any quantity of Baby Chicks. We have 14 varieties including all leading breeds. Write for our prices, you will save money. P. O. Box 1102, Denver, Colo.

YOU BUY THE BEST CHICKS FOR THE LEAST money, from the Colwell Hatcbery, Smitb Center, Kansas. 150,000 to be shipped everywhere; 18 cents each, 500 for $89; guaranteed alive or replaced free.

SAVE 33 PER CENT ON YOUR CHICKEN FOOD bill with the use of our Sanitary Poultry Roost We guarantee to kill all lice and mites within two weeks or money refunded. Ford and Thurston, 2531 Fairfax St., Denver, Colo.

BABY CHICKS—BARRED AND WHITE ROCKS, Reds, Buff Orpingtons, White Wyandottes, Anconas, White, Buff, Brown Leghorns, 18 cents. Single comb black Minorcas, Light Brahmas, 20 cents, prepaid. Live delivery guaranteed. Kansas Poultry Company, Norton, Kansas.

YOUNG'S 265 EGG WINTER LAYING STRAIN single comb white Leghorn eggs, 15, $1.50; $7 hundred. Money makers. Prize winning Partridge Wyandotte, Premier mahogany stain, eggs, 15, $2; hundred, $8. Hens cleared $4.27 each last year. E. N. Montgomery, Dennis, Kansas.

IMPROVE THE FARM POULTRY AS YOU DO your cattle and hogs. The farmer is beginning to realize that poultry, scientifically bred to egg production, improves the farm flock and increases his profits in these times of dollar eggs. Look ahead a year. You probably need new poultry blood this year and will buy a cock bird to furnish it, but for next year—buy Harr's baby chicks now. Your new blood will cost you nothing. For the price of one good cock I will sell you 100 baby cbicks from heavy egg producing stock. Buy these chicks now and next fall you will have plenty of fine cockerels for your own use; also you will have several pullets and the money you can realize on your surplus cockerels will pay the entire expense feed and all. I can offer you ten breeds as follows: Rhode Island Reds, White Leghorns. Barred Plymouth Rocks, Black Minorcas, White Orpingtons, White Plymoutb Rocks, White Wyandottes, Buff Orpingtons, Buff Plymouth Rocks, and Anconas. Even tho my flocks contain many prize winners, I can offer chicks at the following prices: Twenty-five chicks, $6.25; 50 chicks, $12; 100 chicks, $22; 500 chicks, $105; 1,000 chicks $200. Order direct from this ad. Full live delivery guaranteed by Parcel Post. I ship by Parcel Post, special delivery and will guarantee live delivery of every chick. Can make shipment within two weeks after receiving order. Send 25 per cent casb with order and balance few days before shipment. Dean Harr, Box G 502, Wichita, Kansas.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HOGS

FOR SALE—PUREBRED O. I. C. BOARS AND gilts; also bred sows. J. H. Gilbert, Box 397, Brighton, Colo.

FOR SALE—REGISTERED BIG TYPE DUROC-Jersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

FOR SALE—REGISTERED DUROC JERSEY pigs of Col. and Orion Cherry King breeding; prices reasonable. Geo. S. Turner, Canon City, Colo

FOR SALE—POLAND-CHINAS "BIG TYPE" bred gilts, spring boars, fall pigs; all registered. Write for information. F. L. Toliver Stock Farm, Ft. Collins, Colo.

FOR SALE—THREE DUROC JERSEY SOWS, bred to a son of the Grand Champion at Denver, 1919. Four young boars and one yearling boar. Roy E. Dickson, Route A, Calhan, Colo.

STOCK HOGS WANTED—WE WANT TO BUY several hundred bead of pigs and hogs weighing from 60 pounds up. Let us know what you have for sale. Write Duroc Farms, 412 Cooper Building, Denver, Colo.

REGISTERED BIG TYPE DUROC JERSEY boars and gilts, the kind that brings the money at the block. Fashionably and strongly bred by our berd boar, Orion Cherry King 15tb, and out of Defender sows. We are sold out on anytbing up to July farrow. Money back if not satisfied. J. O. D. Ranch, Aroya, Colo.

I HAVE NOW FOR SALE THREE OF THE finest Registered Duroc Jersey Gilts you ever saw, farrowed last July. They were sired by the largest boar for his age, at the Pueblo State Fair, and they have produced some prize winners at the Pueblo and Denver fairs. There are only three of these left, so write quick. J. N. Caldwell, Willow Grange Farm, Littleton, Colo.

CATTLE

FOR SALE—3-YEAR-OLD REGISTERED AYRshire bull. T. H. Dillon, Jr., Bethune, Colo.

FOR YOUNG CALVES, WRITE TERWILLIGER, Livestock Exchange, 289 Lake St., Milwaukee, Wis.

FOR SALE—14 HIGH GRADE HOLSTEIN MILK cows and bull; good milkers, paying $75 per month, no grain fed; will give fine results on pasture. Seven freshen in summer. Write me, 2½ miles south of Lakewood. Clark Davis, Edgewater, Rt. 2, Colo.

REGISTERED HEREFORD BULLS — ABOUT thirty coming yearlings, two coming two-year-olds, and one 5-year-old bull, tbe sire of the others, and one of our herd bulls. All best Anxiety breeding, well marked, big boned, and not pampered with flesh to hide their defects. Priced to sell. J. O. D. Ranch, Aroya, Colo.

POSITION WANTED.

POSITION WANTED—ON PUREBRED DAIRY farm, by Colorado Agricultural College graduate, witb plenty practical experience. Only profit sharing proposition considered. Write. Box 2-L, Western Farm Life.

HORSES.

FOR SALE—SIX REGISTERED PERCHERON stallions—one my herd sire, King Link, No. 88104, seven years old—and five of his colts. As I wish to sell all my horses, I am making low prices. R. A. Cbace, Ft. Morgan, Colo.

LIVE COYOTES.

WANTED—LIVE COYOTES, OLD AND YOUNG. Write T. B. MATHIAS, 2916 W. 32d ave., Denver.

PET STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

RUNTS PIGEONS FOR SALE. JOHN KRANZ, Box 332, Winnemucca, Nevada.

NURSERY STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

DO YOU WANT A BARGAIN ON WELL-ROOTed and brancbed Cherry, Apple, Pear, Peach and Plum trees and berry plants? Ask for our free instructive and humorous catalog with prices lower than other first class nurseries. Manhattan Nursery, formerly Manhattan, Kans., now Topeka, Kans.

ADDITIONAL CLASSIFIED ON NEXT PAGE.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

SUDAN GRASS SEED. HUNDRED POUNDS, $18. Sacks free. Is pure, Colorado grown stock; high germination. Long Seed Company, Boulder, Colorado.

GOOD CLEAN RED AMBER CANE SEED $2.20 per 100 lbs., sacked F. O. B. Lamar, Colo. Satisfaction guaranteed. S. F. Webb, Utleyville, Colo.

SEED BARGAINS—ALFALFA, $12.50 BU.; TIMothy, $5.50; Orange or Red Amber caneseed, $1.75; Amber caneseed, $1.50; White caneseed, $2; Suame or Sourless caneseed, $1.75; German Millet, $2.80; common or western millet, $1.75; oats, $1.25; barley, $1.70; white sweet clover, $20; red clover, $30; alsike clover, $30; kafir, $1.85; feterita, $2; Milo Maize, $2; Serrock kafir sorghum, $2.25; Reid's yellow dent seed corn, $3; Boone County white seed corn, $3; Sudan, $14 cwt.; Red Top, $15 cwt. Sacks free. Satisfaction or your money back. Order now before another advance. We live where the seed grows; we ship from several warehouses and save you freight. Liberty bonds accepted at par. We allow 3 per cent discount on 10 bushel orders; let us have that order now, if we don't please you, all you have to do is to tell us about it, and your money will be refunded to you together with freight charges you have paid out; you can't lose a cent in this dealing with us. Meier Seed Company, Russell, Kansas.

STRAWBERRY PLANTS.

STRAWBERRY PLANTS—DAHLIA BULBS, 150 kinds. Write for prices, all kinds nursery stock. McMullen Nursery, Box 374, Council Bluffs, Ia.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—IMPROVED 480 ACRE STOCK AND farm ranch. George Wortham, Neiber, Wyo.

WANTED—TO HEAR FROM OWNER OF FARM for sale. Mrs. W. Booth, H. P. Sta., Des Moines, Iowa.

IF YOU WANT TO SELL OR EXCHANGE YOUR property, write me. John J. Black, 33 St., Chippewa Falls, Wis.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wisconsin.

CALIFORNIA FARMS NEAR SACRAMENTO FOR sale; easy payments; write for list E. R. Waite, Shawnee, Oklahoma.

IDAHO LAKE REGION OPPORTUNITIES—Farms all sizes and prices for sale. Peter Johnson, Sandpoint, Idaho.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

FARM AND CATTLE RANCHES—CHOICE LIST. If interested call or write F. E. Wrockloff, Merchants Bank, Seventeenth and Curtis Streets, Denver, Colo.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description, location and cash price. James P. White, New Franklin, Mo.

REAL ESTATE WANTED—SELL YOUR PROPerty quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., Dept 11, Lincoln, Nebr.

FOR SALE—RANCH, 120 ACRES IMPROVED, 6-room house, large barn, fine orchards, first-class water right. For particulars write Peter Hansen, Grand Valley, Colo.

DON'T OVERLOOK THIS.—OWNER WILL SELL seven hundred acre stock farm. Thirty miles east Denver. Subirrigated bottom; trees and springs. Wonderful proposition. Immediate possession; easy terms. Write. Box 151, Hudson, Colo.

"LAND OFFERINGS" ALONG THE KANSAS City Southern Railway, contains a list of improved and unimproved lands for sale at all stations of this railroad in Missouri, Arkansas, Oklahoma, Louisiana and Texas, together with reliable information concerning the towns and county in which they are located. Write for information to Forest K. Woodruff, 411 K. C. S. Bldg., Kansas City, Mo.

LANDS IN NORTHEASTERN NEW MEXICO, $15 to $30 per acre, producing excellent crops of wheat, oats, corn, kafir, beans, alfalfa, fruits, vegetables. Great dairying and stock raising section. Cheap grazing lands. Healthful climate, ample rainfall, altitude 5,200 feet. More farmers needer. Lands advancing in price with increased farming and population. For free illustrated booklet address Earle G. Reed, Agricultural Agent, Colorado & Southern Railway, Room 713, Railway Exchange Bldg., Denvere, Colo.

COME TO MOFFAT COUNTY—NO HOT WINDS, tornadoes nor crop failures. Good well water 10 to 30 feet; springs on many ranches; deep rich soil; free range in National forests, fence posts, timber and saw mills; excellent schools, the one at Craig ranking in the highest class in the state. Wheat with good farming yields 20 to 45 bus., alfalfa yields well without irrigation. An ideal grain and stock country. Fine improved land, $12 to $40. Come now and take advantage of the rise in prices which is just beginning. Full information sent. Craig Realty Co., Craig Colo.

ATTENTION STOCKMEN — WE HAVE TWO stock ranch bargains. Just what you are looking for; each ranch comprises 320 acres deeded land with substantial improvements and large acreage under irrigation, and in alfalfa, timothy, clover hay, unlimited outside free range, with 4,000 acres of leased land under fence for fall pasture. These ranches are located three miles apart, 125 miles from Denver. Good shipping point, big money makers. Prices $12,000 and $13,600 on good terms. See us at once for these. Reynolds, Covey & Reynolds, 625 Exchange Bldg., Denver, Colo.

PLOWING CONTRACTS.

WE HAVE A NUMBER OF CUSTOMERS WHO want plowing contracts. They have our Heavy Duty Leader Tractors and Oliver Mouldboard and disc plows as well as tandem disc harrow and packer pulverizers and will do you good work. What have you to do, and what are you willing to pay? Write us fully. John Thams & Son, Distributors, Tractors and Farm Machinery, 1434-44 Wazee St., Denver, Colo.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

EXPERIENCED IRRIGATORS WANTED—WANted three experienced irrigators on large farm near Grand Junction. Good pay for experienced men, capable of taking full responsibility for results on acreage in charge. House furnished if have family. Position throughout year if make good. Write, stating age, experience in full, family if any, and references, or apply in person, in afternoon, to Chas. Toner, 702 Kittredge Bldg., Denver.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

RED CEDAR SPLIT FENCE POSTS. GUARanteed full size and A-1 quality. You pay after unloading. Send for booklet and prices delivered your station. Kirk Co., Box 1138-S Tacoma, Washington.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

ALFALFA MILL.

COMBINED ALFALFA MILL AND ENSILAGE cutter in first class condition. Price new $550, will take $250 cash. Write or phone C. E. Stretcher, Aurora, Colo.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

TYPEWRITER

GOOD TYPEWRITER FOR SALE CHEAP—FREE trial, easy payments if wanted. Write Bertha Payne, Shawnee, Kansas.

BOOKS.

FUNNIEST BOOK IN PRINT. SEND 25 CENTS for "The Diary of a Doctor's Son." Pacific Book Company, 7036 Holmes Avenue, Los Angeles, California.

TANNING

LEATHER TANNING RECIPES. ONE FREE guaranteed cheap way. Agents wanted. R. N Gilley, Carlton, Texas.

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24TH 1912, OF "WESTERN FARM LIFE," PUBLISHED SEMI-MONTHLY AT DENVER, COLO. —FOR APRIL 1, 1920.

State of Colorado, County of Denver. Before me, a notary public in and for the state and county aforesaid, personally appeared H. C. Hardison, who, having been duly sworn according to law, deposes and says that he is the business manager of the Western Farm Life, and that the following is to, the best of his knowledge and belief a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor and business manager, are:

Name of publisher—W. S. Edmiston, Denver, Colo.
Editor—None.
Managing Editor—Alvin T. Steinel, Denver, Colo.
Business Manager—H. C. Hardison, Denver, Colo.

2. That the owners are:

The Western Farm Life Publishing Co., Denver, Colo.
W. S. Edmiston, Denver, Colo.
Alvin T. Steinel, Denver, Colo.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortages or other securities are: None.

4. That the two paragraphs next above giving the names of the owners, stockholders and security holders, if any, contains not only the list of stockholders and security holders as they appear upon the books of the company, but also in cases where the stockholders or security holder appears upon the books of the company, as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association or corporation has any interest, direct or indirect, in the said stock, bonds or other securities than as so stated by him.

H. C. HARDISON,
Business Manager.

Sworn to and subscribed before me this 1st day of April, 1920.

OLIVE T. LEWIS,
Notary Public.

(My commission expires Dec. 2, 1923.)

Witch's Island.

(Continued from Page 27).

"You were speaking of him as a human being, were you not?" she asked lightly, and yet, it seemed to me, a bit nervously.

"Well, we've got to deal with humans, you know," said I. "You've seen the hard side of him, the rough side, the stubborn side, when he wouldn't do what you wanted him to do: and you've seen ——"

"I have seen enough to make me regard him with the highest respect and esteem," she said. On paper her words read primly, to the ear they gave a very different impression.

"Umph! Respect?" said I. "Respect and esteem? Very good as a starter, we'll admit, but——"

There was a heavy step by my chair, and a heavy hand fell on my shoulder.

"Scott!" Grayson warned.

"You're intruding," I told him. "This is a private and very interesting conversation. That it happens to be about you is no——"

There I broke off, for he had dragged me from the chair.

"With your kind permission, I will undertake the discussion of my affairs—for myself," said he, and dropped into my place.

"Good!" I cried, then dashed for the head of the companionway, intercepting Mrs. Vincent as she stepped on deck. Her I escorted, a bit violently, far aft, making talk the while of a sort which might have warranted her in thinking me out of my wits.

But, chatter as I might, she looked back. So did I. Moonlight is tricky, as has been said, but my eyes deceived me sorely if Grayson, bending forward, had not taken possession of Edith Perham's hand. And I didn't believe he was haggling over salvage.

Mrs. Vincent laughed her high-pitched, musical laugh, and I cared not if there was in it a trace of cynical mockery.

"What a wonderful night!" she murmured. "Ah, the romance of Witch's Island is hovering over us."

"Dear lady, you err," I told her. "Our romance doesn't have to hover about any longer. It's right here—aboard us—and it's working out to perfection, as every true romance should!"

END.

Raising Chicks in the Old-Fashioned Way.

(Continued from Page 36).

to go) with her brood, I set up her little door, propping it with a weight of some kind. Shut the shed door and never before nor after have I had such undisturbed rest through the chick raising season. There was absolutely nothing to fear from rats, rain, coyotes, skunks, or anything. No matter how warm the nights, the chicks had plenty of air through their screen top. Mr. Rat could sniff and sneak and sniff again and go wild with longing to crawl on top or dig under, it was all the same old story of "so near and yet so far"; never a feast could he procure at my expense.

The dreaded high winds of eastern Colorado were also thus baffled of part of their prey; not a single coop could they overturn. Each hen was shut fast in her own room. If I wanted to indulge in an extra nap on Sunday morning, I knew of a certainty that they were neither fighting among themselves nor spitefully peeling the innocent heads of their neighbor's children.—Frances H. Brown, Kit Carson, Colo.

Prepare for Futurities.

The time is drawing near for the nomination of the herds of hogs in the various futurities. These shows are worth while. The March litters will stand the best chance except in the State Fair futurity of Colorado, which calls for September farrowed litters. The futurities are the means of encouraging the development of good hogs, that otherwise may not be given a chance.

It costs $5 and $10 to nominate herds in the various futurities. This money is used later in the payment of premiums. Those who are interested should communicate with J. L. Beaman, Manager of the Colorado State Fair. In the case of district shows, get in touch with the local fair secretary.—H. A. L.

Eat More Lamb.

"It's hard," said the sentimental landlady at the dinner table, "to think that this poor little lamb should be destroyed in its youth to cater to our appetites."

"Yes," replied the smart boarder, struggling with his portion, "it is tough."—Exchange.

Getting His Money's Worth.

Western Farm Life:

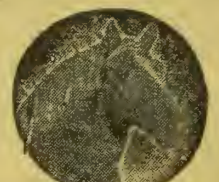
I received your letter stating that I neglected to send for premium. I was not aware of the fact that you are giving premiums with each subscription. I thought I was getting far more than the value of my dollar in the papers. Practical Farming is my choice of the premiums and I want to thank you both for notifying me and for the book.—Jesse D. Lewis, Ramah, New Mex.

Livestock Field Notes.

Mr. Otto Ramstetter of Golden, Colo., is offering some fine Registered Shorthorn calves of both sexes. These calves are 6 weeks old, and of choice breeding. Their pedigree traces back to Choice Goods, the St. Louis Worlds Fair Grand Champion. Read his ad in this issue on the Livestock pages.

H. C. DENNIS, Auctioneer
FORT MORGAN, COLORADO
Registered Shorthorn and Jersey Cattle
Real Estate Sales Conducted. I can sell your real estate if it can be sold.
Wire at my expense for dates.
Phone: Res. Morgan 155J; Office Morgan 15

Registered Breeding Bulls and Heifers
HEREFORDS
SHORTHORNS
Young sctock of both sexes for sale at all times. Our sales yard is located within two blocks of The Denver Union Stock Yards. We are pleased to show our stock at all times.
THE LOWELL PUREBRED CATTLE CO.
Union Stock Yards, Denver.

Glendale Stock Farm

Irvindale Rowdy Grand Champion Belgian Stallion Chicago, 1917, Denver, 1918 and 1919
Breeders of
BELGIAN HORSES
and
POLLED HEREFORD CATTLE
Young Stock Always for Sale
J. D. BRUNTON, Aspen, Colo.

Registered Hereford Cattle
Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), BEAU ASTER
Sire of the dams of these champions.
Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.
FULSCHER & KEPLER
Holyoke, Colo.

REGISTERED
DUROC JERSEY HOGS
'BRED GILTS FOR SALE.
R. C. VAN SCOY & SON
Highland Sta., Route 5. Denver
Phone Arvada 105-R-2.

PERCHERONS & BELGIANS
Purebred bay stallions and mares, 2 to 6 years old, weighing 1,800 to 2,150 lbs. The best that the world can produce. Every one has been a first or second prize winner at Denver.
JOS. ROUSSELLE & SONS
SEWARD, NEBR.

COL. H. C. JENNINGS.
Purebred Livestock
AUCTIONEER
Also conduct Sales of Real Estate.
534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

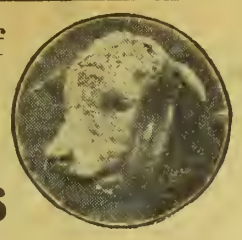
AM TAKING ORDERS NOW FOR SPRING PIGS.
Also a good March Boar left—sired by First Prize Junior Yearling at Iowa State Fair.
AUGUST F. BORGMANN,
R. 1, Box 124, Longmont, Colo.

Forest Glen Shorthorns
We are offering some medium-priced cows and a few choice bulls at attractive prices.
Cornforth Live Stock Co.
ELBERT, COLO.

Regist'd Holstein Bull Calves
Two Ready for Light Service.
Well grown, nicely marked from high producing dams. Sire, Western Sir Colantha Ascalon, he by Western Ascalon Champion Boy, a son of Colorado's Greatest Dairy Cow, and half brother to Colorado's Greatest Dairy Heifer. Write us.
W. B. & E. M. DOWNS, Yuma, Colorado.

Registered Ayrshires
FOR SALE.
Two cows, and their calves. One cow is 4 years old; other is 8 years. Two calves 7 months old. Papers furnished. These Ayrshires purchased from the Colo. Agricultural College.
A. D. BASHOR. Rte. I, BOULDER, COLO.

The Hereford Corporation of Wyoming
Box 876, Cheyenne, Wyoming



Registered Herefords

We Offer For Sale

3 Loads Coming 2-Year-Old Bulls
2 Loads Coming 2-Year-Old Heifers

And can also take care of any breeder who wants a few good bred heifers and cows.

Denver office
406 Live Stock Exchange Bldg.
RAYMOND S. HUSTED, Mgr.

High Class Jerseys

The demand for Jerseys has become so persistent that our Mr. Dixon is now in the east to get another car load. We hope soon to be able to supply the demand.

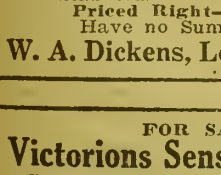
Remember we had the Grand Champions at the Denver Show, in fact, all the Championships.

Only one bull of serviceable age left, but have some corking good calves.

ALSO SOME EXTRA GOOD BRED GILTS.

McCLENAHAN & DIXON, Greeley, Colo.

Edbrooke Durocs



Defender Breeding

REGISTERED
Big Type Duroc Jersey Hogs
Defender Boars *Defender Sows*

DENVER SHOW, 1920 I WON
First Prize Junior Yearling Sow
Second Prize Senior Yearling Sow
The Only Classes Shown

GREEN ACRE FARM
H. W. J. Edbrooke, Prop. 6th & Wadsworth, Denver

Facts in BLACK & WHITE

Purebred Holstein Cattle Save Labor

Whatever the amount of milk or butterfat you wish to produce, is it not better policy to use large-yield cows than to feed and shelter the necessarily greater number of small-yield cows? Use Holsteins and you save labor, feed, stable-room, equipment and risk. They are always healthy and ready for work. Choose cows according to their capacity for converting coarse feed into milk. That is the function of a dairy cow, and that is where the big Holstein excels.

Send for Free Illustrated Booklets. They contain valuable information for any Dairyman.

The Holstein-Friesian Ass'n
186 Hudson Street
BRATTLEBORO, VERMONT

For Sale --- Registered Shorthorn Calves

EITHER SEX—6 WEEKS OLD—$50.

The mothers of these calves have three crosses on top of their pedigree which trace to Choice Goods, the St. Louis World's Fair Grand Champion.

The sire is a grandson of the famous bull March Knight.

Your Chance to Get Some Real Shorthorn Blood.

OTTO RAMSTETTER, Golden, Colo.

Registered Shorthorns

25 COWS

3 to 6 years old; calves by sides, 2 to 6 months old.

Priced Right—Must Sell
Have no Summer Feed.

W. A. Dickens, Longmont, Colo.

FOR SALE.
Victorions Sensation 342521

Farrowed April 1, 1919. An outstanding big type boar, the best of breeding, and guaranteed to please.

WRITE US.

"DALYS DUROCS"
DALY & THOMPSON, Cambridge, Nebr.

BLUE RIBBON HERD

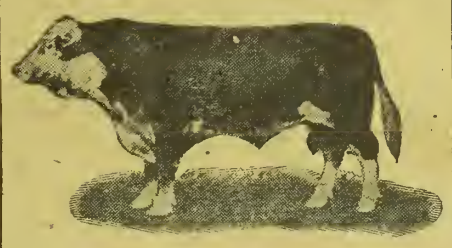
Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.
C. F. Burke, Mgr. Pueblo, Colo.



Verdun Fairfax, 547803.
FOR IMMEDIATE SALE.
Six young bulls of Fairfax breeding, $300 to $500 Also 2 choice herd bulls, and Fairfax Heifers in beginners herds. All stock disease free, and guaranteed.
Prompt Attention to Inquiries.
SNEFFELS LAND & CATTLE CO.
RIDGWAY, COLO.

Polled Herefords

Double Standard
Herd Headed by Polled Dude 2nd 11187, 612340
Beau Donald, P. Plato and March On Blood in the Herd
SMITH LIVESTOCK CO.
Chivington, Colo.

HOLSTEIN BULL CALVES

We have for sale some mighty good ones with fine advanced registry backing. Prices from $150 to $500. Write us.

PAHGRE VALLEY RANCH
Montrose, Colo.

It is better for the orchardist to bruise his shins than his fruit.

DeWITT HEREFORDS

HERD BULL—MISCHIEVOUS JR., by THE HEIR

His dam is Mischievous 3rd, a full sister of BEAU MISCHIEF and the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

L. G. Davis Herefords

ANXIETY BRED

For Sale—3 cars of registered Anxiety Bred Open Heifers in lots to suit purchaser. Can be seen at my Wynnewood ranch six miles from Denver.

WE HAVE A FEW HIGH CLASS YEARLING BULLS FOR SALE

L. G. DAVIS, Saratoga, Wyo.
Or Wellington Hotel, Denver

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
JOHNSTOWN, COLO.

JAMES PONTIAC DEKOL ORMSBY

DUROCS and POLANDS

Get a good boar now to breed sure your fall litters.

We are letting a few go at low prices to make room for spring pigs.

Will have spring pigs for sale June 1st.

Animal Husbandry Department,
Colorado Agricultural College,
Fort Collins, Colorado.

Win-O-Dee Farm Holsteins

Herd Bull KING TWISK SEGIS PONTIAC 182200.

This sire's two nearest dams have a record of 35.38 lbs. butter from 733 lbs. milk in seven days. The average record of his six nearest dams is 34.38 lbs. butter in seven days. **Young Stock of Both Sexes For Sale.**

P. K. HUDSPETH, Pueblo, Colo.
Siloam Star Route.

Wallie Farm Registered
HOLSTEINS

Five excellent A. R. O. records made by two-year-olds in past two weeks. More to follow.

Herd headed by

King Johanna Cedarside Pontiac

One of the best individuals ever sired by King Segis Pontiac Count "Marvel of Sires."

Bull Calves and a Few Heifers For Sale.

W. G. Foster, Owner, 4800 So. Penn.
Phone Englewood 122, Denver.

Douglass Holsteins

FOR SALE.

5 Young Registered Holstein Bulls. Three of these were sired by the son of my $5,000 Penrose bull, Johan Duchess DeKol Lad, sire of world's record heifer. All these young bulls, excepting one, are out of tested 2-year-old heifers running from 22 lbs. down to 15 lbs.

All good individuals—buy one, and raise the quality of your herd.

Write or call.

Mrs. R. G. DOUGLASS
Sanborn Ranch Rush, Colo.

ALWAYS POPULAR

A well known northwestern ranchman, addressing a livestock meeting in March said: "We have heard a lot of so-called experts say that there is no such thing as a dual purpose cow, but everyone knows that the Shorthorn cow that carries a liberal flesh covering and gives a liberal flow of milk is the most profitable and most popular cow on the farms and ranches of this country."

Looking through a western herd an observer noted several cows ranging from 1,800 to 1,900 lbs. in weight, big, fleshy, beefy cows, yet their milk records range from 8,000 to 12,000 lbs. per year each.

Shorthorn steers continually top the leading beef markets.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION,
13 Dexter Park Ave. Chicago, Ill.
Ask for Literature.

MILK RECORDS

Do Not Replace Straight Bates Shorthorn Blood

FOR

Straight Bates Shorthorns are the "foundation source' of the Milking Shorthorns of England and America.

The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

WILLIAM UPP
Livestock Auctioneer

Purebred Hogs a Specialty.
DEER TRAIL, COLO.

LA MARIPOSA

The Carr W. Pritchett Ranch,
Steamboat Springs, Routt Co., Colo.,
has for sale at this time 12 fine bulls from 9 to 20 months old. Sired by LOYAL STAMP. Priced right. Great-grandsons of Whitehall Sultan.

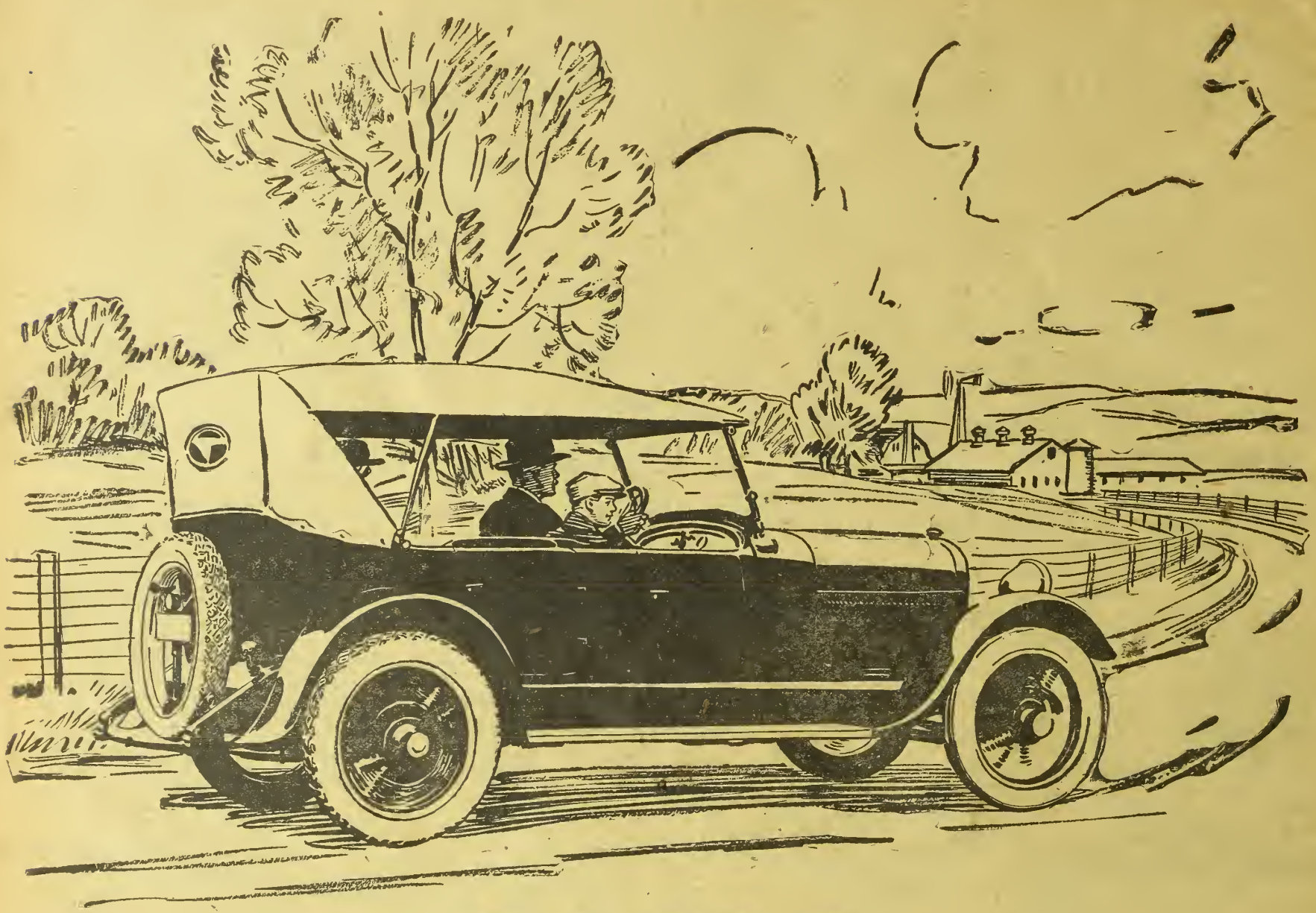
REGISTERED JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.

H. J. VAUGHN, KIRK, COLO.

Let Western Farm Life Service Bureau help solve your farming problems. All questions answered promptly.



PAIGE

The Most Beautiful Car in America

The True Meaning of Economy

Webster defines Economy as the "wise, careful administration of our affairs". Please note that word, *wise*. Also note that there is no reference to cheapness or frugality.

In this definition you will find the proof that Webster was not merely a master of the English language, but a philosopher as well.

The cheap expenditures are never the wise ones. The near-wool clothing, the "marked down" shoes and the cut price harvesting machinery cost less to be sure—*in the beginning*.

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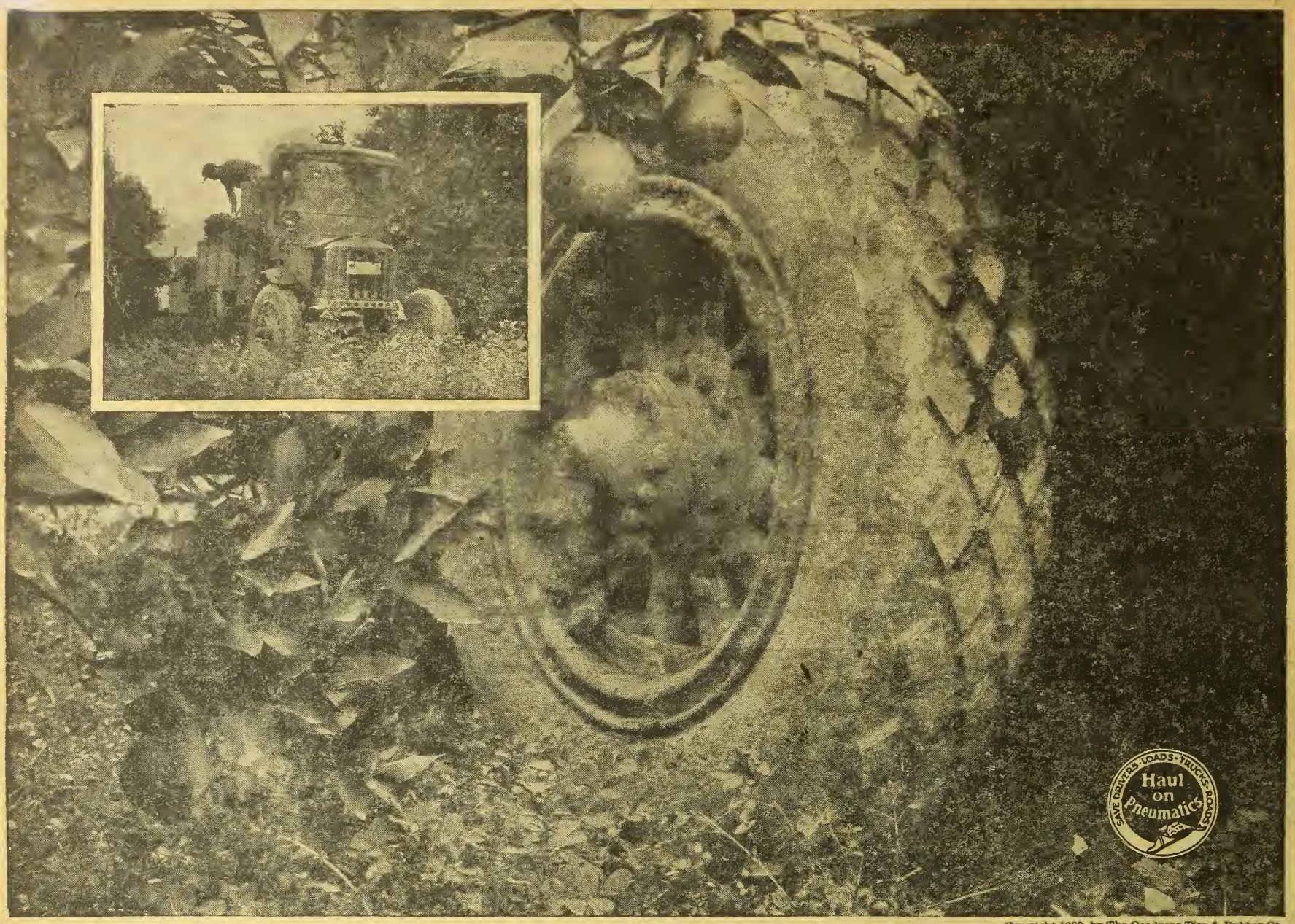
WESTERN Farm Life

Vol. XXII. Denver, Colorado, May 1, 1920. Semi-Monthly

HOLLY HAS FOUND THAT HOLSTEINS PAY. (See Article Page 3.)



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A Western Magazine for Western Farmers and Stockmen

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VOLUME XXII. DENVER, COLORADO, MAY 1, 1920. No. 9.

Black and White Supreme in the Holly District

HOLSTEIN SHOW BRINGS FAME TO THE LOWER ARKANSAS VALLEY

ALVIN T. STEINEL.

M. E. Penrose.

ANY chance visitor who happened into the town of Holly, Colo., on the eight day of April found himself bewildered if he possessed no knowledge concerning a certain breed of dairy cattle, which boasts of black and white as its colors. Streamers of black and white were everywhere displayed. Store fronts were decorated with them. Milk pails, milk cans, evaporated tinned milk seemed to be the leading articles of commerce when one looked in at display windows. On all sides were posters showing contented cows of the Holstein-Friesian breed and placards directing attention to the need for milk and its products in the human dietary. MILK seemed to cry out in big capital letters of black and white from all sides.

It was Holly's fourth annual dairy day. This was strictly a Holstein show. Nothing else had a look-in. This year found seventy entries lined up for judgment, with M. E. Penrose, the veteran Denver breeder, as the judge. There was unusual interest in the judging; first, because that is the way the farmers of the Holly district are learning the game, and second, because of the prominence that had been given Mr. Penrose recently through the sensational sale held on the Windsor Farms at Denver. The dairy farmers of Holly wanted to see what type of animal appealed to the man who had succeeded in bringing out the qualities of $4,000 and $5,000 individuals. They were satisfied when they saw that Penrose did not pick the small ones. They found themselves in agreement with the judge on Colorado Holstein type.

For the benefit of the uninitiated be it said that Holly is the first landing place inside the Colorado line on the ocean-to-ocean airship route. That designation may be a few years ahead of time, so for the present let it go as the gateway to the Arkansas valley. In the past it was a resting place on the famous Santa Fe trail; a granite monument marks the spot where the ox-teams were unyoked and the prairie schooners lined up to form a corral for the night.

But Holly does not live in the past. It is decidedly up to the present with Holstein history making as its chief business. Men of note in the breeding game were there. The district now numbers among its breeders McKay Brothers, formerly of Waterloo, Iowa, who bred the world record cow, Tillie Alcartra. They sold Tillie for $600 when she was a 2-year-old; they had owned her dam and her grand dam. They have others in the herd that may become world beaters; a breeder never knows. The bull they led into the ring in the aged class, Leda Fobes Korndyke Prince (105332), was of their own breeding. He was such an outstanding individual that he won the senior championship hands down.

Another circumstance that added interest to the show was the presence of Mr. Joy Morton, of Lisle, Ill., owner of a 28,000 pound Holstein, a world record for her age. Mr. Morton is a director of the Equitable Life Assurance Society, which company owns a large area of irrigated land in the lower Arkansas valley. He was at Holly as the guest of Mr. W. S. Partridge, manager of the Arkansas Valley Sugar Beet & Irrigated Land Co., owners of the Model Farm, the home of one of the finest herds of Holsteins in the state.

Mr. Morton has had an active part in making Holstein history. At the Milwaukee sale in 1918, where the world's record price for cattle was established with the sale of a 6-months' bull calf for $106,000, Mr. Morton was the bidder who stayed in until the price had gone to $101,000. It has been his policy at Lisle farm to breed the best and his influence has extended to Holly, for he takes a personal interest in the development of the herd there.

At the dinner which followed the cattle judging, Mr. Morton was the principal speaker. The farmers were unusually interested in his talk. To them he represented a class of so-called "millionaire breeders" who are seldom seen except at the big shows. Mr. Morton proved himself to be just a plain farmer-breeder. He got close to his fellow farmers and gave them a practical, helpful talk that indicated genuine interest in the advancement of the breed.

He said that the beef producing business was found to be unprofitable for them on their Illinois farm and he asked his manager to change over to dairy farming. On the manager's recommendation they decided to get Holsteins and good ones. The herd now includes two world's record cows and four that have broken Illinois state records. The cow that made 28,000 pounds as a 3-year-old was bought with a carload of heifers for which Mr. Morton paid $175 each. This cow, when weighing 1,400 pounds, gave 20 times her weight in milk during her record year. As a 2-year-old she produced $420 worth of milk and a bull calf that was sold for $275. In her record year her milk was worth $840 and she brought another bull calf, this one selling for $2,000. Having cost only $175 as a heifer, this wonderful animal is a remarkable example showing that good cows pay.

"The war made prices of feeds very high," said Mr. Morton, "and we know we can't afford to keep boarder cows now. High feed prices are bringing out the high producers because we have to discard the poor ones. What we are doing at Lisle is to go after long distance records and we are succeeding. We are selling cows now to Uruguay and the Argentine, and we have had orders from the Hawaiian Islands, but have not been able to fill them.

"You people in this valley have many advantages over the Illinois dairy farmer. Your climate is a big advantage. I notice that the progeny of your bulls bought from us are in better condition here than the cattle from the same foundation back on our farms. I can confirm all that Mr. Penrose has told you regarding the effect of your glorious climate on your livestock. Then you have an advantage in the price of alfalfa; we pay about $10 a ton more than you do for it; in fact, all of our feeds are higher. In addition to that you are getting the same or better prices for milk than the producers in the Chicago district. You produce your milk very much cheaper than we do and just at present I notice you are getting 15 cents more than we are for your product. We find hogs to be the best condenser of dairy products. Separate your milk, sell your cream, keep your skim milk for the pigs and calves; that's the economical program for the dairy farmer. The Holstein game is a dollars and cents game and we have to look at it from that standpoint."

M. E. Penrose, another of the speakers at the dinner, also gave his talk a practical turn, telling the farmers the type he was emphasizing. He said that the bull on which he made the sale record of $5,000 at Denver recently was bought by him in Iowa, running with a grade herd. He was picked for type and he proved his worth, as one of his daughters now has a world's record and three others are record cows in their class. Mr. Penrose did not know the breeding of this bull till he got him home on the ranch; he bought him because he was a good individual and he emphasized the necessity for selecting breeding stock in that way, and not by the papers alone. On Windsor farm the daughters of fifteen to twenty bulls have been tested and in only one instance had Mr. Penrose failed to select the top daughter of each bull. He declared that it was necessary to advertise our Colorado Holsteins, so that people from other western states, wishing to build up the industry, would come here to buy foundation stock. He urged co-operation among the Holstein breeders to bring this about.

Mr. W. S. Partridge officiated as toastmaster at the dinner and, aside from the two principal speakers, called on several others for short talks. At each plate was a bottle of milk bearing the compliments of Model Dairy Farm and the statement: "This milk is from purebred Holsteins.—Health, Vitality, Nutrition."

Following are the awards:

Purebred Holstein Bulls.

Two years and over—McKay Bros., first; Elmer Wagner, second; Richard Wendt, third.

Under 2 years and over 1 year—American Beet Sugar Co., first; Roy Bloyd, second; Model Dairy Farm, third.

Under 1 year—R. Wendt, first; L. Wirt Markham, second; McKay Bros., third.

Purebred Holstein Cows.

Three years old or over—Model Dairy Farm, first, second and third.

Two years old and under three years—L. Wirt Markham, first and second; Model Dairy Farm, third.

Senior Yearling Heifer—Model Dairy Farm, first and second.

Junior Yearling Heifer—American Beet Sugar Co., first; McKay Bros., second; R. Wendt, third.

Grade Holstein Cows.

Three years or over—George Shell, first; R. Wendt, second; Boetta Bros., third.

Two years and under 3 years—N. Jensen, first; Boetta Bros., second; M. S. Bragg, third.

Senior yearling—Boetta Bros., first; R. Wendt, second; N. Jensen, third.

Junior Yearling—Ray Vroman, first; Boetta Bros., second and third.

Group of four head, purebred Holstein, either sex, get of one sire—McKay Bros., first; Model Dairy Farm, second; McKay Bros., third.

Group of two head puregred Holsteins.

(Turn to Page 21.)

Holsteins lined up for the judge at Holly.

Some of the notables at the show: W. S. Partridge, Joy Morton, Mrs. Morton, Mrs. Fisher, L. M. Fisher.

The 1920 Intermountain Stock Show at Salt Lake

STOCKMEN FROM FOUR STATES GATHER AT MORMON CAPITAL

W. H. OLIN, Agricultural Supervisor Denver & Rio Grande Railroad.

FOUR years ago, Mr. J. H. Manderfield, manager of the Union Stock Yards, North Salt Lake; Prof. Jno. T. Caine III, of State Agricultural College, Logan, Utah, and some of the leading stockmen of the western intermountain region, organized a fat stock show for Salt Lake City and its trade territory. Its beginning was humble, but still it showed its value the very first year. It has each year grown both in interest and the number of livestock shown. This year, Manager E. C. Parsons and his executive committee of the show, made two innovations. The first, was to add breeding classes, and thus encourage stockmen seeking foundation herds, to come to this stock show to obtain same. This would scatter the seed of desirable high quality livestock all over the intermountain valleys of Utah, Idaho, Wyoming, Montana and Nevada.

The second, was to change the time for holding the stock show to the date for the annual Church Conference of Latter Day Saints Church. To this conference come representatives from every stake and ward in the intermountain west, as well as from all the Mormon world. The great percentage of these representatives are rural people and the influence of the stock show wll thus become more widespread because of their attendance during the three days of the conference.

The usual "conference weather," cloudy or stormy, prevailed on the 5th and 6th. Conference closed its three day's session on the 6th and the sun came out on the 7th, the last day of the stock show. This was an ideal day and the attendance was greater than at any previous year's show. Business men of Salt Lake met stock show men; stockmen from Utah met visiting stockmen and business men from Idaho, Nevada, Wyoming, Colorado, Nebraska and other states, and exchanged ideas, got acquainted and otherwise broadened themselves. The "get-together" meeting of the Salt Lake Commercial club, for a stockmen's round-up banquet, was a mighty happy thought and the club can never know how much good it has done and results cannot be measured in dollars and cents. The Salt Lake Commercial club raised and donated to the stock show management $10,000 with no strings to its expenditure.

Prof. Jno. T. Caine III was toastmaster and was "right at home" stockmen's night at the Commercial club. He is at home anywhere and knows every stock enthusiast from ocean to ocean, in this nation of ours. His wit and geniality put everybody at ease and his selection of speakers was so general in territory and calling that it made this, for the stock show management, a red letter occasion. The climax of the evening was a series of moving pictures run by Assistant Secretary Miller of the National Hereford Association of Kansas City, taken on Mousel Bros.' 4,500-acre Hereford ranch at Cambridge, Nebr.

There were an even hundred exhibitors at this show. They had 1,500 head of livestock on exhibit. Fully 100 per cent of those who were advertised exhibitors, were on hand. The high awards in fat classes cattle, sheep and hogs, were as follows:

Fat Cattle—Car Lots.

Grand Champion Carload Fat Cattle—Beckstead Bros., Downey, Idaho.
Reserve Champion—Portland Feeding Co., Burley, Idaho.
Carload Baby Beef—1st, Centennial Live Stock Co., Monida, Mont.

Individual.

Two-year-old Steer—1st, Frank Irwin, Ogden, Utah; 2d, John H. Seely, Mount Pleasant, Utah; 3d, U. S. Smelting, Refining & Mining Co., Salt Lake City, Utah.
One-year-old Steer—1st, Jas. Lund, Fountain Grove, Utah; 2d, J. A. Lee, Ogden, Utah; 3d, Jno. H. Seely, Mt. Pleasant, Utah.
Grand Champion Steer of the Show—Steer exhibited by James Lund, Fountain Green, Utah.
Reserve Grand Champion 2-year-old Steer—Exhibited by Frank Irwin, Ogden, Utah.

Feeder Cattle—Car Lots.

1st, Centennial Live Stock Co., Monida, Mont.; 2d, Larsen & Lind, Ogden, Utah; 3d, Centennial Live Stock Co., Monida, Mont.

Fat Sheep.

Grand Champion and First—Morgan & Barclay, Blackfoot, Idaho (Hampshire breed); 2d, Austin Bros. Association, Salt Lake City, Utah; 3d, A. J. Knollin, Pocatello, Idaho.

Fat Swine.

Heavy Weight—1st, P. W. Olson & Sons, Cokeville, Wyo.; 2d, S. O. Porter, Morgan, Utah; 3d, Neils Larson, Mt. Pleasant, Utah.
Medium Weight Swine;1st, A. L. Dotson, Minersville, Utah; 2d, Neils Larson, Mt. Pleasant, Utah; 3d, F. W. Hess, Fielding, Utah.
Light Weight Class—1st, Paul L. Tanner, Beaver, Utah; 2d, H. A. Grohosky, Oakley, Idaho; 3d, Walter James, Blackrock, Utah.
Grand Champion Carload—P. W. Olson & Sons, Cokeville, Utah.
Reserve Champion—S. O. Porter, Morgan, Utah.

Awards in Breeding Cattle—Beef Cattle.

Hereford Breed:
Senior Bull—Winterton Bros., Charleston, Utah.
Calf Herd—Winterton Bros., Charleston, Utah.
2d and 3d on Heifer Calf—Winterton Bros., Charleston, Utah.
Yearling Bull—Teton Live Stock Co., Driggs, daho.
Aged Herd—Chesney Stock Farm, Evanston, Wyo.
1st Heifer Calf—Chesney Stock Farm, Evanston, Wyo.
Senior Champion Cow—Chesney Stock Farm, Evanston, Wyo.
Junior Champion Bull—Chesney Stock Farm, Evanston, Wyo.
Grand Champion Bull—Chesney Stock Farm, Evanston, Wyo.
Grand Champion Cow—Chesney Stock Farm, Evanston, Wyo.
Shorthorn Breed:
Bull, 3 years old and over—1st, R. A. Fenton, Tooele, Utah; 2d and 3d, P. E. Willardson, Monroe, Utah.
Yearling Bull—1st, Jno. H. Seely, Mt. Pleasant, Utah.
Bull, 2 years and under 3—1st, 2d and 3d, John H. Seely, Mt. Pleasant, Utah.
Mr. Seely also won 1st in the following classes: Junior, senior and grand champion cow; heifer calf; aged herd; calf herd; junior and senior champion bull, as well as grand champion bull.

Dairy Cattle.

Senior Bull—Ancil Hatch, Woods Cross, Utah.
Yearling Bull—Nelson Bros., Farmington, Utah.
Bull Calf—Nelson Bros., Farmington, Utah.
Aged Cow, Heifer, Heifer Calf—J. I. Atkinson, Wood Cross, Utah, 1st.
Grand Champion Bull—Ancil Hatch, Woods Cross, Utah.
Grand Champion Cow—J. I. Atkinson Jr. & Sons, Woods Cross, Utah.
Jersey Breed:
Grand Champion Bull—Geo. C. Smith, Monroe, Utah.
Bull Calf—1st, Geo. Mann, Woods Cross, Utah.
Cow, 3 years old and over—Geo. Smith, Monroe, Utah.
2-year-old—1st, Jared Brown.
Yearling Heifer—Geo. Smith, Monroe, Utah.
Heifer Calf—Geo. Mann, Woods Cross, Utah.
Geo. C. Smith took all grand champion honors.

Swine.

Berkshire Breed:
Grand Champion Boar — Ashlane Farms, Pleasant Grove, Utah.
Grand Champion Sow—Ashlane Farms, Pleasant Grove, Utah.
Grand Champion Herd — Ashlane Farms, Pleasant Grove, Utah.
Duroc Jersey:
Grand Champion Boar—Richards-Olson Live Stock Co., Virginia, Idaho.
Grand Champion Sow—Richards-Olson Live Stock Co., Virginia, Idaho.
Grand Champion Herd—Boar and Three Sows—Richards-Olson Live Stock Co., Virginia, Idaho.

Sale of Fat Stock.

The auction sale of fat stock was conducted by Dr. S. W. McClure, formerly secretary National Wool Growers' association. The auction sale of breeding stock was conducted by Col. E. Walters, Filer, Idaho, and Col. W. H. Adams of Salt Lake. These purebred sales cannot be too strongly encouraged in this intermountain district. It gives to the small stockman a chance to purchase, close to his ranch, his sire and dams for a small foundation herd of pure bloods. It is to be hoped more dams will be brought next year.

There was a good showing of bulls, but very little "she stuff" brought in the breeding classes. Mr. R. D. Mousel of Cambridge, Neb., came down with a carload of bulls from the celebrated herd of Mousel Bros., but could not place them in the auction sales, because Nebraska as well as Colorado were barred by this year's rules. Such good Hereford blood as this should be encouraged to come and the more the better it will be for the country.

Only a few years ago the Winterton Bros. started in the purebred Hereford blood. They today have 150 head of fine registered Herefords. They have encouraged certain neighbors to go into the business in the Charleston district and now that is cited as the Herefordshire of Utah. By all means the breeding classes should be encouraged as a most vital part of the stock show. It will have more to do with the building up of quality in herds of beef and dairy cattle and in better types of swine, than anything else that can be done. Encourage the small breeder, for that is the way we all began, in a small way.

Denver shows what can be done in using the stock show as a clearing house for the sale and purchase of purebred livestock. Mr. Harry L. Youngerman of the National Western Stock Show, emphasized the importance of this feature with report of sales at Denver show in January, 1920. The fat stock and registered breeding stock sold at that time, gave bank clearings on these sales of one and a half million dollars per day for five days, or seven and a half million dollars total. He told the exhibitors and show management that they had as good an opportunity as Denver. He said the present show was a much bigger one than Denver had for her fourth show.

F. R. Hedrick, representing the Kansas City Stock Yards, and Mr. George Roberts, manager Spokane Stock Yards, spoke also in commendation of this year's stock show, and urged team work on part of business men and bankers of Salt Lake, together with the stock show management and stockmen in the intermountain district. "Then," said they, "your Salt Lake stock show will pay back in actual stock improvement and stock sales ten dollars for every dollar thus put into the game. Work together like you do in other things and you will sure go over the top."

Farmer Boy and Student Judging.

On Monday, the last day, Mr. W. W. Owen of the Utah Agricultural college, conducted a boys' judging contest. Forty-six boys from various parts of the intermountain country took part in this contest. In the team judging, of three young men per team, the Wahsatch County High School team took highest honors, winning a score of 574 out of 900 possible points. First honors in the individual scoring went to Master Glen Loveless, who scored 269 out of a possible 300. He is a student at the Utah Agricultural college.

Prof. Geo. B. Caine and Dr. E. W. Carroll of Utah Agricultural college, who judged the work of these 46 boys, declare they showed remarkable ability in selecting ranking individuals and stating reasons for same. In nearly every instance these boys were sons of stockmen and had grown up with the horses, cattle and hogs of the farm. The writer can but feel this is a great work to sharpen up these sons, who will be the stockmen of tomorrow, so they can do better and more effective work in selecting and breeding of desirable livestock than even their fathers have done in this great big western country. Do you realize what an education these great stock shows are to the youth who are to carry on the important work that their fathers are doing today?

Stock Show Notes.

R. D. Mousel sold, at private auction, the good Hereford bulls he brought with him from his Hereford farm to D. H. Livingston for the Livingston ranches.

An editorial in the Salt Lake Herald tersely stated: "This exhibition itself and the purebred sales which are the crowning events of interest and satisfaction, are big educational factors in the upbuilding of the livestock industry. It means the distribution of high-grade animals over a wide area and the consequent propagation of more animals of the best breeds and resultant improvement in the intermountain herds." That is good stuff to come from a metropolitan daily.

Way up near Yellowstone Park, just over the hills from the Jackson Hole country, is the town of Driggs, Idaho. Here is the home of the Teton Live Stock Co. This company brought down to the show a Hereford bull calf that Austin Bros. of Salt Lake were glad to purchase. They got him cheap at $400. Watch that calf's record, he is sure to be heard from.

R. R. Miller, Assistant Secretary American Hereford Breeders' association, and F. R. Marshall, Secretary of the National Wool Growers' association, spoke highly of this year's show and what it foretells for the future. These men have been to the best shows in the country, and they know what they are talking about.

J. Oldham, veteran buyer for Denver Live Stock Commission Company; Harry Bulla, a Denver sheep buyer; Wm. Thomas of Laramie, Wyo.; Dr. S. W. McClure from Oregon; Prof. E. F. Rinehart of the University of Idaho; Col. E. A. Walters and E. W. Stephens of Idaho; H. L. Youngerman of Denver; Mr. Geo. Roberts of Spokane; H. S. Ensign of Helena, Mont.; R. R. Miller of Kansas City; R. D. Mousel of Cambridge, Neb.; R. W. Felton of the staff of Idaho Farmer, are a few of the many "out of the state" important visitors at the stock show.

Already the following slogan has been adopted by business men and stockmen of Salt Lake and vicinity: "A bigger and a better stock show for 1921."

Some good Guernsey dams and calves were exhibited at the show, but the writer did not get the awards made on them. Most of them were from Tremonton, Utah, district. These breeders have formed a local breeders' association for the district.

At the close of the stockmens' banquet on the evening of the second day of the show, after "Uncle" John Seely, Utah's veteran Shorthorn breeder, had seen Mousel's magnificent herd pass before him on "dress parade" on the screen, he came to the writer and said: "Say, where is this man Mousel? I want to meet him." The afore named writer took great pleasure in bringing these two successful breeders together. The writer doubts whether either man slept any that night, on account of exchange of ideas.

The writer observed among the young dairy stock in the breeders' sale one or two Holsteins bred by Loesch Bros. of Montrose, Colo.

The one district that had the most entries in the stock show was Blackfoot, Idaho. Why was this? Because Mr. E. W. Stephens, who formerly was field agent for Union Stock Yards, Salt Lake, is now county agent for the Idaho county in which Blackfoot is located. This demonstrates what one good worker can do to bring entries to the stock show. Let us all get busy.

The Salt Lake Commercial Club put up a fine lot of trophy cups, that gladdened many a winner and encouraged him to "come again." Where were the bankers' prizes? Echo answers Where? We hope the Salt Lake bankers will help boost the 1921 stock show, for it is a great asset in a progressive developing country. Stock men are among the bank's most dependable customers. Let us see the bankers as well as Commercial club, Rotary club, Kiwanis and other social clubs, of Salt Lake, get behind the 1921 stock show at Salt Lake, U. S. A.

Denver is approximately 1,000 miles from Chicago and 600 miles from Kansas City. Salt Lake is 600 miles from Denver and has a large livestock territory tributary. Chicago, Kansas City and Denver have developed great and successful stock shows. Therefore, Salt Lake can "arrive." She is now "coming" and her growth in the stock show class can be dependeded upon as certain and promising.

Cooking the Dried Fruits.

Dried fruits are usually given a long, slow cooking in water below the boiling point. They may be soaked for a few hours, or they may be simply washed and put directly into the warm water for cooking. The important point to be observed is not to soak or cook in too much water. The dried product cannot be expected to have as much flavor as does the fresh; so all pains must be taken to dilute that flavor as little as possible. Most recipes for cooking dried prunes and apricots direct that two cups of water be used to one cup of fruit; but a better-flavored product will result, if equal measures of water and fruit be used, when the cooking is done slowly in a tightly covered vessel, so that little of the steam escapes.

Dried fruits may be sweetened lightly (since the usually contain a good deal of sugar themselves) with sugar, or with any sort of sirup, according to taste. They are to be used as sauces, in puddings, fruit cakes and cookies, compotes, whips, souffles, and even salads, much as fresh fruits are used.

New Threat to the Poor.

Char—"Sorry to inform you, mum, as I sha'n't be able to come no more."

Lady—"Why not, Mrs. Bouser?"

Char—"Can't afford it, mum: Me 'usban' says if I earns any more money 'e'll 'ave to pay income tax."—London Punch.

Forget to do anyone an injury, but remember to do everyone a kindness.

Colorado Consigns to the National Holstein Sale

TEN ANIMALS SELECTED TO REPRESENT STATE AT ST. PAUL

H. A. LINDGREN.

Pahgre Elleb Johanna Bess, a Pahgre Valley Ranch offering for the sale.

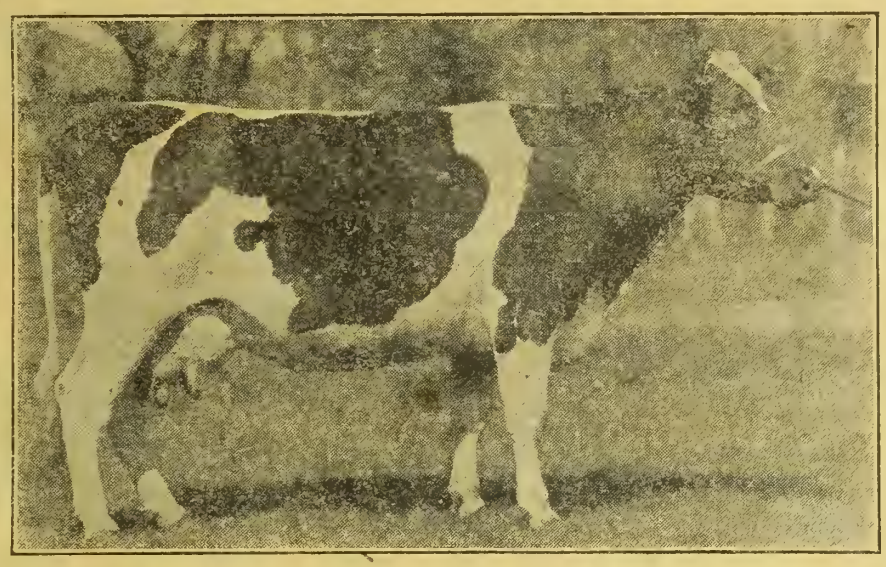
Lindgren Made Selections.

As Prof. George E. Morton, official Holstein judge, was unable to leave his college work long enough to make the selections for the National sale, this work was delegated by the executive committee of the Colorado Holstein Breeders' association to Mr. H. A. Lindgren, Associate Editor of Western Farm Life, who visited the various herds and made a personal inspection of the offerings. His testimony is that the breeders have met with every requirement in putting forth only animals of the very highest class, thoroughly representative of the type for which Colorado is making a national reputation.—Editor.

NOTHING of more importance to the Holstein Friesian breed, than the June sale at St. Paul promises to be, has ever been attempted. The Minnesota Holstein Friesian association will be host to the annual meeting of the National Association. This will be followed immediately by a three-day sale of 250 head of the nation's best breeding of this popular class of dairy cattle. The sale will be made up of consignments from the different states of the country. Each state is given a quota of so many head. The selection of these is to be made by the state association of each state.

In this matter the Colorado association was given a quota of ten head to raise. At first the importance of this move did not seem to take effect on the minds of the Holstein breeders. After a time some of them appreciated the opportunity this plan offered to advertise Colorado Holsteins, and as a result they got behind the proposition The 10 head were finally selected from the herds of those who appreciated the value of the sale. These men who gave their herds from which to select, made practically no reservations, giving the committee a free hand to select what they wanted to represent Colorado in the sale. As a result, Holstein fanciers need have no fear but what the Colorado offering will do them credit.

The consignment consists of nine females and one bull. A list of the breeders making consignment and their offering will be of interest to the readers.



A SPENCER PENROSE COW.
Piebe Changeling Clothilde 213824. Sire: Changeling Butter Boy 7th 66852. Dam: Piebe Queen Aaggie De Kol 117718. She has a record of 30.39 lbs. butter and 628.0 lbs. milk in seven days; 190.52 lbs. butter and 2,369.6 lbs. milk in thirty days. Piebe Changeling Clothilde weighs close to a ton and is as good an individual as you ever saw.

A Spencer Penrose Bull, Columbine Changeling Clothilde 508483.

The Western Holstein Farms, owned by Hall Bros. of Denver, are offering an exceptionally well bred young cow. She is Western Ascalon, who as a heifer at 14 months of age in 1917 was grand champion of the Denver show. She was sired by Colantha Lass, who was Colorado's greatest show bull. Her dam is Dutchland Hengerveld Ascalon, who produced 1,263 pounds of butter and 26,485 pounds of milk in a year. She carries such blood as Pontiac Ascalon, Hengerveld De Kol, Pontiac Korndyke, Sarcastic Lad, Sir Fayne Concordia and Homestead Jr. De Kol.

Western Ascalon herself is nicely developed and is of wonderful conformation. She is large and well marked and an animal that Colorado breeders will be proud to have in ther offering.

Spencer Penrose of Colorado Springs is offering the only bull in the Colorado consignment. He is sired by Woodcroft

(Turn to Page 18.)

Country Girl's Story of Six Years of Club Work

HOW SHE LEARNED TO COOK, SEW, RAISE CHICKENS AND GROW CORN.

LOIS WILKINS.

SIX years ago when the agricultural clubs were first organized in El Paso county, I joined the sewing and baking club. I made a sewing apron, underwaist, some pan holders, and various other articles for my mother, in the sewing club, and made twenty-two batches of bread during the summer, in the baking club.

The last of October, all the boys and girls in El Paso county that were members of clubs made an exhibit at Colorado Springs of some of their work. I exhibited my apron, underwaist and a loaf of bread and got second prize on my bread, which was a five-dollar angora wool sweater.

About seventy-five boys and girls over the county that had completed their work, records and stories and had made an exhibit, camped for three days in Monument park. Such a time as we had! The first days we visited places of interest in Colorado Springs such as the Van Briggle Pottery and the Colorado School for the Deaf and Blind. At night we always had a campfire around which we gathered and told stories, listened to a phonograph, took flashlight pictures, and talked of club work. One night we attended a barbecue.

The second day we took our lunch and hiked up South Cheyenne canon to the Seven falls and Helen Hunt's grave. There we ate our dinner and went climbing and playing awhile before we went back to camp in time for supper. After we had rolled up in our blankets in our tents we sang and talked until a late hour.

The third day we went up Ute Pass through the Cliff Dwellers, past the Rainbow falls to the Cave of the Winds. Many of us had never been in the mountains before so, of course, we thought everything was grand. After eating our lunch we went down Williams canon to the Garden of the Gods where we rested for awhile, then went to Manitou and returned by street car to camp. We were a tired bunch that evening. The supper the negro cooks gave us was fine.

Between hikes we played with the swings, teeters, and maypole in the playground near the camp. The next day we went home with light, happy hearts, looking forward to our next camp.

The second year I joined the sewing and baking club again made over thirty-five batches of bread, a kitchen apron and several other articles. I also attended our club meetings made an exhibit and went to a camp in Monument park in the fall. The camp was carried on much the same as it was the year before. About one hundred and thirty attended this camp.

The third year I joined the corn club. I tested my seed, listed, harrowed, hoed, cultivated and gathered my corn. I raised just one acre of corn and had a high yield. I exhibited ten ears of my corn at the Calhan fair and took first prize which was a wrist watch. also attended a campfire at night as usual.

That winter two from each club that did the best work got to go to Colorado Springs for two days during the Autumn exposition. We roomed at a hotel and visited many places of interest while there.

The fourth year I joined the poultry culb and raised White Leghorn chickens. My chickens took second prize at the Autumn exposition in Colorado Springs that winter.

The fifth I again joined the corn club and raised one acre of corn. I also cultivated over sixty acres of corn for my father. At the State fair at Pueblo I exhibited ten ears of corn. A camp was held there but I did not get to go because of sickness.

The sixth year, which was 1919, I joined the third year corn club. Five acres was the size of my field. Besides raising my own corn I cultivated eighty acres of corn for my father. This winter I again exhibited ten ears of my corn at the Autumn exposition in Colorado Springs and took first prize. The county champions this year were awarded a free trip to the National Western Stock Show at Denver, so I got to go.

There were six boys and girls that were in other clubs that went from El Paso county. We went up on the train Monday afternoon and returned Wednesday night. While in Denver we had our rooms in the Metropole hotel. Of course, we spent most of our time at the Stock Show but we also went through the City Park museum, saw the Potato Show at the city auditorium and went up to the top of Daniels & Fisher's tower. There were boys and girls from all over the state three. We certainly enjoyed ourselves. Demonstrations of canning, sewing, potato raising, etc., were given by some of the boys and girls. When one can get a trip like this it pays to work for first prize.

Lois Wilkins planting corn on her father's farm.

Last fall I took a trip to the State fair at Pueblo. Over a hundred boys and girls from all over the state came there to our camp. We had bugle calls for almost everything we did. We marched in a big parade with banners flying and carrying signs showing what club and county we were in.

Boys and girls from the sewing, baking, garden, canning, poultry, corn, calf and pig clubs were there. Moving pictures were taken of us as we were exercising, eating, parading, demonstrating, and when we were in bed. I saw these pictures afterward at the Stock Show in Denver.

Every trip and camp that I have taken has been free. All expenses were paid for the club members. I have gained much from my six years of club work. I would not have had the chance to take the trips that I took, or see the things that I saw, if it were not for the club. The pleasure that I have had from making acquaintances of boys and girls from all over the state and learning their methods and ideas also means much to a country girl. The knowledge that I have received from the club work will help me in after life. I regret very much that I cannot join the club again, as I will be eighteen.

Club work is now coming to the front. It is making good citizens of boys and girls all over the United States. I hope that many will take up club work and find it as interesting and helpful as I did in the last six years. I am the only member in El Paso county that has been in the club work six years and as far as I know in the state.

I would like to thank all that have helped to make it possible for me to enjoy the camps and trips that I have taken.

I give my best wishes to all the Colorado club members of 1920 and the years to come.

On Late Crops for Dry Lands

CORN, BEANS, SUDAN GRASS AND OTHER SORGHUMS

E. R. PARSONS.

CORN is still king among late crops and everybody is now beginning to recognize its many wonderful characteristics, not the least of which is its power of adaptation. It is universally preferred for silage and furnishes an ideal grain crop which can be harvested at leisure without the bother and expense of a thresher. When planting for a grain crop one kernel to the hill should be the limit, but for ensilage two are often planted. The distance between the grains should be determined by the richness of the soil, the depth of plowing, the variety planted, and particularly the moisture conditions.

Last year the writer had the chance of comparing two crops, both planted in rows 40 inches apart, but in one the grains were about two feet apart in the row and in the other forty inches. The season was unusually dry and the latter made considerable corn, while the former was almost a total failure as far as grain was concerned. A full sized corn, such as Minnesota 13, needs more room than a shorter corn like Swadley or White Australian. When conditions are ideal 30 inches apart for the larger varieties and 24 inches for the shorter kinds would be sufficient; but it is very seldom that conditions are ideal and in an average season it is often better to plant a few inches further apart and be on the safe side. When for some reason or other the stand of corn is poor, which is often the case when tested seed is not used, the vacant hills can be easily replanted with a hand planter, using a corn which is of a shorter season than the one originally planted. Swadley for instance, would make a good filler for Minnesota 13, for if planted a week or two later it would mature about the same time.

Corn and cane have always been favorite crops with the dairyman. Milo is much used in the southern districts where they depend more on the summer showers than on spring moisture. The difference between corn and milo, or cane, or any other sorghum is that the latter come out better after a protracted drouth. When the soil is very dry at tasseling time it often happens that the tassels of corn dry up without secreting any pollen and the silks not being all fertilized (one silk to each grain) there is little corn set, and the ears are mainly husk and cob with a few stray grains on them. With milo and the other sorghums it is quite different. As long as the plant is alive the seed head is the last to suffer. Like small grain it can utilize almost the last drop of sap in the stalk and each seed head carries its own pollen. When a severe drouth comes milo simply stops growing and waits for rain and when this arrives it makes another start with very little evidence of ever having received a check.

About the Grain Sorghums.

The experience of the writer with the sorghums is that milo makes the most and largest grain; feterita is more preferred by stock and chickens and amber cane makes the best fodder. For very hot sections kafir corn beats them all.

In our issue of March 15, E. W. Curtis tells us that according to the Kansas Experiment Station a ton of sorghum silage takes the place of 8½ bushels of corn in feeding for beef, and that on account of the extraordinary drouth conditions there last summer the yield of silage corn dropped to about 3½ tons per acre, but sorghum made about nine tons as usual. These are facts worth pondering over by the corn and cane men. Sudan grass is making new records for altiude every year. It should be tried everywhere where there is a growing period of ten weeks without frost. It can be seeded broadcast, but it is much safer to plant it in rows and cultivate in the same manner as corn. Five to ten pounds of seed will plant an acre. It can be planted in much the same manner as cane or milo, but the holes in the plates must be smaller to suit the seed, usually about 3-16 of an inch.

It can be cut by hand or by mower or binder, it dries easily when shocked in bundles and provides splendid hay for horses and cattle. Where the season is long enough a second cutting can be obtained, which grows much more quickly than the first. Like all the sorghums, it is liable to generate prussic acid when frozen back; but since this acid is very volatile, the pasture after cutting is perfectly safe when brown and dry.

A new crop now coming to the front for silage is Russian sunflowers. They have done particularly well on irrigated ranches, but so far have not been tried out on a large scale by dry farmers. Some years ago the writer, discovering what an excellent feed they were for chickens at molting time, decided to plant some. We found that to do well and produce large heads they needed as much room as corn. The best plants and seed producers were those spaced 30 inches apart in the row and 40 inches between rows. It is natural to suppose that such a crop as sunflowers could be planted pretty close together and perhaps they can for silage purposes, but for tall stalks and seed they need plenty of room.

Beans a Good Late Crop.

Beans are a good late crop and not so hard to raise, if the farmer understands them. The yields in some cases have been small on account of the soil being too poor and in others because the preparation of the seed bed was not adequate. The best crop of beans the writer ever saw was raised on a rich sandy loam on a clay bottom. The land was plowed 10 inches deep in the fall and again 5 inches in the spring, and alternately disked and harrowed at intervals until planting time. Land for beans should be prepared in about the same way as for potatoes; both these crops need deep plowing, because they do not send roots into the subsoil like other field crops, but depend entirely on the seed bed and a small seed bed means small crops. Late, deep plowing is of no value either, but deep plowing, if it is done early in March, will suffice, if it is very thoroughly worked with disk and harrow, provided the average precipitation falls in April and May to help pack and settle it and drive out the surplus air. Beans on the dry farm, like everything else, need plenty of room, and unless conditions are very promising should be planted one at a time 8 to 10 inches apart, using about 20 pounds of seed.

The shortest season hay crop that we have on the dry farm is millet. If the farmer is hailed out before the first week in July he can still raise some feed by running in some German millet. This kind of hay is remarkably rich and a good milk producer

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We do not criticise an ox cart or condemn the tallow dip, for the simple reason that they are obsolete. During the reconstruction period through which our country is now passing, if the public does not criticise any public utility or other form of service, it is because there seems to be but little hope for improvement.

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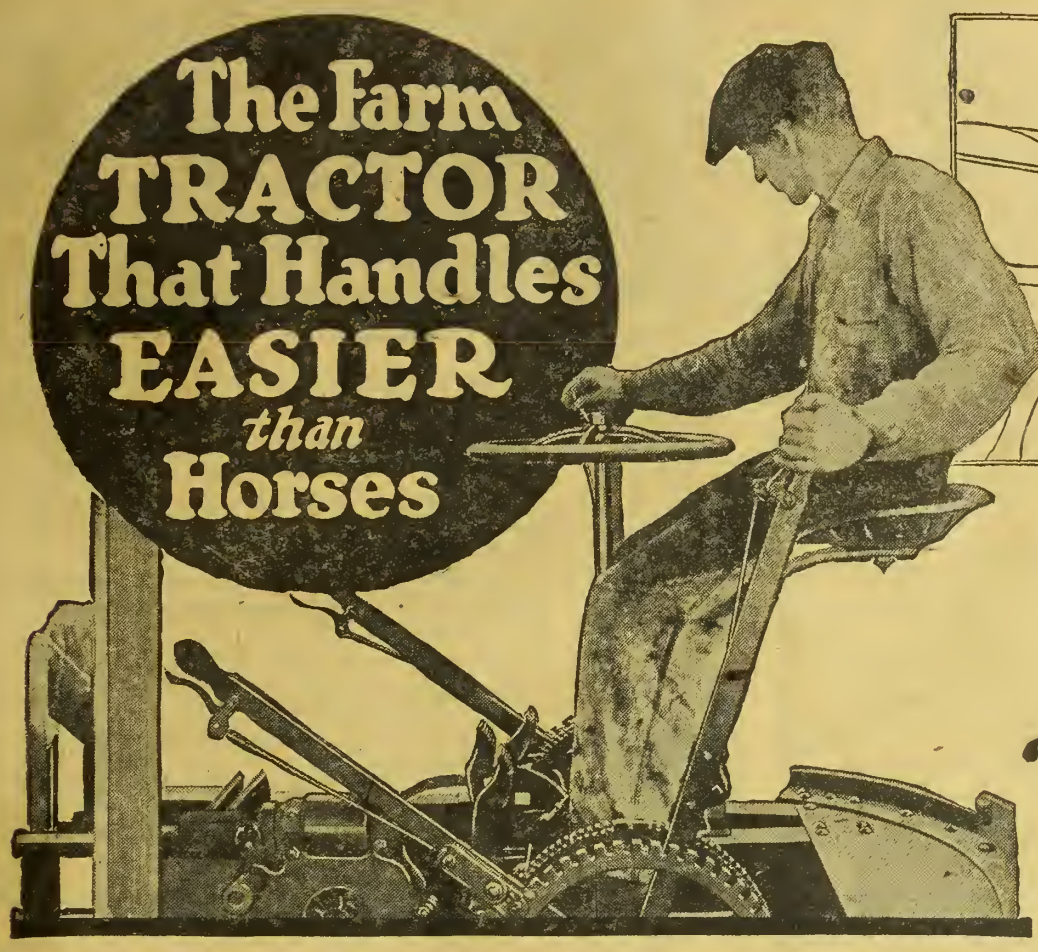

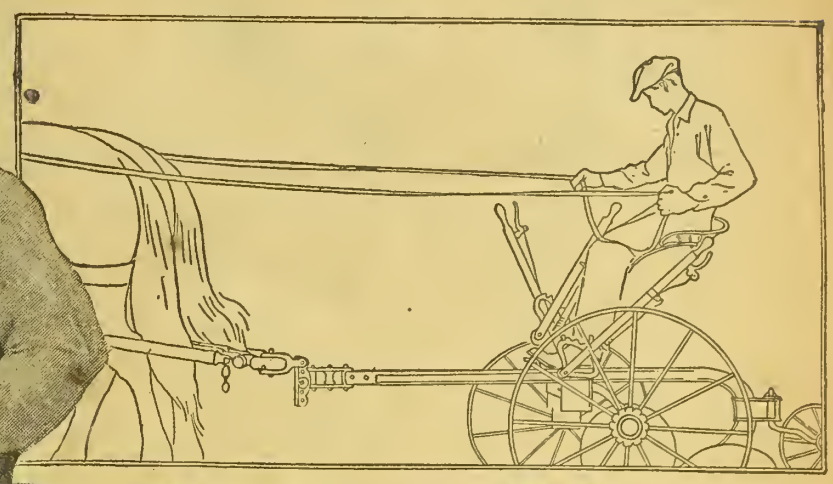

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Plows are carried under the frame where you can watch them work without turning your head and twisting your neck. They are always in plain view from the driver's seat.

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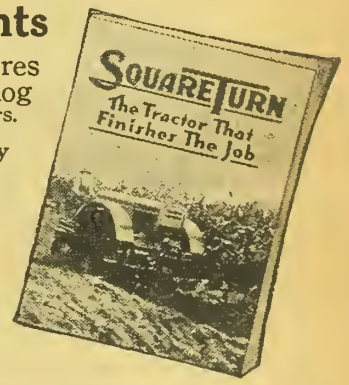

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Hog Raising on Wholesale Plan

VISIT TO PREWITT RANCH NEAR BARR LAKES.

H. A. LINDGREN.

TWENTY miles northeast of Denver, in Adams county, not as the crow would fly, but one-half mile east of Klink, on the Burlington railroad, is located the 640-acre farm of The Prewitt Hog Farms Company, a Colorado corporation, made up largely of Denver business men. This is probably the largest individual hog farm enterprise in Colorado. The farm consists of 640 acres under the Barr Lake reservoir system and more than 300 acres of the tract is now in alfalfa and more is to be planted this spring. About 150 acres of corn is raised, which is converted into ensilage; the balance is planted to various crops. The business of the company, in the main, is raising hogs for market and sows for breeding purposes. The most interesting features of the business are the modern methods and equipment and the sanitation carried out in complete detail.

The main farrowing house is 186 feet long and contains a double row of pens with an 8-foot alley between. Each pen has a separate outside pen or runway, which gives the sow and young litter a chance to get outside during favorable weather. The sows heavy in pig are placed in this house, where they remain until after farrowing, and the pigs are strong enough to be moved. They are then taken to pens on the outside, of which there are eighty. These outside quarters are provided with individual pens and a house where the sow and litter are kept until the pigs are past the critical period. They are then taken to other modern, sanitary quarters, where several sows and litters are placed together. From here they go to the alfalfa fields. Up to the time of the visit to the farm early in April over 600 pigs had been farrowed. The average number per litter saved was over six head.

Each pen is fitted up with fender rails to protect the pigs from being crushed by the sows. A neat sanitary water and feed trough is placed in each pen. This is connected with a water pipe which provides fresh water at all times. A large ditch of running water flows through each of the large hog lots. A cleated board incline enclosed within a fence leads into the ditch and enables the hogs to get to running water very easily.

The feed lots for the fattening hogs are provided with feeding floors and low built sheds, which prevent the fat hogs from piling up. This is an excellent provision.

Alfalfa pasture is the basis for the feed ration in the spring and summer, and alfalfa hay for winter. Grain is at the basis for the feed ration in the spring and summer and alfalfa hay for winter. Grain at the rate of a 2 to 3 per cent ration is fed with the pasture. Other feed is raised on the farm, but a large amount of grain is purchased on the outside.

They are now farrowing 490 head of extra good type Poland China sows, which are bred to registered boars that have the blood of many of the outstanding strains of the country. Some boars are bought and shipped in from leading herds and others are raised on a farm in Logan county, at Red Lion. This is known as The Northern Colorado Development Company farm and also managed by F. E. Prewitt. Only registered stock is now being bred on this farm. This company will be remembered as the exhibitor of the grand champion carload of fat hogs at the National Western Stock Show in Denver in 1918. This load of 8 months old Polands, weighing 268 pounds, were sold at 33 per hundred, which is the world's record price for fat hogs. This same farm won first prize on bacon hogs in 1918 and 1919 at the Denver show. Big-boned boars of good type are being used. One of the things that was commendable in connection with the boars and sows on the farm was the strong feet and pasterns.

It is the plan to keep 600 sows when the enterprise is complete. Young sows from the best litters are selected to replace the older sows. Some 250 sows will be disposed of each year and their places will be taken by younger sows. This places on the market sows that have had but three litters. This was mentioned to Dr. Prewitt and the question asked as to why they disposed of them so young. He stated that they were limited as to the number of sows they could carry and preferred to keep the younger ones. This throws some excellent sows on the market that are in the prime. Dr. Prewitt stated in answer to the question that he would breed these and sell them to farmers who desired them after the present litter of pigs are weaned.

The building up of this large hog raising enterprise has been accomplished by team work and co-operation of capital and business suggestions. The board of directors is composed of the following well known business men: C. A. Bowman, president; F. E. Prewitt, vice president and general manager; George A. Morris, secretary treasurer; James A. McSwigan and P. Crowe. The farm superintendent is Mr. W. R. Lyle, and the hogs are under the direct care of Mr. G. H. Stults, a Missouri Agricultural College graduate.

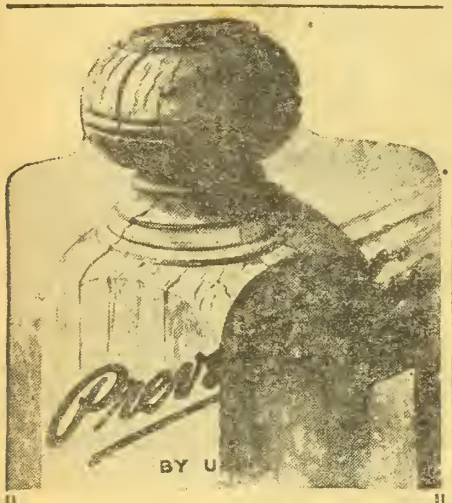
It is a wonderful sight to see such a large hog herd handled so orderly and the herd and their quarters kept in a clean, sanitary condition. It would no doubt interest many of our readers in Colorado to make a trip to this farm. Visitors are always welcome.

Purebred Bulls Boost Profits.

A comparison based on the survey records of 673 Illinois farms conveys its own lesson as to the value of purebred bulls. A total of 124 of these farms used purebred bulls. Their average yearly profit is $1,102 per farm; 466 farms used grade bulls and have a yearly profit of $734 per farm; while 83 farms use scrub bulls and are operated at a yearly loss of $234 per farm. —Hoard's Dairyman.

Olathe Making a Record.

The agriculturist for the Uncompahgre Reclamation Project, Mr. H. A. Ireland of Montrose, reports that the Olathe Shipping association did $25,000 worth of business between November, 1919, and March, 1920. This was largely from hogs alone. There are now some seventy paid-up members of the association. Mr. Judson Solomon of Olathe is the manager.



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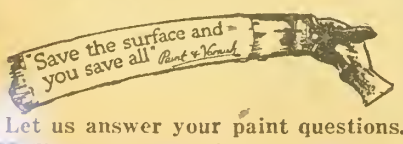

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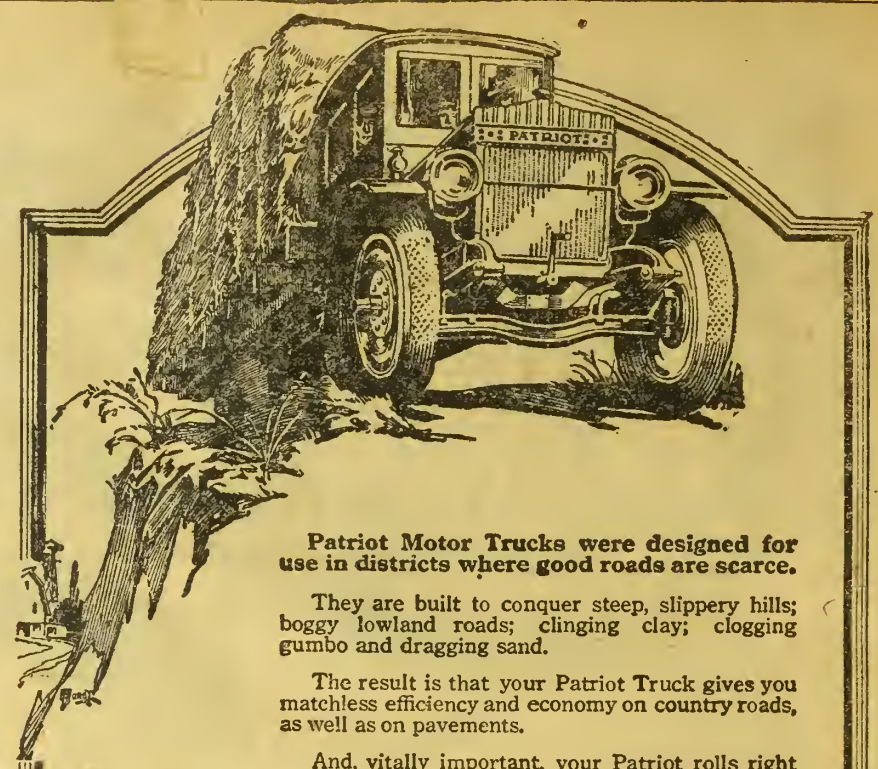

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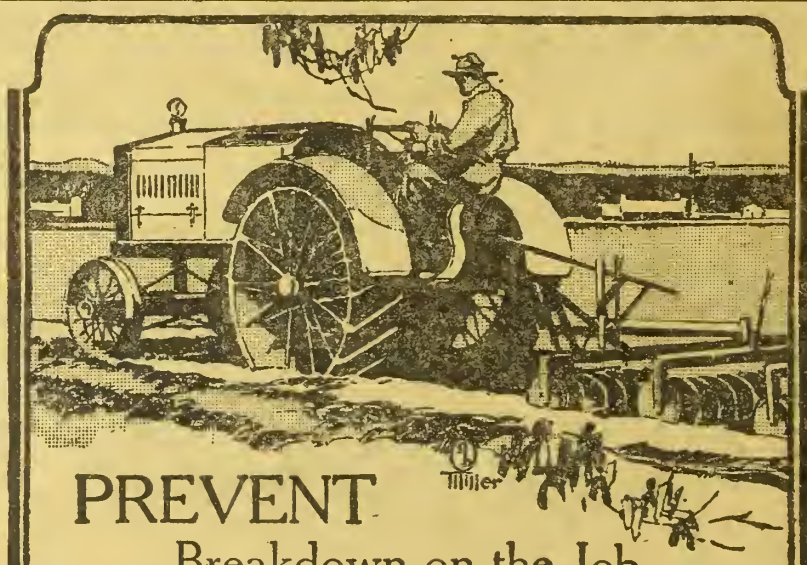

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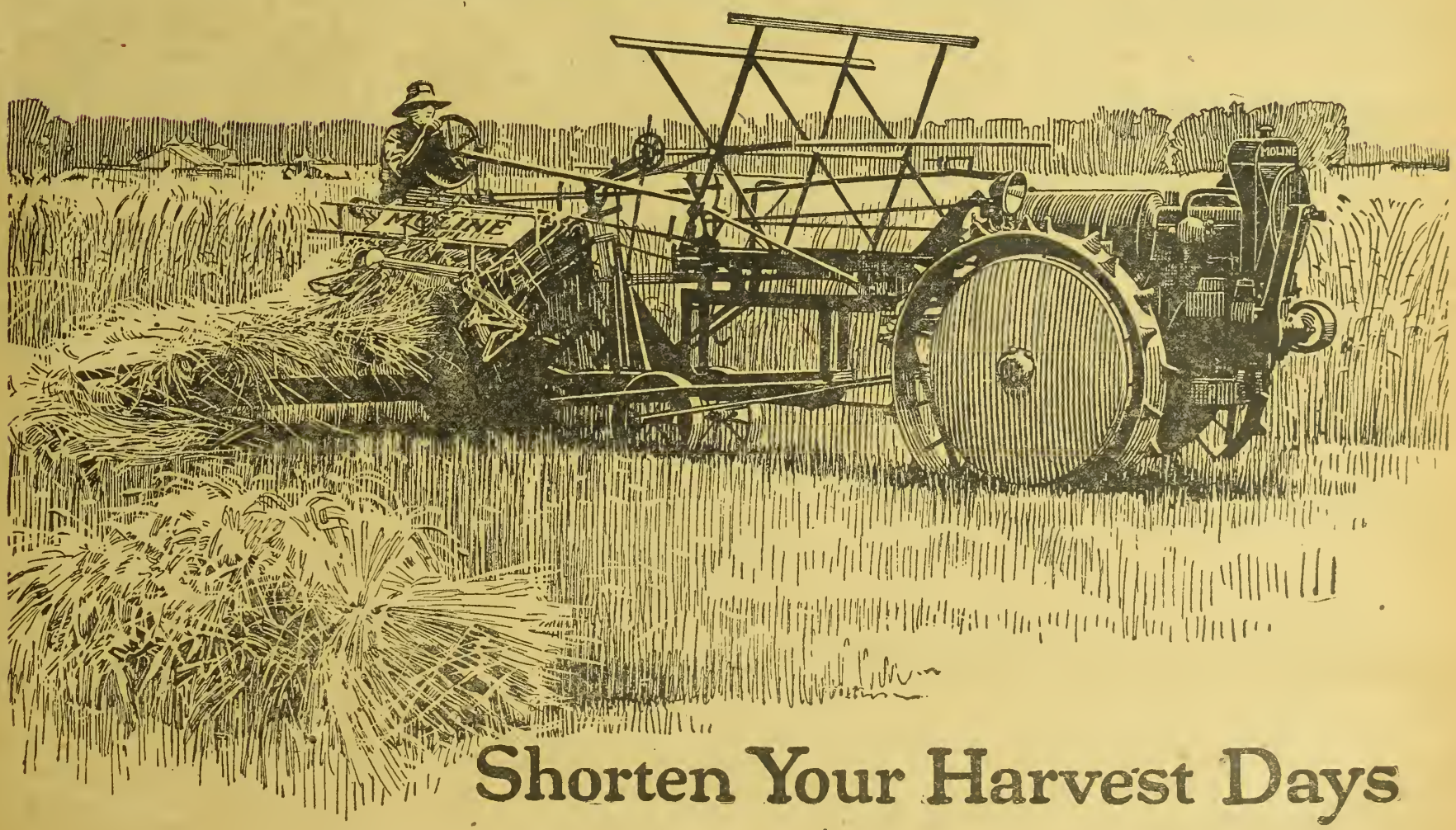

Shorten Your Harvest Days

Western Farm Life

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Faculty Gets an Increase.

Substantial salary increases for members of the faculty of Colorado Agricultural College have been granted by the State Board of Agriculture. The increases, according to press reports, amount to 25 to 30 per cent, and they were made effective April 1. Readjustment of college activities, so that money could be diverted to the salary fund, was found necessary in order to make these increases. The alternative was the further loss of instructors and investigators, who have been leaving the college in numbers to accept employment at other institutions, or in private business.

There are several important places on the faculty to be filled, with little prospect of getting trained men. The condition is a serious one that demands careful consideration by the next legislature. Colorado occupies a unique position in agriculture and the state's agricultural college has peculiarly favorable opportunities for original work in irrigation, dry land farming, feeding, orcharding, high altitude crops and similar subjects.

Some of these subjects have been neglected, perhaps because of lack of money and man power. Legislation has been sought by the institution for the creation of state bureaus for protection of fruit growing, dairying, pure seed, forestry, etc., and successive legislatures have been liberal in support of these departments. All of this has added to the executive duties of the college authorities without strengthening the institution in research work, or in its extension activities, or increasing its direct usefulness to the student. These additions have been necessary and of public benefit, but there is a feeling that the load in this direction is heavy enough and that this centralization of agricultural activities under one head has been carried to the limit.

The extension department has been weak for several years; dry farming is a neglected subject, experimentally, as well as in the class room. There has been more than enough to do for everybody with the funds at hand, and no one can justly criticize the energy, industry and economy of administration. However, there is a widespread feeling that the college does not get as close to the farmers as it should.

This feeling has been emphasized of late because of lack of sympathy with certain of the county agents, who have suffered from an overdose of red tape. These men are the point of contact between the college and the farmer, and it might be well for the college to see that their good will is retained. This is a matter of policy and not of money and, therefore, we see no bar to its adjustment. The salary increase for the faculty is a step forward; now let us see if the county agent situation cannot be bettered without the further loss of good field men.

Bureaucracy in the Parks.

Vacations for the farmers? Yes, they need them and deserve them, but all too few are able to find time during the vacation season to knock off work for a few days and motor to some scenic spot in the mountains for enjoyment of the beauties of nature. On the pages devoted to rural home affairs in this issue will be found an article by Miss Douglass calling attention to Rocky Mountain National Park, known to the old-timers as Estes Park, one of the world famous beauty spots which has been taken over by the government as a perpetual playground for the people.

It is unfortunate that the federal government does not manage the national parks for the "sole and exclusive benefit of the people." Rocky Mountain National park has not escaped the blight of bureaucracy, although it is not yet so completely in the hands of government favored concessionaires as are some of the other national parks. A start has been made, however, by granting one transportation company the exclusive right to operate vehicles for hire within the limits of the park. People who visit the park in their own machines are not interfered with, but the thousands of tourists who reach the gateways by rail, relying on park service for getting about, are at the mercy of the company that enjoys a governmental monopoly. The Lincoln Highway Forum, discussing this question in a recent issue, says:

"It seems to be the unanimous opinion of those who do not take their own cars to the parks, and the opinion of by far the majority of those who do, that the concession controlled transportation within their borders is an unmitigated evil, resulting in higher charges for the use of cars, uncourteous and poor service and iron bound schedules, which do not always conform to the desires of the individual. Tourists in the national parks discover that monopolistic transportation carries with it the power to say what hotels shall serve the traveler and what they shall charge him. It is clear that those who hold the franchise for exclusive transportation privileges within our national parks have an absolute dominion over all privately operated hotels or other enterprises within their borders and can, if they see fit, make use of this power against the public interest and to the end of gradually acquiring all public service organizations in the park."

Such a condition is un-American and unbearably autocratic. One result has already come to public notice in Rocky Mountain National Park, where a hotel owner has been obliged to resort to the courts to protect himself against discrimination. It is high time for Congress to wake up to the dangers of bureaucratic rule. The west seems to have been selected as the favorite pasture for the red tapers down at Washington. We are being "bureaued" to death.

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Our Spring Storms.

Variability of climate in the intermountain region was again illustrated recently when Northern Colorado was visited by a record-breaking snowstorm. This single storm on April 17 and 18 brought the precipitation average for the first four months of the year considerably above normal. In the mountains it resulted in the piling up of snow that presages well filled reservoirs and a reserve supply of irrigation water in all districts that have storage capacity. On the dry lands it puts the soil in splendid condition for spring crops and if only the normal summer rainfall follows practically assures the yield. It makes up for a large part of the damage caused by the earlier winds which blew out considerable areas of winter wheat. And it comes in ample time to give the farmer the best use of the added moisture. While unmeasured quantities of water were lost in the run-off through flooded streams by the thaw which immediately followed the storm on the plains, it was nevertheless a "prosperity snow."

The "big storm" and the one preceding it by a week, claimed a large toll in damage to property, livestock and even in human lives, at least half a dozen fatalities being reported in Colorado, due to exposure. So the needed moisture comes to us not altogether as a blessing, but with a reminder that even in this day and age of advancement, there is still pioneering being done on the plains and in the mountains. Those who are breaking the pathway are suffering hardships and risking dangers not a whit less real than were experienced a quarter of a century ago. This is still a new country and each passing season teaches its lesson regarding climate, that all important factor in farming development, second only to the soil itself.

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On Whorled Milkweed.

A bulletin has just been issued which gives a very complete report on the status of the whorled milkweed in Colorado. It was prepared by Prof. W. L. May, assistant botanist of the Colorado Agricultural College. Mr. May has been at work for the past two seasons on eradication methods in various parts of the state. This weed is probably the most dangerous poison weed we have in the west. On account of its character of growth it has been found very difficult to eradicate.

In his report Prof. May states that the first intimation of the deadly poison of this weed was the result of an investigation of a case of loss of stock in the Colona section in Montrose county. This was in 1909. At first it was only thought of as a possibility. However, later investigations proved beyond a doubt that the whorled milkweed was the cause of practically all of the losses occurring on the Western Slope.

Prof. May states in the bulletin that the plant is well distributed throughout the southern half of the state, in irrigated sections from 5,000 to 7,000 feet in altitude. He also mentions that the main sources of spread of the weed by seed are: Irrigation water, wind, railroads and moving stock.

Poisoning occurs under any condition in which the hungry stock come in contact with the whorled milkweed when there is a scarcity of other forage. This may occur along driveways, in overgrazed pastures, in old orchards, or when milkweed occurs in hay.

It is stated in the report that the only sure way of preventing poisoning is to keep the stock away from the plant. Stockmen should learn to recognize the weed whenever it is found.

In reporting the work done on eradication, Prof. May says: (1) Asclepias galioides (whorled milkweed) is not only a very dangerous poisonous plant, but it is one of the most persistent weeds that we have, ranking with bindweed and poverty weed in that respect. (2) Early summer work and surface work are equally ineffective. (3) Summer fallowing followed by a hoed crop was ineffective. (4) Three applications during a dry summer of ten pounds of salt in five gallons of water to a plot ten feet in diameter did not kill the plant in 1918, but prevented its appearance in 1919. (5) The best time to begin eradication measures is as late as possible in the summer before the ripening of the seed. (6) For small patches a grub hoe properly used is effective. The best method is to begin at one side and dig a trench and then "move the trench" across the patch. This first treatment should be just before seeding, usually early in August, and should be followed by another grubbing when the green shoots appear in September. (7) For larger patches thorough plowing at the time given above for the grubbing has given good results. (8) In every case best results were obtained on plots where the gurbbing or plowing was followed by a heavy smother crop. In Colorado winter wheat is probably the best crop for this purpose."

This bulletin contains some very timely suggestions on the history and control of this pest. It should be in the hands of all who have the weed in their territory. The number of the bulletin is 255. Write to the State Experiment Station at Fort Collins for it.

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Alfalfa Seed Shortage.

The relatively small crop of alfalfa seed produced in the United States in 1919 is chiefly responsible for the present high prices that prevail and have stimulated importation. Since July 1, 1919, importations of alfalfa seed have amounted to upwards of 15,000,000 pounds, about one-fifth of which is of Turkestan origin. This seed is being advertised extensively and is being wholesaled at lower prices than domestic-grown seed. Commercial Turkestan alfalfa is generally characterized by a lower and somewhat more spreading habit of growth. It also has finer stems and slightly more hairy leaves. It is almost impossible to distinguish individual plants of it from the domestic strains of common alfalfa, but in mass growth differences can usually be detected.

The Russian Knapweed seeds which help one to easily recognize commercial Turkestan alfalfa are believed to be always present in this imported seed and have not been found in commercial seed from other sources.

Alfalfa seed may be sent to any of the following Seed Testing Laboratories for identification: Seed Laboratory, Bureau of Plant Industry, United States Department of Agriculture, Washington, D. C.; Branch Seed Laboratories at Berkeley, Calif., Fafayette, Ind., Columbia, Mo., Corvallis, Ore., and College Station, Texas.

The revised edition of Farmers' Bulletin No. 757, "Commercial Varieties of Alfalfa," is now available for free distribution. The bulletin describes the characteristics of the kinds and varieties of alfalfa that are available commercially in the United States, and indicates clearly the section of the country to which each is adapted.

The Branding Iron

California almond growers are taking advantage of the propaganda for the use of cheaper cuts of meat and suggesting that we do without meat altogether and eat almonds instead. Great stuff! Why not make it general? Let all the nuts get behind this campaign—the cocoanut growers of the Fiji Islands, the pinon nut pickers of the southwestern deserts and the peanut planters of Texas. With everybody boosting squirrel food the bottom would soon drop out of meat prices—and the farmers could all go to nut raising instead!

* * *

I have read the very interesting article in your magazine on the subject of Milking Shorthorns, the dual purpose cattle, and I would like to suggest an improvement which, I think, would be popular with many of your male subscribers: Why not cross the Shorthorn with the mule and put some kick in the milk?—J. M. H., Denver county.

* * *

Summer is coming. There is no further doubt of it. The American Steel & Wire company has resumed its crop reporting service.

* * *

It's an ill wind, etc. Which was again illustrated during the recent "big storm" when a Union Pacific train, tied up near Longmont, Colo., numbered among its passengers two preachers, who proceeded to make themselves duly useful, the day being the Sabbath. The passengers sat still and listened. The snow was deep on the outside and the wind was blowing a gale. Some of the passengers were oil men from Wyoming and there's no telling when another opportunity like that would have come to them to hear a sermon. So we say, it's an ill wind, etc.

* * *

It is not always easy to answer a legal question by a simple affirmative or negative. A browbeating lawyer once demanded that a witness answer a certain query by "Yes" or "No."

"I cannot do it," said the man. "There are some questions that cannot be so answered."

"Give the court an example!" demanded the lawyer truculently.

"Are you still beating your wife?" retorted the witness. And the man of the law, with a sickly grin, sat down.—New York Globe.

* * *

Figures compiled by the Bureau of Crop Estimates show a slight falling off in the amount of sugar extracted from the sugar beets in 1919 when compared, pound for pound, with the crops of preceding years. In the United States, and including the beet crop from 850 acres in Ontario, 5,887557 short tons of beets produced 726,451 short tons of sugar in 1919, while 5,577,506 tons of beets from the same sources in 1918 gave us 760,950 tons of sugar. In 1919, moreover, the average production of beets per acre was 9.27 tons, while the average in 1918 was 10.01 tons.

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WESTERN FARM LIFE,
Denver, Colo.

Comment by Farmer Putnam

OUR MISSOURI FRIEND TELLS ALL ABOUT HIS TRIP TO HOLLY ON DAIRY DAY

THEM farmers in Colorado used to laff when anyone talked about milkin' as part of the farmin' business. They said that such milk as cows give in the west, what little there was of it, ought to be left to the calves and that nobody would take up the dairy business because it was impossible to milk a cow from the saddle, and nobody could farm intelligently on foot. But they don't laff at the dairy farmers nowadays. Even them ranchmen that raises whitefaces picks cows with good udders and gentle motherly eyes so's to git the kind that'll nurse their calves well. And when it comes to the Shorthorn fellers why they brag about the milkin' qualities of their beef cattle and the beef qualities of their milkin' cattle. You kin git anything you want in Shorthorns, just accordin' to how you believe, whether you're duel purpose or single purpose.

I kin recolleck when the beef men thought they was kind-a superior to them dairy farmers but times is changin'. I've seen a lot of beef men change over to the dairy business, but I hain't found no dairy farmer yet who has went in the beef business. Of course milkin' is a hard game, but machines is bein' used now fur tit pullin', machines fur separatin' the cream—machines fur everything even fur separatin' the farmer from his money.

Them few remarks is leadin' up to my subjeckt, which is Holly, Colorado. I went down thar to the end of the Arkansas Valley, just where that river crosses the line and loses itself in the sands of Kansas. You cain't blame the river fur hidin' after crossin' the line. It has a nice trip through Colorado, startin' way up above Salidy in the mountains, roarin' through the Royal gorge, meanderin' through the orchards around Canon City, gittin' greasy with oil at Florence, and smoked up from the steel mills at Pueblo, and then lazyin' along east through them green fields by Rocky Ford, Las Animas, Lamar and Holly where it has to cross the line. I know it must hate to leave the state and sometimes it gits plum out of sight in the sand after crossin' over into Kansas.

Well I come near not bein' able to go to Holly. Josephine found a ticket to the Black and White ball in my pocket and she sez:

"See here Tom, you ain't a-goin' to dance with them darkies! Don't you furgit you was raised in Missouri; don't disgrace the family ag'in."

"What do you mean, disgrace the family," sez I.

"You know what I mean; tellin' me you're goin' to Holly fur Dairy day and then find two tickets to the Black and White ball in your pocket! What kind-a people is them that mixes that way; answer me that Tom?"

"Shucks, Josie," sez I, "you do git excited over nuthin'. That's the Holstein ball—black and white cows."

"Oh, well that's different; excuse me Tom. You kin shimmie with any of them cows, so long as you pick old ones; everybody to his taste."

Well I started off kind-a lonesome, but at Pueblo Jim Beaman, the owner of our state fair, got on the train and purty soon we seen Mike Penrose who was goin' down to Holly to judge the cows. Jim is allus around at them agricultural shows. He believes in plenty of agriculture at the state fair and that's bringin' the farmers. Last fall he had a flock of airships and the President of the United States, besides the best hog show that was ever got together in the state, and a fair dairy and beef show. He's puttin' the state fair on the map.

When we got to Holly we found the hull town dolled up in black and white colors. Them people is sure proud of their cows. They draw the color line; nuthin' but black and white's is in the show so fur, but some of them Jersey boosters in the Arkansas Valley is gittin' busy and maybe next year the Holsteins won't be alone. It's a good thing to have a few herds of some of the other breeds scattered around, because if it's all one way the farmer is apt to think that black and white milk is all that thar is in the world.

About the fust man we met was Mr. Partridge, manager of a company with a lot of letters in it—something like this: A. V. X. Y. Z. B. I. & L. Co. I think I got the letters all in, but they ain't arranged in regular order. This company owns a lot of land in the valley; probably mor'n they need. About twenty years ago it was bought fur investment by a insurance company and they had more or less bad luck tryin' to git settlers, but at last they hit on the right plan and now the Holsteins is pullin' 'em outen the hole and instead of the land bein' a white elephant on their hands it's becomin' a black and white paradise.

Besides all the fine cows, they had on display also some distinguished visitors from the east. One of 'em was Joy Morton. His father used to live in the west—up at Nebraska City many years ago and he got famous and was in the cabinet and was talked of fur vice president, etc. Well his two sons also made good, Paul bein' vice president of the Santa Fe railroad and Joy stickin' to farmin'. Fur a long time it was hard sleddin' fur Joy Morton, but he stuck to it and after changin' from beef stuff which it was too expensive to grow on Illinois land, he begin to make money outen Holsteins. He had one cow that brought him 28,000 pounds of milk one year. The hull family had to git out and peddle milk and they sold $800 worth that year offen this one cow and got $2,000 fur her bull calf.

Well I reckon that put 'em on easy street and now they're able to take trips like the one to Holly and see a little of the world. I like to see farmers git so they ain't afraid to travel around and see what the other feller is a-doin'. I know Mr. Morton will git back to his farm at Lisle with lots of new ideas about raisin' Holsteins.

He watched Mike Penrose purty clost on the judgin' and I reckon got lots of good pointers on type and confirmation. I told Mr. Morton I was glad to see him doin' so well with his herd and he sez:

"Yes we're fairly prosperous now, but ain't feed awful high!"

That's the general complaint among the farmers. Everything is so high that they ain't much profit in the business. Mr. Morton made a speech at the dinner, which was fine and which we all enjoyed. Every plate had a pint of Model Dairy Holstein milk which we all drunk. It's funny how things changes. I kin recolleck not so very long ago, when I would-a turned up my nose at a bottle of milk fur a banquet dinner. We've all got more respect fur the cow now. We used to think milk was good only fur wimmin and children and that it took red licker to make men. That thar idee died hard—and it still shows signs of life when revived with a drop or two of bootleg juice.

Holly is gittin' purty bad on this cow business; they just about worship 'em, like they was the golden calf which the Israelites made when Moses climbed up to the Continental Divide to git the marble slabs with the commandments on 'em. Me and Prof. Clark was walkin' down the main street in Holly when a farmer come by leadin' a string of young cows to the show grounds and he raised his hat and I sez:

"What's the matter Clark, did you see some lady you knew?"

"No just tippin' my hat to that heifer; when in Holly do as the Hollyhocks do. They simply worship the black and white here."

Prof. Clark came down to judge the hosses and he found it quite a chore. They're gittin' some good ones in the district; in fact, good stock in all lines is their motto.

Morgan Sweitzer, the county agent, is doin' his level best to keep 'em interested in good stock and he was one of the general managers of the show. Mr. McClusky, one of Prof. Morton's right hand men from the college was thar and I also met young Liebers, Otto's brother, showin' milkin' machines which the farmers was interested in. Mr. Reed, the new cow tester was on hand and I shook hands with dozens of farmers and I cain't remember all their names. One of 'em wanted to know if I come to judge the dairy cattle; another farmer standin' by laffed and sez:

"Say Bill, you ain't readin' Western Farm Life or you'd know that Farmer Putnam ain't no farm expert at anything exceptin' bull slingin'!"

That's the way I got roasted and I reckon I got it comin' to me, or they wouldn't say it.

Onct in a while some farmer writes in a good compliment. I just got a letter from John Prince down at Gulnare, and he sez: "I think Western Farm Life is a very good paper and enjoy reading it especially Farmer Putnam's letters. If he keeps on writing I don't know which will be the best writer, him or Charles Dickens."

That's fine. I don't know Charley Dickens, but he's probably related to William A., the Shorthorn man up to Longmont; it's nice to have them compliments.

But speakin' of the judgin', I liked the way Mike Penrose done it and the

(Turn to Page 24.)

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Farming At 8,500 Feet.

I have taken up a ranch, under the new law, of 640 acres in the South Park country, Park County, Colo., at an elevation not less than 8,500 feet. I am in the southeastern part of the park near Howbert, on what I would call the second bottom. Some of the land is pretty level and slopes to the west. There is considerable wind there at times. I want to go there as soon as I can and try my luck at ranching and do a little farming too, but I want to follow your advice as near as possible and I feel confident I can make a go of it. I think the soil is a sandy loam. I haven't any water to irrigate with; only a small spring for domestic purposes. A rancher a half mile distant has a well 30 feet deep with plenty water in it. Do you think this land would be sub-irrigated? I would like to raise some alfalfa, small grain, corn and potatoes. Do you think the altitude is too high for any of these crops? I understand that Minn. No. 13 grew verey successfully in high altitudes; also certain varieties of grain, but I am not familiar with the best kind. Beets, sunflowers, sweet clover and brome are good forage, but I am in the dark as to whether they will grow there. Rye or oats ought to be a good crop anywhere. I haven't any ideas as to the amount of rainfall there is in this section. I have a few yearlings at about 6,000 feet altitude; if I take them to this high altitude will they become stunted in growth? Later on I would like a few fruit trees?—O. B., El Paso County, Colo.

Your location in Park county at 8,500 feet is very high for general farming operations. You cannot expect to do much in the way of raising crops except for feed and for handling livestock. Corn will not mature at that altitude in any part of Colorado. Root crops as a rule do very well such as potatoes, rutabagas, stock beets, etc. Oats are a good crop but are usually cut for hay instead of being threshed for grain. An opinion as to whether your land would be sub-irrigated is of absolutely no value. No one can tell unless a test is made on the ground. However, if your neighbor has water at 30 feet and you have bottom land the surface drainage indications are sometimes a good sign as to whether the land is suitable for producing alfalfa. Hardy varieties such as the Grimm do fairly well at 8,000. Sweet clover also will grow at that altitude and it makes a good hay crop. You should have no difficulty in raising good hay if you have sub-irrigated land. For silage the only thing that would be advisable to try would be Russian sunflowers, which will probably reach the silage stage most every season at such a high altitude. A trial made with these sunflowers at over 8,000 feet in Saguache county last season was successful. In regard to rye we would suggest you try the Petkus variety which is grown at higher elevations in El Paso county. In regard to fruit. About the only thing you can expect is strawberries. The country is too high for successful cultivation of tree fruits. Your cattle will not be seriously affected by the change in altitude if you will feed them well. It will not take long for them to become accustomed to the change. We might add that if your soil is well drained and fertile potatoes would be a very good cash crop to grow.

Alfalfa As a Fertilizer.

A part of our work at the experiment station consists of studying beets in rotation with various other crops. One such test was laid out for the purpose of studying the value of alfalfa as a fertilizer where no manure or other fertilizer was applied.

The scheme of rotation is as follows: Alfalfa for two years, the third cutting of the second year plowed under. This is followed by corn, sugar beets following the corn, grain following the sugar beets, and alfalfa sowed with the grain. In this way we get one-third cutting of alfalfa plowed under every five years.

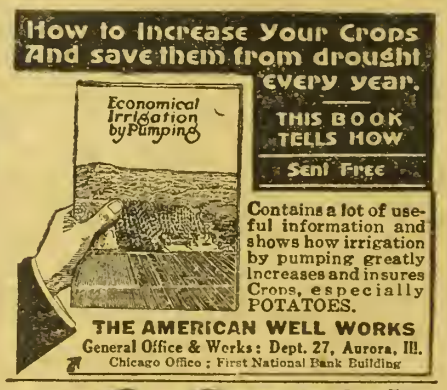
As an average of several years this system of rotation has given yields of sugar beets equal to that produced by an application of 13 loads of manure per acre. We do not attribute all of this to the alfalfa, as a certain part of it is due to the rotation. Therefore, we say that the third cutting of alfalfa plowed under in a rotation such as we have described produces beet crops equivalent to that produced by 13 loads of manure per acre.

Our corn crops have ranged from 43 to 68 bushels of shelled corn per acre. Barley and wheat both have been used as grain crops. Last year the former yielded 56 bushels to the acre; the wheat crops for previous years have averaged about 30 bushels including one year of total failure due to rust. Three cuttings of alfalfa from this rotation have averaged from 4 to 5 tons per acre. The years when only two cuttings have been made, the average has been about 1 ton less.

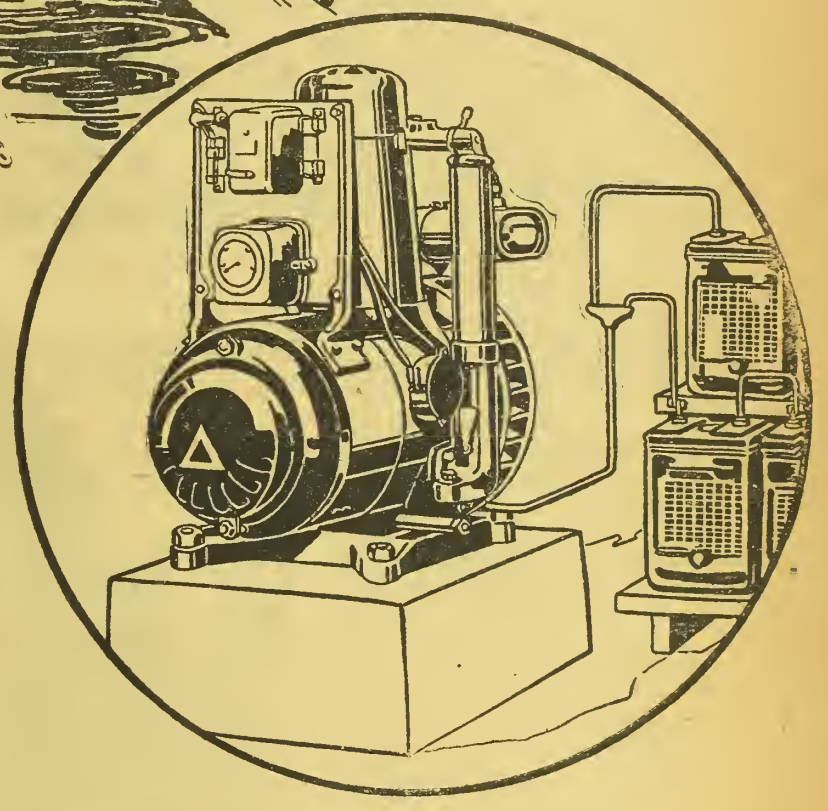
In all probability this would be a more practical rotation if the alfalfa was allowed to stand three years instead of two, the third cutting of the third year being plowed under.—Asa C. Maxson, In Charge Experimental Dept., Great Western Sugar Co., Longmont, Colo.

Using Bulls Co-operatively.

The people who have an interest in the two bulls recently brought from Wisconsin are formed into two associations. The one at Center has its laws and by-laws made up and signed. The Mirage Association no doubt has its rules formulated also. The bull at Center is at the ranch of Mr. R. A. Trout, one-half mile north of Center. Services from bull will be sold at $7, payable in advance. It is estimated that thirty cows can be handled outside of those in the association. No cows will be allowed to run loose with the bull—they will be allowed one service and then they must be taken away. It is felt that the service fee is considerably less than the members themselves have to pay and the bull is allowed to serve other cows only because the association feels that it will be a service to the community. The more good cows we get in this region the easier it will be to open the Center creamery and thus have a home industry. The Mirage bull is owned jointly by four men who will no doubt stand him to other members in the community. Both bulls come from Rust Bros., the oldest breeders of purebred Holsteins in Wisconsin. Both bulls have excellent records and should produce daughters of good milking qualities.—Saguache County Farm and Livestock Reporter.



DELCO-LIGHT



"DELCO-LIGHT Makes Chore Work Easier"

Letters we receive from thousands of our 100,000 satisfied users tell us that "Delco-Light makes chore work easier."

When so many users say that Delco-Light is a good investment, that it saves time and labor and that it increases the joys of life, you have assurance it will do as much for you.

Delco-Light does away with all dangerous open-flame lamps and lanterns.

At the push of a button, clean, safe electric light floods the house and all farm buildings, speeding up the work and making everyone just a little bit happier.

Electric power pumps water quickly to the kitchen, bathroom or watering troughs, turns the cream separator, churn or grindstone or operates an electric iron, fan or vacuum cleaner.

Delco-Light helps answer the labor shortage problem and in addition makes the farm home more attractive and comfortable.

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DAYTON, OHIO

A complete electric light and power plant for farms and country homes, self-cranking—air cooled—ball bearings—no belts—only one place to oil—thick plates—long-lived battery.

Valve-in-Head Motor
Runs on Kerosene

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There's a Satisfied User near you

Colorado State Farm Bureau News

Matter appearing in this department relates to the activities of the State and National Farm Bureaus, including official communications from the Colorado State organization and general reports, calculated to keep farmers informed regarding progress of this great educational movement.

William G. Jamison, President, State Farm Bureau.

President William G. Jamison of the Colorado State Farm Bureau is the owner of Sunnybrook Farm at La Veta in Huerfano county. Not only is he the owner, but he is the operator of the farm and its chief "hired man." Like other farmers he has difficulty in getting labor and between State Farm Bureau business, putting in crops, looking after livestock and doing most of the chores he is fairly busy these days.

Livestock is the foundation of operations on Sunnybrook Farm. All crops raised are fed on the place. Only registered sires are used and the chief product of the farm is high quality feeder cattle and stock hogs. Mr. Jamison has been on this farm for eleven years, and the place has seen constant improvement through his safe and sound policy of leaving the fertilizer on the farm to bring up the soil and make it more productive. Sunnybrook Farm is running up instead of running down. It is better by eleven years of rotation and fertility than it was when Mr. Jamison began operations there.

Mr. Jamison was raised on a ranch in Texas, spent some years in the hardware business in that state, but even during his business experience he was owner and manager of farms. So it is accurate to say that he has been in the farming business all his life.

At the outbreak of the war Mr. Jamison was made chairman of the Huerfano County Council of Defense and his splendid work in organizing the farmers for greater production attracted the attention of the authorities at the Colorado Agricultural College. After seeing him in action, President Lory drafted Mr. Jamison for organization work and he was appointed Assistant State Leader of County Agents. In that capacity he aided in organizing many counties which up to that time did not have county agent work. He neglected his own farm and his personal business in doing this public work, but felt that this was a citizen's privilege under war conditions. A year ago he severed his connection with the college and insisted on going back to Sunnybrook to resume the work which he likes best—farming.

It seems, however, that he will not be permitted to devote himself to his own interests, as he is taking a prominent part not only in the state organization, but as a member of the executive committee of the National Federation of Farm Bureaus. It is this type of actual farmers that is making both the state and National Farm Bureau a real farmers' organization.

The Farm Bureau in Action.

How the County Farm Bureau functioned while the county agent was in Wisconsin buying Holsteins is told in the following paragraph from the Saguache County Farm and Livestock Reporter:

"During our absence the Farm Bureau functioned in several communities. This is truly farm bureau work. Many claim the county agent is the farm bureau. While this may be true of some counties, we emphatically deny it for Saguache county. To wit: The Villa Grove Community mixed up 2,000 lbs. of prairie dog poison, the Cotton Creek Community organized a new committee, the executive committee met with the county commissioners relative to the county fair and other matters, the Reporter was printed and mailed the three active Shipping associations continue to ship livestock. All these things were done by the members of the farm bureau while the county agent was 1,500 miles away buying dairy cattle! This is the kind of a farm bureau we want in this country. It is the only kind that will do us much good. Hail to such work!"

Serving the Farmers.

The County Farm Bureau is responsible for locating several lots of alfalfa seed in the county which were badly infested with dodder. This seed was shipped from the Western Seed Company at Denver. Local dealers who received the seed relied on the analysis sent them by the seed company, but it was found by tests made by the Farm Bureau and the Colorado Seed Laboratory that the seed was wrongly labeled. There was enough dodder in the alfalfa seed to place one dodder plant on every square foot of ground planted to alfalfa. Local dealers were urged to recall all of this infested seed from the farmers, and practically all of it was returned.

We have a Pure Seed Law in this state which provides for the proper labeling of seed. Dealers and farmers should see that each bag of seed they buy carries a label showing kind, variety, percent purity, percent germination, date of test, where grown, locality, and noxious weeds (if in excess of 90 seeds per pound). Seed samples should be sent to the Farm Bureau office or to the Colorado Seed Laboratory at the college for free test.

In protecting the interests of the farmers of the county in this pure seed matter, the Farm Bureau is performing one of its regular functions. It is a farmers' organization and is worthy the support of every farmer in the county. Is your neighbor a member? If not, urge him to join at once.—Larimer County Farm Bureau News.

Carrot Pie.

Grate or mash 1 pint of cooked carrots, add cup of sugar, 2 eggs, ½ teaspoon of ginger, 1 teaspoon of cinnamon and a little salt. Bake in a ready prepared crust until an even brown. Many people cannot tell this pie from pumpkin pie.—M. B., Clifton, Kan.

Stack Your Hay The Easiest Way the Jayhawk

Stackers and Sweep Rakes

Harvesting hay the Jayhawk way means time, men and money saved. Jayhawk Stackers and Sweep Rakes make it easy to harvest and save every hay crop. Pays for itself the first year. Fully guaranteed. Sold direct at manufacturers price. Write today for free catalog and price list.

F. WYATT MFG. CO. 934 N. 5th ST., SALINA, KANS.

SELDOM SEE a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.

ABSORBINE TRADE MARK REG. U.S. PAT. OFF.

will clean it off without laying up the horse. No blister, no hair gone. Concentrated—only a few drops required at an application. $2.50 per bottle delivered. Describe your case for special instructions, and Book 8 R free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; allays Pain and Inflammation. Price $1.25 a bottle at druggists or delivered. Liberal trial bottle postpaid for 10c.

W. F. Young, Inc., 155 Temple st., Springfield, Mass

Kills prairie dogs, gro. dhogs ground squirrels, pocket gophers. Saves alfalfa. Experimental stations approve. 1000 tablets P. P. $1.50. Warranted. Ael your druggist or send direct Booklet Free. Address

FT. DODGE CHEMICAL CO., Ft. Dodge, Iowa

GOOD *and* PLENTY

THIS Firestone Cord Tire is of generous proportions—built to the largest standard oversize established by the industry. Built into it are mileage, safety and comfort—"good and plenty."

There is much greater air capacity than the average, much more material, and it delivers extra mileage as a natural result. The thick, heavy tread performs as good as it looks. It checks skidding, sliding or spinning of wheels.

Equip with a set of these Firestone Cords and let them demonstrate to you the value of their extra size and extra heavy tread. Through Firestone planning, resources and methods this cord tire is produced and sold at a price that gives you most miles per dollar.

FIRESTONE TIRE & RUBBER CO.

Firestone Park Akron, Ohio

Branches and Dealers Everywhere

Firestone

Does This Ever Happen On Your Farm?

THE pest nuisance costs you real money every year. While you may realize this, do you make every possible effort to get rid of the troublesome birds and animals on your place?

Mr. Chicken Hawk likes nothing better than to grab off one of your nice pullets when he gets half a chance. Br'r Rabbit is always on the alert to help himself in your truck patch. Foxes, rats and weasels live high where your chickens scratch and roost. Crows pull out the young corn, as you well know. Gophers, prairie dogs, ground squirrels and badgers are worse than a nuisance to the ranchman, the fruit grower and the farmer.

Remington UMC
for Shooting Right

A Remington pump action or autoloading shotgun will help to solve the pest question. Whether you're after chicken hawks or whether you're going duck or quail shooting you surely want a gun that will do full justice to your shooting skill. Since the first Remington was turned out in 1816, Remington has been a leader in invention and improvement in the firearms and ammunition field.

Another example of thinking ahead in serving the sportsmen of the country is the Wetproof process applied to all Remington UMC shotgun shells. Wetproof shells are treated in body, crimp and top wad with a patented waterproofing compound which absolutely seals the shell against wet. When you ask your dealer for "Nitro Club" and "Arrow" (smokeless powder) or "New Club" (black powder) shells, you'll get Wetproof. The Remington UMC Red Ball is on every box.

Send for Catalog showing the entire Remington line, delivered post paid, and mention this paper

The Remington Arms Union Metallic Cartridge Company, Inc.

Largest Manufacturers of Firearms and Ammunition in the World

Woolworth Building, New York City

Dairying and Hog Raising

H. A. LINDGREN

All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, Western Farm Life, Denver, Colorado.

Amount of Grain to Feed Hogs on Pasture.

A great deal has been said regarding the feeding of some grain with alfalfa pasture to hogs. The importance of this practice is still not appreciated by many of the hog raisers. It has been tried out where weights were taken of the hogs at intervals and the lots that were fed grain on pasture were found to make the most economical gain. Pasture alone provides but little more in nutrients than enough to maintain the pig, leaving very little for growth. The grain fed even in small amounts is all used for growth and gain. Another thing that is of importance in this connection is the fact that the young growing pig will make better use of the grain and other feeds given than the mature hog. Let the pig have nothing but pasture and he is undersized at the time he is placed on full feed. It requires a great deal more grain to fit him for market under such conditions than if he had been given a little grain along with the pasture while he was young and growing.

In farmers' bulletin No. 488 of the U. S. Department of Agriculture in which the work of the North Platte (Neb.) Experiment station was reported, there is some interesting matter on the efficiency of grain when used with alfalfa pasture for hogs. On the station the various proportions of grain to feed were tried out. When no grain was fed to the hogs the return in value of gains per acre was $45.08. Where a 1 per cent ration of corn was fed in connection with the pasture the return per acre was $70.20, and $128.49 when a 2 per cent ration was fed.

On the Uncompahgre Reclamation Project in Colorado several trials were made under supervision of the writer with the various feeds under average farm conditions. It was found that in one test a lot of 22 pigs averaging 114 pounds in weight at the beginning of a test, produced 100 pounds of gain from 226 pounds of grain. The grain used in this experiment was corn. The hogs were run on a large field of alfalfa. No apparent bad effect was noticed in the field. The normal cutting of hay was taken off.

Another interesting test made was on the farm of Ralph Nash of Montrose, Colo. In this test a lot of 41 pigs were placed on test as soon as they were weaned and were weighed at regular intervals until they were sent to market. They were given a ration of ground barley and tankage on alfalfa pasture. The first part of the period they made gains at the rate of 100 pounds for every 307 pounds of gain. As they increased in weight it required more grain and at the end of the test they were eating 440 pounds of grain to every 100 pounds of gain. The test bore out the fact that it required more grain to make the same gain when the hogs are older than when they are in young growing condition.

The amount of grain to feed on pasture will vary with the conditions. It is generally recommended that a ration of 1 to 3 per cent be given each day. In other words, for every 100 pounds of hog feed 1 to 3 pounds of grain. This will bring you more economical gains and far more satisfaction in seeing the hogs keep in a thrifty condition.—H. A. L.

Purebred Bulls Pay.

For the past twelve or more years the Iowa Experiment station has been carrying on experiments to show the effects of using well bred purebred dairy bulls for improving the common native stock. The cows used in this experiment were purchased in Arkansas and, so far as known, carried no blood of any of the several dairy breeds. These cows were bred to purebred bulls, including Guernsey, Holstein, and Jersey. The daughters by these purebred bulls and out of the scrub cows proved themselves much superior to their dams. The daughters averaged 2,338.5 lbs. of milk and 90 lbs. of butterfat more than their dams. There was an increase of 64 per cent in milk and 54 per cent in butterfat. The second generation, that is, the granddaughters of the scrub cows and by the purebred bulls, made nearly as great an increase over their dams as did the daughters over their scrub dams. The increase of the granddaughters over their scrub grandmothers was 4,741 lbs. milk and 186 lbs. butterfat—the increase being 129 per cent in milk production and 109 per cent in butterfat.

When the original cows were brought into the herd they received good care and feed, the same sort of care and feed their daughters and granddaughters later received. While it is true that feed and care from birth gave these daughters a larger opportunity, yet it is plainly the breeding rather than the feed and care that enabled two crosses of prepotent dairy blood to more than double the production of the cows. This experiment shows a striking example of the value of pure-bred bulls of dairy quality.

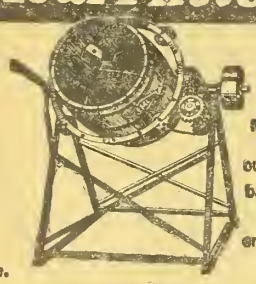
We consider the campaign to eliminate the scrub bull from the farm one of the best and most practical pieces of work that has been inaugurated in livestock husbandry. It is a great deal of satisfaction to us to see the work taken up by many states. In these times of high prices of feeds, the farmer cannot afford to keep cows unless they are giving him a good return and the best way to secure a better herd is through the keeping of a purebred dairy bull.—Hoard's Dairyman.

The Colorado Dairy Council.

The message of the Colorado Dairy Council is the same as that of the National council, i. e., "There are no substitutes for milk and its products." Milk, butter, cheese, and ice cream are protective foods, indispensible to growth and good health and essential in the perpetuation of the human race. If you use them freely you will avoid many physical ailments and escape disease resulting therefrom.

The Colorado dairy council is an educational organization of the dairy in-

Will Pay For Itself On Your First Job



CONCRETE ELMCO MIXER

Build that concrete foundation, watering tank, walk, steps, or cellar with the "Elmco" Concrete Mixer. It will pay for itself on your first job. If you do your own concrete work it will be done right—no cheating—no cheap mixing.

FREE Catalog With Mixing Formulas

Don't wait on a contractor—get an "Elmco" and do your own concrete work. Write for our free catalog telling you how to mix good concrete and mortar, also telling you about the "Elmco." Fill out the coupon below, and mail it for your copy today. Address

E. F. ELMBERG CO., INC.
140 Second Street Parkersburg, Iowa

Mixers shipped from warehouse, Denver, Colorado.

E. F. Elmberg Co., Inc.,
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Please send me your free catalog, telling how to mix good concrete and mortar, also describing the "Elmco" Concrete Mixer.

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Another Valuable Discovery

PREVENT CONTAGIOUS ABORTION

If your cows are dropping dead calves or immature calves, don't sacrifice either cows or future calves.

Our U. S. Abortion Tablets (Calkins) will stop it and prevent it in the future. Over 9,000 cows treated successfully.

Just as effective and reliable as our Kansas Blackleg Aggressin (and that is practically perfect.) Write for affidavits of users.

Price, $1.04 per treatment, including war tax.

THE U.S. BLACKLEG SERUM CO. INCORPORATED

Oklahoma City, Okla.
Denver, Colo., Stockyards.

DE LAVAL

THE EVERLASTING CREAM SEPARATOR

There are thousands of voluntary letters in the De Laval Company's files, similar to this letter from Mr. Watkinson, of Iowa, bearing out the statements made in connection with the long service of De Laval Cream Separators.

"My De Laval Separator has been in use about seventeen years and is doing just as good work today as when I bought it. I think it is good for ten years longer. With butter-fat at present prices no one can afford to use a cheap machine.

"When looking around to see what kind of a separator to buy I found that all the creameries in our vicinity were using the De Laval. The thought struck me, what is good enough for the creameryman is good enough for me, and my experience proves I made no mistake."

Ed. Watkinson

In fact, by averaging up the years of use, it has been found that the average life of a De Laval is more than 15 years; and that during that time they have required little attention or repairs, and have produced the highest possible quantity and quality of cream with the least time and effort.

That is why there are more De Lavals in use than all other makes combined. Sooner or later you will buy a De Laval.

The nearest De Laval agent will be glad to demonstrate a De Laval. If you do not know his name, write to nearest De Laval office.

The De Laval Separator Co.

165 Broadway, New York

29 E. Madison St. Chicago. 61 Beale St. San Francisco

50,000 Branches and Local Agencies the World Over.

GET Your Cream Separator NOW!

ONLY $2 DOWN A Year to Pay

on This Easy, Self-Earning Plan!

You won't feel the cost at all. The machine itself will save its own cost and more before you pay. We ship any size separator you need direct from our factory and give you a whole year to pay our low price of $44 and up. Read what Alfred Geatches, North Jackson, O., says: "We are getting more than twice the cream we were before. The separator is very easy to clean and runs very easy." Why not get a fully guaranteed New Butterfly Separator for your farm and let it earn its cost by what it saves?

(22)

New BUTTERFLY EASY TO CLEAN

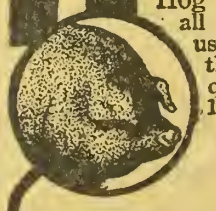
Cream Separators have these exclusive, high-grade features: Frictionless pivot ball bearings bathed in oil—self-draining bowl—self-draining milk tank—easy-cleaning one-piece aluminum skimming device—closed drip-proof bottom—light-running cut steel gears, oil bathed. Guaranteed highest skimming efficiency and durability. We give

30 Days' FREE Trial—Lifetime Guarantee

against all defects in material and workmanship. We ship you the size machine you need and let you use it for 30 days. Then if pleased you can make the rest of the small monthly payments out of the extra profits the separator saves and makes for you. If not pleased, just ship the machine back at our expense and we will refund what you paid. You take no risk. Write for FREE Catalog Folder now.

ALBAUGH-DOVER CO., 2129 Marshall Boulevard, CHICAGO

HOGS Make 'em Grow Fast



Hog and poultry raisers in all parts of the country are using Semi-Solid Buttermilk because they know it is the "Best Hog and Poultry Feed on Earth." It gives quicker gains, earlier marketing and bigger profits. 100 per cent digestible.

Semi-Solid Buttermilk

"The Best Hog and Poultry Feed on Earth."

Just creamery buttermilk with the water removed and nothing added. The same as home churned. Contains high percentage of protein and natural lactic acid. Contains no sulphuric acid or other injurious preservatives. Natural lactic acid keeps it fresh indefinitely. Semi-Solid Buttermilk is pure enough to drink or use in batter cakes. Don't use a substitute or so-called modified buttermilk. Get the Genuine Semi-Solid Buttermilk, absolutely pure and unadulterated, for quick results.

Better Than Grain Feeds. Order a barrel of Semi-Solid Buttermilk (average weight 500 pounds). One barrel makes 1000 gallons of pure, rich, buttermilk feed. **Order today.**

CONSOLIDATED PRODUCTS COMPANY

Dept. 205 **Lincoln, Nebraska**

dustry. It encourages production and stimulates manufacture of butter, cheese and ice cream. It invites the use of more milk and milk products in the diet of the consumer. With the realization of this program we will have a healthier nation both mentally and physically.

Everyone engaged in the dairy industry can help in this work by encouraging this practice by all their acquaintances. Milk is easily digested. It contains the magical growth stimulating substance called vitamines. These are also contained in all of the milk products. Remember that healthy children are the basis of a healthy nation.

Milk brings health.

Health means wealth.

Health and wealth make a contented nation.

MYERS HONOR-BILT SPRAY PUMPS

Spraying days are here — trees, vines and shrubbery are blossoming and leafing out. Vegetables are in the ground and growth is advancing rapidly. The time is ripe for spraying. Development of tree and plant life brings numerous pests which attack and quickly destroy. Combat them successfully by using a MYERS "Honor-Bilt" SPRAY PUMP and your efforts will be well paid for by better and larger crops.

MYERS SPRAY PUMPS and ACCESSORIES come in many styles and sizes and meet all needs. Each Pump is carefully built and is equipped with the best of Accessories, works easily, and when properly operated applies the mixture uniformly and correctly. You can entrust your spraying to a MYERS PUMP with confidence for success. Catalog showing the complete line on request. Drop us a card.

MYERS PNEUMATIC SPRAYER—

Has Self-Locking D-Handle, Screw Top, Galvanized Iron Tank, Brass Cylinder and Adjustable Long-Distance Nozzle. Spray can be adjusted from broad fan like to long distance. Suitable for spraying Trees, Vines, Shrubbery, Plants and Gardens.

Suitable for Spraying Trees, Vines, Shrubbery, Plants and Gardens.

F. E. MYERS & BRO.
NO. 309 ORANGE ST. ASHLAND, OHIO.

Give the Cows a Chance With The Viking

Your cows are all right—the butterfat is in the milk and they will give it—but it is up to you to separate it.

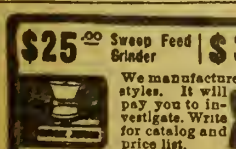
Are you blaming your cows for your poor record of butterfat? Buy a VIKING CREAM SEPARATOR and get the maximum amount of butterfat and cream from your milk — give your cows a chance to make good with a VIKING.

Write Dept. L-1 for further particulars.

Swedish Separator Company
507 S. Wells St. Chicago, Ill.

NATIONAL Hollow TILE SILOS
Last FOREVER
Cheap to Install. Free from Trouble.
Buy Now Erect Early Immediate Shipment
NO Blowing In Blowing Down Freezing
Steel Reinforcement every course of Tile.
Write today for prices. Good territory open for live agents.
NATIONAL TILE SILO CO.
H. O. FARRELL, State Agt.
303 Commonwealth Bldg., Denver, Colo.

$25.00 Sweep Feed Grinder | $31.00 Galvanized Steel Wind Mill.



We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.

CURRIE WIND MILL CO.,
610 E. Seventh Street, Topeka, Kansas.

Use milk, butter, cheese and ice cream in the diet and all the above will be added unto you. Further, join the Colorado Dairy Council and help bring this to the minds of all.—H. A. L.

Dust Injurious to Young Pigs.

It is difficult to keep the beds clean for the brood sows. No matter how much bedding one uses on a dirt floor, the dust is sure to be worked to the top. Whenever the pigs or the sow stir around the air of the pen is filled with dust. This is a serious condition for the young pigs. They breathe the dust which causes an irritation that proves fatal in a large number of cases. It is hard to overcome this difficulty. When it is available, crude oil or smudge oil is a good thing to use with which to sprinkle the bed. This is heavy enough that it will settle the dust and tend to keep it down for a considerable period of time. It will pay the hog raiser to give this matter attention.—H. A. L.

Reed Goes With Gossards.

Prof. O. E. Reed has resigned as head of the department of dairying at Purdue University, Lafayette, Ind., to become superintendent of production for the Gossard Breeding Estates, with farms at Martinsville, Ind., Preston, Kan., and Axial, Colo. In his new position he will have charge of the Gossard Ayrshires, as well as the widely known Berkshire herd and Percheron stud. Prof. Reed was born and reared on a Missouri farm, graduating from the University of Missouri in 1908. He was an assistant in that institution for a year before he went to Purdue as instructor in milk production. In 1910 he was called to the Kansas Agricultural College, where he became head of the dairy department in 1911. In 1918 he resigned to accept the appointment as head of the dairy work at Purdue. His successor at the Indiana college has not yet been appointed.

Stanley H. Martin, formerly with Good Hold Farm, Mentor, O., has also joined the Gossard organization.—Breeders Gazette.

University Cow Breaks Record.

Idaho Violet Posch Ormsby 337275, a Holstein bred and owned by the University of Idaho, produced last year on advanced registry test 21,399.0 pounds of milk and 800.97 pounds of butterfat, a record that places her among the highest producing cows of the northwest and of the country. At the completion of her record, which has been a long and steady grind, she was in excellent condition, weighing 1,445 pounds. During the record she stood in the stanchion beside the other cows and received the same care and attention as the remainder of the herd. Perhaps one of the most striking features of her record is the fact that last year on private test she produced 21,417.6 pounds of milk and 796.36 pounds of butterfat, and had only a month of rest between the records.—Idaho University News Letter.

Ark. Valley Tester's Report.

Report for the month of March of the Arkansas Valley Cow Testing association, headquarters at Lamar, Colo.:

Number of cows tested, 338.

Average pounds of milk per cow, 897.

Average pounds of butterfat per cow, 30.1. The five highest herds are:

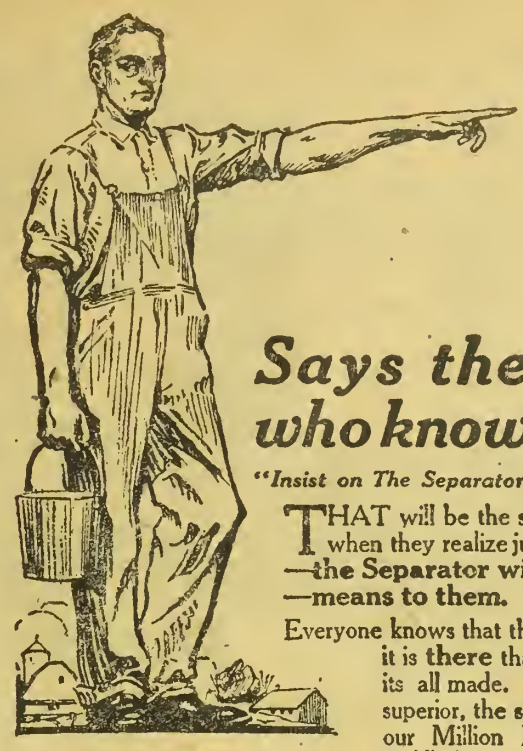
Owner—	Average pounds Milk per Cow.	Butterfat per Cow.	No. Cows
A. B. S. Co. Center Farm	1,431	47.2	20
Green Mtn. Dairy	1,182	37.8	19
Geo. D. Shell	1,110	37.7	22
Boetta Bros	1,089	33.7	17
L. W. Markham	984	35.5	8

Best individual cow, milk: Owned by American Beet Sugar company's Center farm at Lamar; milk, 2,118 lbs., butterfat, 76.3 lbs.

Second best individual cow, milk: Owned by Green Mountain Dairy, Lamar; milk, 2,040 lbs., butterfat, 63.2 lbs.

Best individual cow, butterfat: Owned by American Beet Sugar company's Center farm; milk, 2,118 lbs., butterfat, 76.3 lbs.

Second best individual cow, butterfat: Owned by Model Dairy (Arkansas Valley Sugar Beet and Irrigated Land Co.), Holly; milk, 1,824 lbs., butterfat, 75.5 lbs. In comparison with the production of last month, there has been an increase in the average milk production of 60 lbs. per month, with a very small increase in the production of butterfat. The number of "quality cows" has decreased from 73 to 65, but the number of cows producing over 60 lbs. of butterfat has raised from 6 last month to 12 this. The general condition of the herds tested has improved and the cows are in better milking condition.—B. M. Reed, Tester.



Says the dairyman who knows separators

"Insist on The Separator with The Million Dollar Bowl"

THAT will be the sentiment of dairymen everywhere when they realize just what the EMPIRE-BALTIC —the Separator with the Million Dollar Bowl —means to them.

Everyone knows that the Bowl is the whole separator—it is there that all the work is done—the profits all made. Therefore if the Empire Bowl is superior, the separator must be superior. And our Million Dollar Bowl is superior! The world's foremost centrifugal engineers, our laboratories, our whole organization have spent years in developing it to its present perfect stage. Considering all this, and the enormous additional butter-fat saving it will effect for dairy farmers this Million Dollar figure is but a small item.

The trade-mark below is the family "coat-of-arms" of the leading line of dairy machinery —EMPIRE. You will find it on the EMPIRE-BALTIC dealer's store.

Why does this Million Dollar Bowl save more butter-fat? It's this: BECAUSE—it is self-centering, self-balancing and free from vibration, and you, as a dairyman, know that vibration wastes butter-fat since it shakes the cream back into the milk after separation. This same freeness from vibration means greater endurance—that fact is obvious.

We have told you just what we have accomplished. The question now is: What are you going to accomplish in extra profits this year? How much more butter-fat are you going to get out of your milk?

With the EMPIRE-BALTIC on your farm you are going to have a better chance of making extra dairy profits this year than you could possibly have otherwise. Write for our literature 127-S.

Empire Cream Separator Co., Bloomfield, N. J.

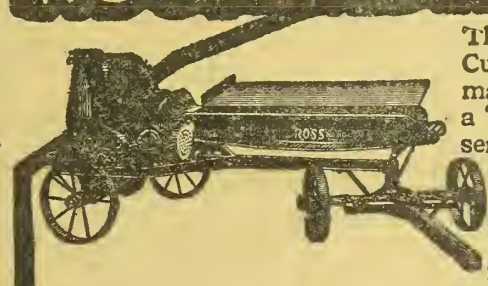
Manufacturers of Empire Milkers and Gasoline Engines

Chicago, Denver, Atlanta, Toledo, Syracuse, Minneapolis, San Francisco, Montreal, Toronto

EMPIRE-BALTIC

The Separator with the MILLION DOLLAR BOWL

We Match Your Power



There is a Ross Ensilage Cutter that will exactly match your power whether a "four-horse" gasoline or kerosene engine, a tractor or heavy-duty steam engine. And no matter what model you choose, you'll get a cutter that will give you better silage; one that will go through any job of silo-filling without choking or chattering—at low speed and at low power cost.

ROSS ENSILAGE CUTTERS

The Ross special Ball-bearing End Thrust and Extra Knife Adjustment holds the knives right up against the shear-bar—*all the time*—assuring clean-cut silage with all the rich corn juices retained, instead of silage that is "chewed" and torn.

Study the Ross carefully. Note the Six-Fan Blower, Wish-bone Steel Mounting, Self-conforming Bearings, and, on the Flywheel Type, the genuine Rockwood Fibre Pulley which absolutely prevents belt slippage and gives you maximum power.

Write today for free literature and name of nearest Ross Dealer. Get all the facts about this highest-quality cutter which matches your present power, operates at lowest cost *and cuts clean*—always!

THE E. W. ROSS CO., 508 Warder St., Springfield, Ohio

CLINTON IMPLEMENT CO., Denver, Colo., Distributors

And 20 other Leading Shipping Points in U. S. A.

NO MORE BLACKLEG

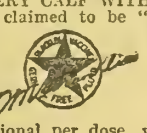
ARE YOU VACCINATING AGAINST BLACKLEG AND STILL LOSING CALVES?

If so, you must be using an inferior Blackleg Vaccine.

The GENUINE DR. O. M. FRANKLIN'S KANSAS GERM FREE BLACKLEG AGGRESSIN (Vaccine) (The only aggressin backed by a guarantee to pay for every calf you lose from blackleg after vaccination). SAVES EVERY CALF WITH BUT ONE VACCINATION.

Do not be misled by cheap imitations claimed to be "just as good" or "the same thing."

Reliable products are always subject to imitation, therefore, be sure you find this trade mark on every bottle you use. IT IS YOUR PROTECTION.



Price 40c per dose; for 10c additional per dose, we issue a written guarantee against loss from Blackleg. Comes ready to use in 5, 10, 20, 45 and 90 dose bottles. Our special make syringe $3.00. Free Booklet on request. Order through our local agent or from our nearest office.

THE KANSAS BLACKLEG SERUM COMPANY,
409 Livestock Exchange Building, Denver, Colorado.

Amarillo, Tex.; El Paso, Tex.; Ft. Worth, Tex.; Oklahoma City, Okla.; Phoenix, Ariz.; Pierre, S. D.; Salt Lake City, Utah; Santa Maria, Calif.; Wichita, Kan.; Kansas City, Mo.

Colorado Consigns to the National Holstein Sale

(Continued from Page 5.)

Changling, and his dam is Manor Johanna Korndyke Mondamin. This calf is of good conformation. His two nearest dams have an average production of 39.09 pounds of butter in 7 days and 154.29 pounds of butter in 30 days. This bull is bred right and will be in demand at the sale. He is one of the straightest calves in the state. Beside the bull this farm has consigned a cow and a heifer. The cow is a large typy individual with an unusually strong constitution and straight topline. Her name is Piebe Changeling Clothilde. She was sired by Changeling Butter Boy 7th and her dam is Piebe Queen Aaggie De Kol. Piebe Changeling Clothilde herself has a 7-day record of 30.39 pounds of butter from 628.0 pounds of milk. Her 30-day record is 190.52 pounds butter from 2,369 pounds of milk. She weighs close to a ton and is one of the best cows in this noted herd. The heifer consigned by this farm is Columbine Changeling Clothilde, whose sire was Woodcroft Changeling and dam the cow mentioned above. Her two nearest dams average 37.41 pounds butter in 7 days from 633.8 pounds of milk. She is an excellent individual.

Mr. L. C. Donley of Morrison offers a heifer that will be a credit to the Colorado consignment. She is a large heifer carrying a great deal of white. Her two nearest dams average 37.96 pounds of butter in 7 days. Her name is Case Aaggie Model. Her sire was King Model, whose dam was Model Segis Korndyke, a 40.32 pound cow. The dam of Case Aaggie Model made 27 pounds of butter in 7 days as a 4-year-old.

The Pahgre Valley Ranch of Montrose have given the opportunity to select three heifers from their herd. All of the heifers selected were sired by Sir Johanna Bess Segis, who was sired by Piebe Laura Ollie Homestead King. The dam of Sir Johanna Bess Segis is Johanna Bess Segis, a daughter of King Segis Pontiac Count, one of the greatest present sires of the breed. This cow has a yearly record of close to 1,100 pounds of butter. She is owned by Arden Farms in Minnesota. The heifers consigned are all typy individuals with good size for their age. They will add a great deal to the appearance of the young stock consigned. One of these heifers, Pahgre Elleb Johanna Bess, was junior champion at Utah State fair in 1919.

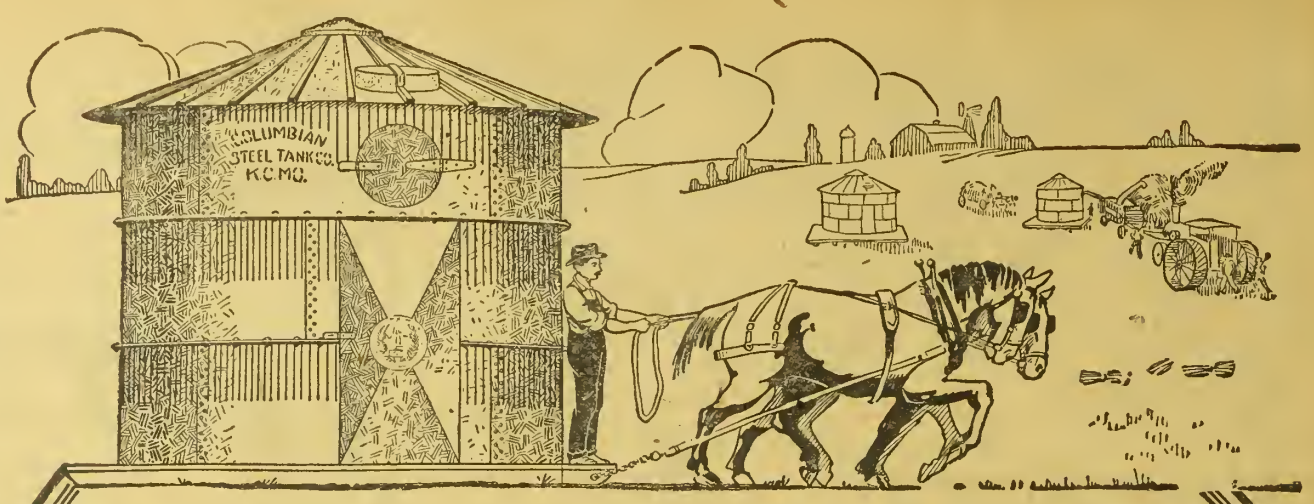
The other animals consigned come from the farm of M. E. Penrose of Denver. One of these heifers is Denver Alexina Pontiac, whose dam has a 32.22 pounds record in 7 days. She is an exceptionally well bred heifer. Her sire was Johan Duchess De Kol Lad, who has a 37-pound daughter. As a whole, the Colorado consignment is one that we can rightly be proud of.

The dates of the sale are June 3, 4 and 5, and the place the fair grounds at St. Paul. It will be the greatest sale America ever had, and Holstein breeders should plan to go. The Holstein World had the following to say on the subject:

"The keynote of the St. Paul sale will be quality. None but individuals that pass a rigid inspection as to conformation will be allowed in the sale. The breeding must be such as to make the animal readily desirable and the record backing either for short or long time periods must be convincing. It is hoped by this sale to set some kind of a standard as to valuations and due care will be exercised by each state association to see that the quota from that state is fully up to high standards to insure the proper results.

"The Minnesota association has announced that a prize of $500 to the state association sending the ten animals selling for the highest average will be given, and Minnesota herself has magnanimously withdrawn from competition for this prize. In fact, Minnesota playing the host to her sister states is planning the entire management of the sale on a scale befitting her role. She does not seek to put more cattle in the sale than other states, nor does she seek advantages in dividing the profits that may accrue from the sale. She is setting the example for other states in the conduct of sales of this nature and her position in the entire matter should be a source of gratification to her sister states."

The Denver City Council decided to kill the Proske anti-horse law after watching the work of draft horses in the big April snowstorm, which proved too much for trucks and autos.



Here is the Grain Bin That Actually *Makes* Money for the User!

This assertion was proved last year to the complete satisfaction of thousands of users throughout the United States.

THE COLUMBIAN PORTABLE STEEL GRAIN BIN

will make money for you this year because—

First. You can thresh direct into the bin and eliminate the expense of sacks, twine, labor and the waste of threshed grain which you have with the old method of hauling the grain from the thresher.

Second. You have ample storage facilities at all times and are not dependent on congested elevators, freight car shortages and low markets. You are assured of a place to keep your grain until it is to your advantage to market it.

Third. A Columbian Steel Grain Bin is absolutely proof against wind, rain, fire, rats, birds, or any other such hazards. It is the best possible insurance for your grain.

Columbian Steel Grain Bins are solidly constructed of the best quality of rust-resisting galvanized sheet steel. The sides are of 20 gauge metal, the bottom of 24 gauge and the roof of 26 gauge. It is of sectional construction and is held together by means of our patented joint which adds strength and rigidity to the walls. Additional strength is also secured by corrugating the upper half of each sheet. It is shipped knocked down and is so easy to erect that any one can set it up in a few hours time. It can be erected on a platform mounted on skids and easily transported to any part of the field.

Every Columbian Grain Bin is provided with a 5 ft. by 2 ft. steel door which has a hasp for locking. There is also a collapsible shoveling board which prevents the grain from flowing down any faster than it is shoveled away. A sacking spout is furnished by means of which fover half of the contents of the bin may be removed without shoveling.

Do not delay in ordering your **Columbian Grain Bin.** Make sure of obtaining one of them by giving your dealer your order NOW for future delivery. Insist on a **"COLUMBIAN"** bin. If he cannot take care of your needs write us direct for our complete illustrated descriptive circular No. 300.

COLUMBIAN STEEL TANK COMPANY

"Tanks for the World" **"Since 1894"**

1519-1625 West 12th St. Kansas City, Mo.

Sell Your Milk---and Feed

A. & C. Calf Meal

It Costs Only One-Third Of What Your Milk Sells For

It contains all necessary food elements to fatten calves quickly and keep them in good condition. Most dealers carry it in stock or will order it for you.

ORDER FROM YOUR DEALER

IN 25, 50 OR 100 POUND SACKS.

If your dealer cannot supply you we will ship you direct. A. & C. CALF MEAL is sold with a guarantee to give results or money refunded. A trial order will prove that you can raise better calves for one-third what it now costs you to raise them on milk. Manufactured and guaranteed by

ADY & CROWE MERCANTILE CO.

1900 Fifteenth St. Denver, Colo.

Double Your Ford's Life

-and Make it Safe

MAKE it run **twice as far** and be worth **twice as much** to you. Make it as steady and easily controlled as a $3000 car. Cut out the grinding, chattering, tire and gear-destroying strain every time you apply the brakes.

Be rid of transmission and axle troubles, with the big upkeep cost they bring, by equipping your car with

Peed BrakeS

Double the Life of Your Ford

They save you upkeep cost, lengthen life of your car, make driving safe. Insure a safe, sure, strainless stop when and where you want it, because the braking strain is transferred from the transmission to rear wheel drums **where it belongs.**

Absolutely guaranteed. Easily attached with wrench. Nothing to remove from car. Operated by regular foot brake pedal. No interference with present emergency brake.

WRITE TODAY for illustrated folder that tells all about Peed Brakes and how they save you actual dollars in upkeep.

PEED SALES COMPANY

12 West 19th Street, Kansas City, Missouri.

DEALERS — Ford owners everywhere are buying Peed Brakes. Write or wire for exclusive agency offer.

Over 1,200 Hollow Tile Silos

BUILT BY US.

THE HINMAN SILO DENVER

More than all other makes combined prove: The Hollow Tile Silo is best.

We are experienced and reliable builders. We do good work and stand behind it.

Of course you want our silo and our service. It costs no more. We have an agent near you.

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We Fix Radiators

AND FIX 'EM "RIGHT"

Honey-Comb Cores installed in automobile, truck and tractor radiators. Write for price list and information booklet.

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1455 Court Place Denver, Colo.

Johnstown Tester's Report.

Report from Walter Geurkink, tester for the Johnstown Testing association for the month of March, shows 410 cows tested. Average pounds of milk per cow, 779; average pounds of butterfat per cow, 30.05; number of cows producing more than 40 lbs. fat per month, 98 cows. Thirty-one cows produced over 50 lbs. of fat during the month.

Highest butterfat production: Milk, 2,817 lbs., fat 107.08 lbs., by Rocabie Clyde Johanna (age 7 yrs.), registered Holstein owned by W. A. Purvis, Johnstown. Rocabie made this record under normal herd conditions. She came fresh February 11, 1920.

Highest herd average: Average milk, 1,108.7 lbs.; average fat, 40.5 lbs.; number of cows, 22; registered Holsteins owned by Lohry & Wailes, Johnstown.

Lohry & Wailes had seven cows producing over 50 lbs. fat and had second record for butterfat, which was 87.7 lbs. fat made by Korndyke, a registered Holstein cow.

Roughage in the Dairy Ration.

The feeding value of corn silage, corn fodder and corn stover in the dairy ration is not sufficiently appreciated, especially in those regions where legumes do not thrive, says a specialist of the Dairy Division, United States Department of Agriculture. A recent study of records from cow-testing associations points to the conclusion that the growing of more corn roughage and less non-leguminous hay would increase the profitableness of the ration.

In all sections where legumes thrive it is, of course, advisable to grow them, as their value is well recognized for feeding dairy cattle. In fact, from a study of cow-testing association reports it would seem that even grain does not fully take the place of good legume roughage. It is in those sections where legumes do not thrive, however, that dairymen may well consider the growing of more corn roughage and less non-legume hay.

Few plants apparently contain all the substances required to nourish properly the animal body, but in the light of present knowledge the corn plant seems to be one of these. It is possible to balance a ration from corn products only that will enable the animals to thrive and reproduce with apparently no ill effects. This is not the case with many other crops. Corn, then, has unusual feeding properties.

Experimental work done at the South Carolina and Pennsylvania stations has shown that it is practical under some conditions to feed dairy cows on a ration of corn silage and grain without hay. Such a ration has been used successfully in feeding beef steers. Reports from one cow-testing association in a non-leguminous hay region having an unusually high income over cost of feed and large production per cow is in a district where the dairymen have practically discontinued the feeding of hay, but instead feed silage and corn fodder. In this association the grain ration is also composed largely of corn by-products.

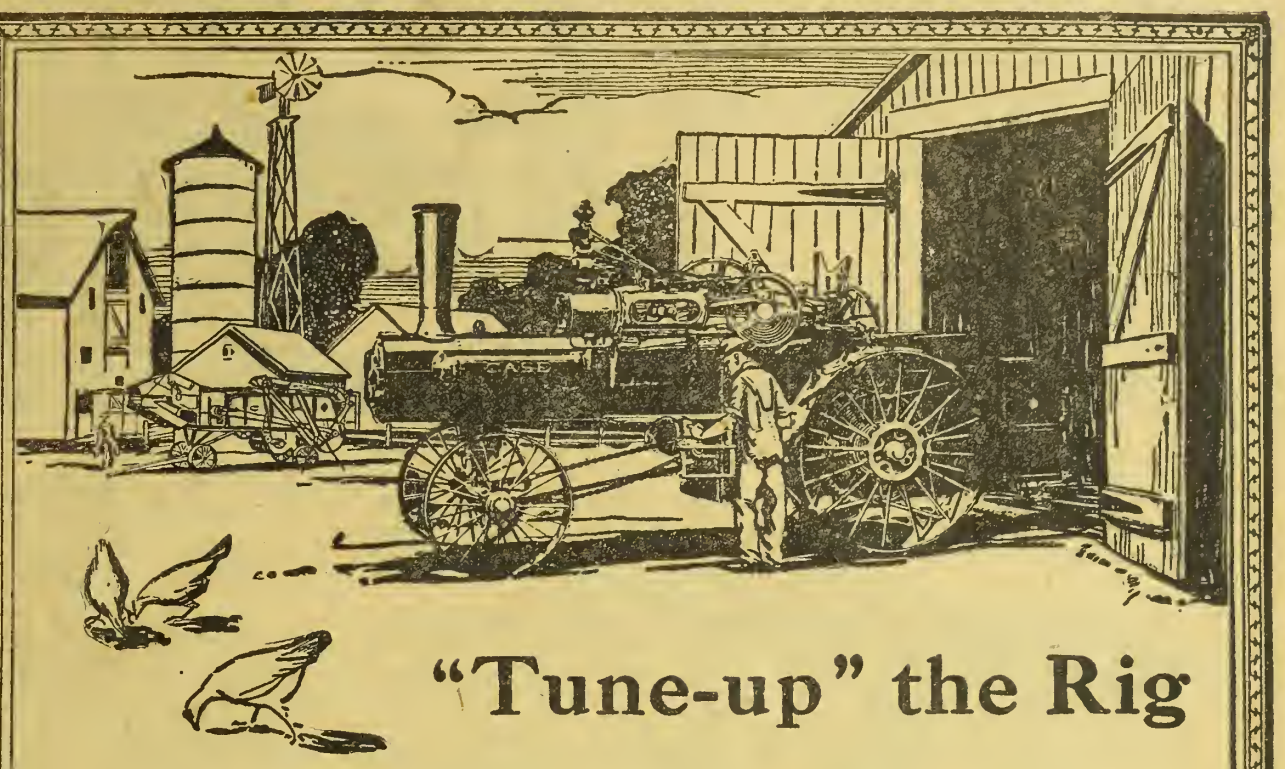
No matter what other conclusions may be drawn from the evidence available showing the value of corn fodder and corn silage as dairy feeds, it seems certain that the corn plant provides an excellent roughage.

Hay is often damaged very much by becoming overripe. Storms damage it seriously. The feeding value of corn is not damaged by its becoming mature, and if it is properly shocked storms do little damage to it.

There are undoubtedly many dairymen who can well consider the wisdom of reducing the amount of non-leguminous hay produced, of increasing their pasture, and of growing more leguminous feed, corn fodder, and silage to feed their dairy cows.

Soil Blowing Suggestion.

While the winter wheat crop and much land of some of his neighbors was blown over into western Kansas during the recent big "blow," Paul Mead, one of our Farm Bureau members west of Berthoud, saved his wheat and soil too, by plowing furrows across his wheat fields, throwing the soil away from the direction of the prevailing winds. Mr. Mead is very enthusiastic over this method of handling light soils, and the results he has attained should be noted by farmers in this county. He has an excellent stand of wheat which has apparently been damaged very little by the severe winds, while in adjoining fields the wheat is a total loss. Mr. Mead plowed the furrows about every 75 to 100 feet. In case the furrows fill up as they sometimes do, he simply plows them out again.—Larimer County Farm Bureau News.



"Tune-up" the Rig

ONLY a few weeks remain before threshing season will be here with a rush. Be sure you are ready. Get your Case "Steamer" out and go over it.

See that the boiler is thoroughly clean inside. Polish piston rod and valve stem. Look for lost motion at both ends of connecting rod, and adjust the brasses if necessary. Re-pack the pump and possibly the governor stem. Clean oil holes and grease cups so that lubricant will pass freely to all bearings. Be sure that leads to water-column are clear. We suggest that you have on hand a supply of water glasses, with proper gaskets. The safety valve is probably all right, but be sure it "pops" when it should. Scrape out exhaust nozzle, giving the steam a clear passage, directly up the stack. Replace worn clutch shoes; also repaint boiler and stack.

Overhaul the separator belting and re-lace or re-place where needed. Wash out every bearing with kerosene and see that oil holes are open. Replace worn teeth in cylinder and concave, and look for harmful endplay in cylinder. 1/64 inch is right. Examine every box and bearing and take up or re-babbitt where needed. Tighten loose nuts and replace lost bolts.

Be sure you have the supplies and tools you will need. It is well to have some spare parts on hand to guard against possible delays. Check up your stock of parts with the list suggested in your "Case Thresher Manual", and order what you lack. If you have no copy of our "Thresher Manual", you should have one, and we will send one on request.

Remember that time is money to the thresherman, and right now is the time to save time.

Look for the EAGLE Our Trade Mark

J. I. CASE THRESHING MACHINE CO., Inc.

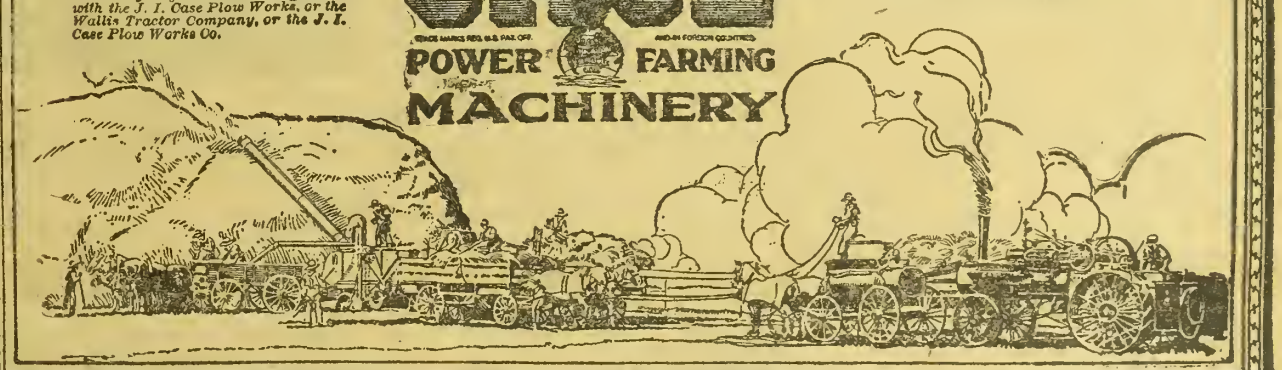
Dept. W-5, RACINE, WIS., U. S. A.

Making Superior Farm Machinery Since 1842

To avoid confusion, the J. I. CASE THRESHING MACHINE COMPANY desires to have it known that it is not now and never has been interested in, or in any way connected or affiliated with the J. I. Case Plow Works, or the Wallis Tractor Company, or the J. I. Case Plow Works Co.

CASE POWER FARMING MACHINERY

NOTE: We want the public to know that our plows and harrows are NOT the Case plows and harrows made by the J. I. Case Plow Works Co.



Zang's Percheron Sale.

The sale of registered Percherons on Zang's Elmwood Stock Farm at Broomfield, Colo., goes a long way to show that good horses are still in demand. The sale was held April 6 and was well attended. As briefly mentioned in the issue of April 15, some 50 head of mares and stallions were sold, representing some of the best horse flesh in the world. Much of the offering was sired by Champagne, the senior herd sire. This horse has an international reputation as a producer of prize winners, and he himself has a worthy list of winnings. The junior herd sire Negro is, without doubt, one of the great sires of the breed. Many of the mares sold were carrying colts from one or the other of these sires.

Grand champion and champion animals of the large shows of the country were sold in the ring. The offerings were well fitted; not overdone, but just enough to show what the animals really were. Mr. Herbert Howarth, who is in charge of the horse breeding work and management on the farm, is a thorough horseman as is shown by the development of the horses kept.

There were some outstanding bargains during the day. The prices received as a whole were good and fair to both parties. Governor Shoup's farm near Colorado Springs is to be graced by six of the animals sold in the ring. He was the purchaser of Glancer, a beautiful 2-year-old son of Brilliant, for which he paid $1,300. This was the top price of the sale and also the real bargain of the day. The average for the 40 of the matured animals was $675. Six colts averaged $260. The sale was the first annual of the Elmwood Stock Farm. Complete list of buyers and prices paid follows:

Mares.

Salenia 142782, to Max Venator, Iowa, $425.
Joan D'Arc 139799, to Colorado-Utah Coal Co., Mt. Harris, $475.
Mme. Dubarry 139798, to Governor Shoup, Colorado Springs, $800.
Marie Antoinette 139796, to Colorado-Utah Coal Co., $550.
Mme. Beauvais 139809, to Governor Shoup, $925.
Elmwood Charlotte 148549, to Geo. E. McCone, Julesburg, $210.
Elmwood Lady 148406, to Governor Shoup, $1,000.
Elmwood Arnoux 148404, to Colo. Agricultural College, Fort Collins, $400.
Elmwood Villette 148408, to Colo. Agricultural College, $625.
Elmwood Duchesse 148405, to Governor Shoup, $1,100.
Elmwood Princess De Conde 148407, to T. King, Boulder, $350.
Estelle 79785, to Geo. E. McCone, $525.
Rosette 45292, to Albert Knause, Niwot, $600.
Mattie 92905, to Otto Fulscher, Holyoke, $850.
La Salle (103423) 97590, to Geo. E. McCone, $420.
Livraison (101038) 101813, by Mr. Chris. Dowell, Longmont, $575.
Melba 124889, and colt, to Arthur Bien, Meade, $1,200.
Keota June 114095, to Governor Shoup, $725.
Gladys 69521, to Otto Fulscher, Holyoke, $425.
Jurande 101814 (88819), to Colorado-Utah Coal Co., $400.
Corsette 124206, to Colorado-Utah Coal Co., $475.
Ardelia 71260, to W. D. Lewis, Morrison, $675.
Electra 124202, to J. H. Thatcher, Pueblo, $550.
Clairette 71261, to Arthur Bien, $575.
Sweet Marie 106258, to Colorado-Utah Coal Co., $400.
Lillian 91041, to Colorado-Utah Coal Co., $900.
Keota Ligne 106187, to Colorado-Utah Coal Co., $775.
Kadole (90484) 85996, to L. Hillburg, Boulder, $550.
Pair—Millie 123106 and Minnie 123105, to D. E. Friesbe, McDonald, Kan., $900.
May Progressive 138668, to Billy Hansen, Longmont, $1,000.
Celine 102080, to W. D. Lewis, $725.
Pearl 122086, to Elmer Johnson, Fort Collins, $350.
Jalapa 91247 (88938), to Max Venator, $1,150.
Esther 81557, to Billy Hansen, $725.
Kalme 84718 (90654), to David Eislee, Longmont, $475
Elmwood Comtesse 157262, to Harry Asmussen, Lapville, $280.
Lacerie 91261 (100144), to L. D. Law, Fort Collins, $850.
Elmwood Princesse 157263, to J. H. Thatcher, $150.

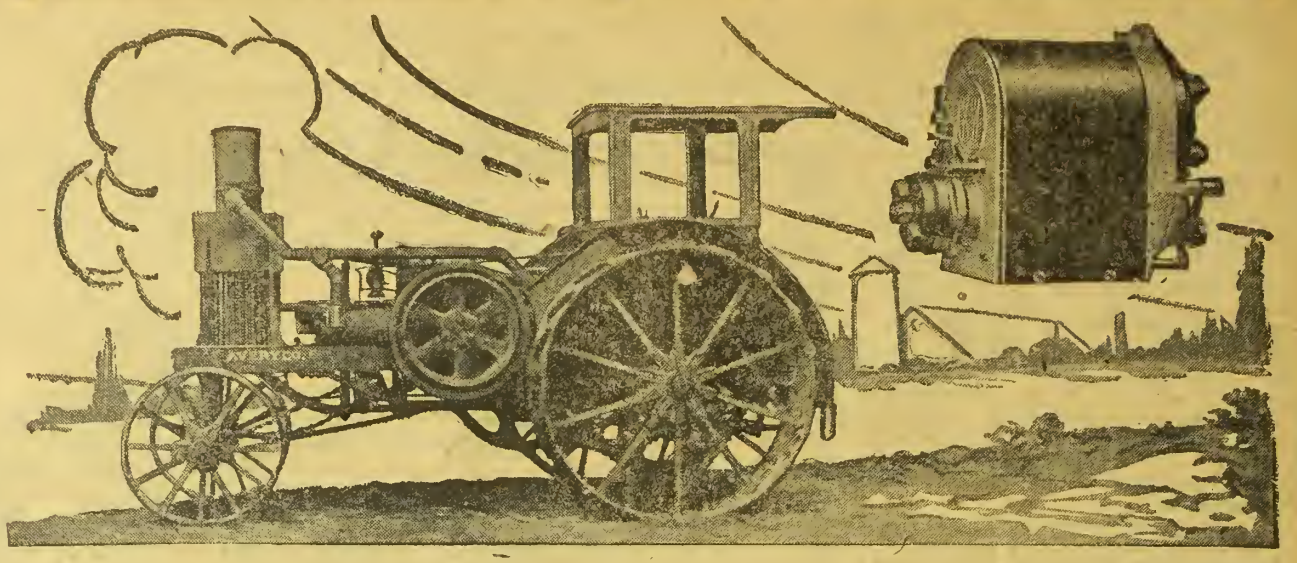
Stallions.

Diamond 143207, to J. H. Tingly, McDonald, Kan., $750.
Stanley 143111, to R. R. Shackley, Keenesburg, $500.
Glancer 143112, to Governor Shoup, $1,300.
Elmwood 148132, to Clark Jeffrey, Berthoud, $250.
Elmwood Marquise 157265, to Walter V. Smith, Denver, $180.
Dandy B 111550, to Jas. H. Andrews, Fort Collins, $800.
Elmwood Comte 157266, to J. H. Thatcher, $775.
Lot 51, Stallion, to Dr. Brown, Denver, $475.

A Credit to Colorado.

Western Farm Life:

I am sorry to have delayed sending my subscription, but we have all been sick and consequently things have been neglected. I would like to have the Simplicity Income Tax Service for the premium. I want to thank you for your courtesy and also wish to say that Western Farm Life is improving in every way. It is becoming more and more a credit to Colorado.—Mrs. E. J. Thomas, Brighton, Colo.



READ this leaf from the tractor experience of Frank Gerry, St. Charles, Minnesota, who bought the first Avery Tractor back in 1911.

There are thousands of tractor owners like Mr. Gerry who would be just as surprised and enthusiastic if they once tried a K-W Magneto—because it is specially designed for tractor service.

The first tractor manufacturers had much to contend with. The Avery Co. early appreciated a magneto specially built for tractor work—became one of our first customers and have used K-W Magnetos continuously.

If your tractor is not working right—try Mr. Gerry's plan—ask us to equip it with a K-W Magneto.

THE K-W IGNITION Co
2809 Chester Ave. CLEVELAND, OHIO. U.S.A.

The Story of Ignition On The First Avery

"I bought the first Avery Gas Tractor that they sent out in the fall of 1911 *and used it till the fall of* 1919, *when I sold it and bought a new* 25-50 *Avery.*

"My first tractor was equipped with an ..... Magneto when I got it and it did such unsatisfactory work that the company replaced it with a ....., which did very well, but was of such delicate construction that it failed to stand up to the rough usage a Magneto gets in tractor service and was replaced with a .....

***These outfits did what I supposed was good work** until I bought a small tractor for field work equipped with a K-W High Tension Magneto, and after operating it a few days, I got a K-W Model TK Magneto and put it on my Avery rig, and in all the time I ran it, it never failed me once starting or in running under any weather conditions.*

"The 25-50 *Avery I now have came equipped with a K-W Model HK and gives the very best service."*

TRADE K-W MARK **Magneto**

Fires Any Fuel—Gets Maximum Power Out of Every Drop

PIPE PIPE

500 ft. ¾ inch used Standard Black Pipe at 6c per foot.
500 ft. 1 inch used Standard Black Pipe at 9c per foot.
1,000 ft. 1¼ in. used Standard Black Pipe at 12c per foot.
800 ft. 1½ in. used Standard Black Pipe at 14c per foot.
8,600 ft. 2 inch used Standard Black Pipe at 20c per foot.
2,000 ft. 2½ inch used Standard Black Pipe at 30c per foot.
2,000 ft. 3 inch used Standard Black Pipe at 40c per foot.
500 ft. 4 inch used Standard Black Pipe at 55c per foot.
500 ft. 5 inch used Standard Black Pipe at 75c per foot.
500 ft. 2 inch New Standard Black Pipe at 25c per foot.
360 ft. 5 inch New Standard Black Pipe at $1.00 per foot.
All of above pipe in excellent condition, threaded and with couplings furnished.
1,250 ft. 9 inch 14-gauge new riveted pipe at 50c per foot.
250 ft. 12 inch 14-gauge new riveted pipe at $1.00 per foot.
2,500 ft. 10 inch 14-gauge used spiral riveted pipe at 60c to $1.00 per foot.
3,000 ft. 16 inch 16-gauge used riveted pipe at 50c per foot.
Prices as quoted F. O. B. Colorado Springs.
Pumps and Engines for pumping plants.
Write for prices.

Rebuilt Machinery Company
COLORADO SPRINGS, COLO.

Mica Axle Grease
saves wagon wear and makes hauling easier. The powdered mica, mixed with high grade grease, provides a perfectly lubricated surface on hub and spindle. Keeps wheels smooth-running and true.
Sold in 1 and 3 lb. tins, 10 and 25 lb. galvanized pails. At reliable dealers everywhere.

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In Large and Small Sizes.
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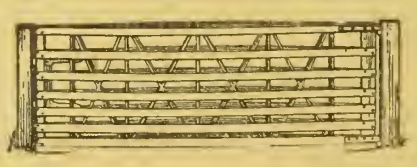

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Save money on your auto parts, repairs or accessories. We can supply most anything in the line of auto supplies. Mail orders given special attention. All we ask is a chance to serve you. A few automobile motors in good shape. Priced reasonable.
The Western Auto & Parts Co.
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Warnock—Jay & Allan Sale of Shorthorns.

That breeding counts was demonstrated at the sale in Denver, April 9, when the offerings of W. D. Warnock & Sons and Jay & Allan were disposed of. The demand was keen for the animals descending from Villager, Cumberland's Marshal, Model Type and White Hall Sultan. The top price of the sale was reached when Col. Kraschel purchased a Jay & Allan cow out of Cumberland's Marshall for $2,050.

Thos. Andrews of Cambridge, Neb., C. A. Saunders, Manilla, Iowa, L. B. Arnold of Long Island, Kan., were heavy out-of-state buyers. The presence of such men at a sale ringside and the fact that they buy is an indication of the quality of the animals sold.

D. Warnock & Sons need no introduction to Colorado breeders. Their offering in a sale is always an indication of good breeding. Mr. D. A. Jay of Jay & Allan, hails from Iowa, where he was interested in Shorthorn breeding in a prominent way. Colorado Shorthorn fanciers are proud to know that we are now to have his council in developing that popular breed in the state. He has established a herd in Northern Colorado. Mr. Allan is well known to Colorado breeders as a breeder of high class Shorthorns in Boulder county.

While prices are still somewhat lower in Colorado Shorthorn sales than in some other states, the future is bound to bring better returns with such excellent blood lines as were offered during this sale.

The average on females in the sale was $523. Only one bull was offered. Following is a complete list of sales:

Jay & Allan consignments were sold as follows:

Annabell 110975, to E. C. Harris, $195.
Golden Girl 10th 467973, to Col. Kraschel, $2,050.
Missie Sultana 4th 676762, to L. E. Crews, Longmont, $1,150.
Anoka Venus 193223, to W. A. Dickens, Longmont, $825.
Pride's Venus 603672, to J. K. Holmes, Center, $525.
Parkdale Victoria 5th 167095, to L. B. Arnold, Long Island, Kan., $900.
Imp. Fairy Flower 649185, to L. B. Arnold, $800.
Countess Victoria 7th 96660, to L. B. Arnold, $750.
Fancy 636882, to W. A. Dickens, $1100.
Lady Strawberry 11th, to Thos. Andrews, Cambridge, Neb., $230.
Oakland Queen 858360, to Frank Gettel, $260.
Cumberland Queen 2d 858359, to Thos. Andrews, $290.
Cumberland's Blossom 858358, to W. A. Dickens, $280.
Lodi Secret 3d 525113, to J. K. Holmes, $350.
Dainty Hilton 4th 525112, to W. A. Dickens, $300.
Choice Queen 109841, to J. H. Michel, Bennett, $250.
Meadow Blossom 161892, to L. B. Arnold, $225.
Scottish Orange 840494, to Glen Martin, Boulder, $275.
Christiana 216433, to Roy Arnold, Lafayette, $235.
Silverleaf Zilla 223246, to E. C. Harris, $300.
Silverleaf Birdie 216436 and calf, to J. M. Michel, $260.
Silverleaf Viola 483377, to Thos. Andrews, $190.
Royal Lady 2d 524428, to A. F. Woodmansee, Strasburg, $190.
Lady Marion 756076, to R. I. Shakley, Keenesburg, $200.
Anna Junior 820526, to R. I. Shakley, $220.
Red Abigail 819722, to Lowell Cattle Co., $185.
Queen 797416, to Bonvue Farms Co., $200.
Ruth 536335, to Glen Martin, $375.
Denver Goldie 797847, to Bonvue Farms Co., $145.
Dorine 797848, to Bonvue Farms Co., $145.

Warnock consignments were sold as follows:

Hillcrest Village 507754, to J. K. Holmes, Center, $1,550.
Imp. Nonpareil 50th 711980, to Thos. Andrews, Cambridge, Neb., $1,150.
Model Roan Lady 690460, to G. W. Hixon & Son, Simla, $1,500.
Maid Myra, to F. A. Stubbs, Denver, $1,475.
Model Beauty 2d 859650, to Chas. Saunders, Manilla, Iowa, $825.
Model Roan Missie 771365, to J. K. Holmes, $775.
Missie Model 690458, to J. Brunelli & Son, Walsenburg, $575.
Lady Gloster 2d 575467, to C. A. Hauf, Glendo, Wyo., $425.
Missie 188th 509310 and calf, to Howard Irwin, Loveland, $1,000.
Sister Pearl 228715, to I. J. Noe & Son, Greenland, $500.
Beauty Lady 2d 164526 and calf, to W. A. Dickens, $525.
May Bloom 174367 and calf, to I. J. Noe & Son, $575.
Roan Syme 2d 158244 and calf, to E. C. Harris, Julesburg, $525.
Overlook's Violet 507365, to Lowell Cattle Co., $500.
Princess Evangeline 468801, to J. Brunelli & Sons, $380.
White Dove 468820, to Frank Gettel, Goodland, Kan., $320.
Scottish Rosebud 468810, to Frank Gettel, $300.
Victoria Lady 872628, to A. F. Woodmansee, Strasburg, $190.
Sittyton Rose 872625, to Frank Gettel, $330.
Queen Selection 468802, to L. B. Arnold, $475.
Scottish Lady 2d 104434, to Glen Martin, $285.
Daisy Goods 555997, to Col. Buchanan, $350.
Royal Evangeline 4th 872617, to Thos. Andrews, $290.
Selection Lady 2d 872621, to Col. Buchanan, $275.
Royal Queen 872620, to S .B. Samuels, Denver, $275.

Black and White Supreme in the Holly District.

(Continued from Page 3.)

either sex, get of one cow—McKay Bros., first; Model Dairy Farm, second.

Group of four head grade Holsteins, either sex, get of one sire—N. Jensen, first; Boetta Bros., second.

Grade Holstein herd, five head, with purebred bull, cow 3 years old or over, heifer 2 years, heifer 1 year, and heifer calf—Boetta Bros., first; N. Jensen, second.

Senior Champion Bull—McKay Bros.

Junior Champion Bull—American Beet Sugar Co.

Senior Champion Cow—Model Dairy Farm.

Junior Champion Cow—Model Dairy Farm.

Condition Cup—To the exhibitor entering three head or more dairy animals, in the best condition and of the best type which does not require trimming or shearing for exhibition, cup to become property of exhibitor winning it three times—Model Dairy Farm.

Horse Show Awards.

Best team draft horses, 4 years or over—Carl Maurer, first; American Beet Sugar Co., second.

Best all-purpose team, any age—T. Boetta, first; W. I. Jagers, second.

Best Brood Mare—Carl Maurer, first; L. W. Smith, second.

Best Horse Colt, either sex, over 2 and under 3 years—L. W. Smith, first; C. S. Bloom, second.

Best Light Harness Horse—W. H. Shively.

Best Saddle Horse—Arkansas Valley S. B. & I. L. Co., first and second.

Best Cow Pony—H. Lacy, first; C. Lacy, second.

Best Boy's Pony—Ed Brown, first; R. Klein, second.

Best Team Mules, 3 years or over—American Beet Sugar Co., first; Arkansas Valley S. B. & I. L. Co., second.

Best Mule, over 2 and under 3 years—J. Howell.

Best Mule, over 1 and under 2 years—J. H. Ammonds, first; J. Howell, second.

Best Purebred Stallion, 3 years or over—T. Hickman, first; H. Klein, second.

Best Standard Bred Stallion, any age—W. H. Shively, first.

Best Stud Colt, over 1 and under 3 years—C. Maurer, first; C. S. Bloom, second.

Best Jack, 3 years and over—H. Klein, first; N. M. Herbig, second.

Best Jennet, any age—J. Hochstedler, first; J. Bashor, second.

"Be sure you are right, then hoe ahead," is the new version of the adage as applied to gardening.

More on Morning Glory.

Farmers Service Bureau:

I would like to advise H. O. B. of Eagle county in eradicating wild morning glory, he is up against a hard proposition in trying to grub them as he is generally busy at something else when the vine is getting a good start. I had a similar experience with the pest in orchard, and not until I sowed alfalfa and turned the hogs on it did I get rid of it. I think if he would do likewise in two or three years he will have a clean rich patch again.—W. J. Nagel, Meeker, Colo.

We Stand Corrected.

In your issue of April 1, a Utah correspondent asks for an explanation of the terms—purebred and thoroughbred; your answer as to thoroughbred is positively wrong, as it is never applied to the Standard bred trotter; but to the purebred running horse only. Please correct yourself as your paper is usually right on farming and stock matters.

(Signed) WM. COWDERY,
Denver, Colo.

A whole gallon of watch oil will not lubricate an aeroplane motor.

ONE DROP of AEROPLANE OIL *will* STOP A WATCH

EVERY machine, every motor car, is different—even two cars of the same make, but different lengths of service, differ in their lubricating requirements.

Your Motor is Like No Other

Sinclair Dealers will apply the Law of Lubrication to your car and prescribe the correct Sinclair Oil for scientific lubrication.

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Shorthorn Association Sale.

The sale of Shorthorns held under the auspices of the Western Shorthorn Breeders' association afforded the Shorthorn breeders an opportunity to dispose of some surplus stock. The prices received were not high, but all things considered quite satisfactory. The usual bargains in blood lines were to be had. Some animals offered were very young and consequently sold low. All of the consignments, with one or two exceptions, sold to Colorado breeders. The top price of the sale was received for Spruce Hill Missie, owned by C. A. Hauf of Glendo, Wyo., and sold to J. Y. Lucas of Denver for $900. The average on bulls was $155, as compared with $210 on females. A complete list of the sales follows:

Cows.

Divide Lilac 820153, consigned by Allen Cattle Co., Colorado Springs, to G. W. Hixson & Son, Simla, $335.

Royal Lass 152372, by Allen Cattle Co., to Bonvue Farms Co., Denver, $300.

Lady Mae 137078, by Cornforth Live Stock Co., Elbert, to Mook Bros., Denver, $130.

Lassie 675676 and calf, by Cornforth Live Stock Co., to J. Y. Lucas, Denver, $100.

Valentine Lassie 716620, by Cornforth Live Stock Co., to Jack Orr, Colorado Springs, $110.

Rose 2d 675677 and calf, by Cornforth Live Stock Co., to Lowell Cattle Co., Denver, $110.

Mary 8th 118275 and calf, by W. A. Dickens, Longmont, to E. C. Harris, Julesburg, $210.

Bettie 642734 and calf, by W. A. Dickens, to Glen Martin, Boulder, $150.

Iris 653425, by W. A. Dickens, to E. C. Harris, $140.

Sunnyside Splendor 611000, by Gleason & Blazer, Kiowa, to Bonvue Farms Co., $325.

Queen Alma 148342 and calf, by C. A. Hauf, Glendo, Wyo., to Triangle Ranch, Denver, $225.

Spruce Hill Missie 707630 and calf, by C. A. Hauf to J. Y. Lucas, $900.

Eva 572093, by C. A. Hauf to Wm. Pritchard, Telluride, $200.

Diamond Duchess 112056, by Alger C. Peterson, Elbert, to R. F. Holman, Deertrail, $150.

Cherry 591914, by Alger C. Peterson, Elbert, to R. F. Holman, $130.

Lucile 162890 and calf, by Glen E. Martin, Boulder, to E. C. Harris, $260.

Alice K 2d 795380, by J. E. Rothrock, Lafayette, to Lowell Cattle Co., $100.

Queen Clipper 196417, by Stewart & Shaws, Wiggins, to D. Warnock & Son, Loveland, $230.

Clipper Queen 2d 663561, by Stewart & Shaws, to Grant Ball, Wray, $180.

Lavender Belle 3d 739058, by Stewart & Shaws, to Grant Ball, $170.

Golden Lassie 706418, by Stewart & Shaws, to Julius Peterson, Elbert, $175.

Scottish Beauty 2d 226566, by D. Warnock & Sons, to J. L. Wisdom, Colby, Kan., $225.

Selection's Pride 872622, by D. Warnock & Sons, to W. A. Dickens, $200.

Lady May 770344, by Chas. Plageman, Eckley, to Julius Peterson, $190.

Marietta 16th 770346, by Chas. Plageman, to W. A. Dickens, $150.

Victoria's Belle 821606, by Chas. Plageman, to I. J. Noe & Son, Greenland, $285.

Fairy Queen 821603, by Chas. Plageman, to A. Beeler, Longmont, $120.

Nebraska Beauty 821605, by Chas. Plageman, to A. Beeler, $130.

Emily 18th 821602, by Chas. Plageman, to I. J. Noe & Son, $250.

Lancaster's Gratitude 821604, by Chas. Plageman to I. J. Noe & Son, $210.

Clara 18th 821601, by Chas. Plageman, to W. A. Dickens, $240.

Moonlight 659159 and calf, by Cornforth Live Stock Co., to Triangle Ranch, $110.

Bulls.

Divide Standard 867725, by Allen Cattle Co., Colorado Springs, to Julius Peterson, $225.

Divide Archer 848144, by Allen Cattle Co., to F. A. Stubbs, Denver, $550.

Heigh 695040, by Samuel Ball, Wray, to Hall Bros., Fairplay, $125.

Thomas 663086, by Samuel Ball, to E. R. Mourning, Kiowa, $120.

Haven's Model 604992, by Bonvue Farms Co., to Lowell Cattle Co., $130.

Forest Glen Boy 729042, by Cornforth Live Stock Co. to Lowell Cattle Co., $185.

Diamond Lad 729041, by Cornfrth Live Stock Co., to Lowell Cattle Co., $150.

Happy Knight 729044, by Cornforth Live Stock Co., to Lowell Cattle Co., $135.

Lavender Lad 729045, by Cornforth Live Stock Co., to Lowell Cattle Co., $145.

Forest Glen Cedar 846778, by Cornforth Live Stock Co., to Wm. Smith, Aurora, $275.

Forest Glen Sultan 846782, by Cornforth Live Stock Co., to Lowell Cattle Co., $125.

Forest Glen Knight 846780, by Cornforth Live Stock Co., to Lowell Cattle Co., $130.

Type's King 714045, by W. A. Dickens, to D. S. Kilpatrick, Kiowa, $330.

Duke's Lad 847643, by Gleason & Blazer, to Lowell Cattle Co., $140.

Sunnyside Excelsior 2d 838680, by Gleason & Blazer, to J. Y. Lucas, $90.

Billy Goods, by Gleason & Blazer, to Lowell Cattle Co., $85.

Druid, by Everett Harmon, Boulder, to Geo. Murray, Denver, $40.

Vice Admiral, by Everett Harmon, to Lowell Cattle Co., $125.

Knight Errant, by Everett Harmon, to Hall Bros., $60.

Admiral 621745, by H. F. Harmon, to F. Gettle, Goodland, Kan., $250.

Admiral Lad, by H. F. Harmon, Boulder, to Sam Samuels, Denver, $50.

Cherry's Cumberland 806310, by C. A. Hauf, to A. G. Brum, Boulder, $250.

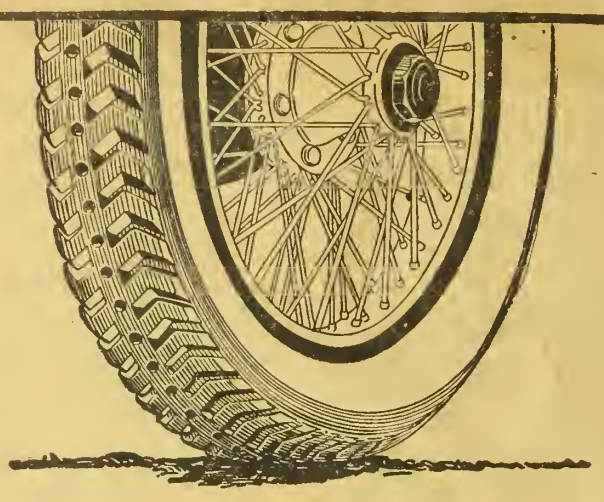
Ringleader of Towie 862721, by C. A. Hauf, to J. Y. Lucas, $275.

Gloster Ringleader 862719, by C. A. Hauf, to J. Y. Lucas, $160.

Roan Baron 823634, by J. Paul Jones, Elbert, to J. A. Osner, Denver, $180.

Elbert Hedgewood 49036, by J. Paul Jones, Elbert, to Lowell Cattle Co., $155.

Comanthe's Best 843102, by Alger C. Peterson, Elbert, to A. R. Mourning, $125.



15,000 miles
per tire in constant tests

Men are everywhere telling remarkable tales about mileage on Miller Tires.

Some cite up to 25,000 miles. Many certified tales, even on trucks, exceed 22,000 miles.

But these are not average conditions. They are usually oversize tires, well cared for, under-loaded.

What to expect

Millers will increase your mileage. Records taken in Boston, on hundreds of cars, show an increase of 50 per cent to 75 per cent.

We have in late years nearly doubled our mileage by perfections in the Miller Tire.

In our factory, eight tires are run on geared-up machines 650 miles each per day. They are run under rear-tire conditions. And the average mileage on Miller Cords is 15,000 miles.

Other leading makes are constantly compared with them, but the Miller excels all.

New standards

Miller Tires will completely change your standards.

Three tires

Ray C. Carpenter tested three Miller Tires on a 22-passenger bus, carrying 3 tons per trip. The first ran 23,700 miles, the second 17,000 miles, and the third 22,000 miles without a blowout.

They will give you new ideas on the mileage to expect.

They will bring you treads which outwear the tires.

They will bring you uniformity. Every Miller Tire is signed by maker and inspector. Both are penalized if a tire falls down.

Don't judge tires by old criterions. See what Miller Tires will do.

Make this test

Tests are bringing men to Millers. Ten times as many are now used as in 1914.

Big tire users, who make million-mile comparisons, are adopting Millers everywhere.

Put one on your car. Watch the mileage. Compare it with the tire that's opposite. Learn what modern tires can do.

If you buy a new car, insist on Miller Tires. Twenty makers now supply them without extra cost.

THE MILLER RUBBER COMPANY
Akron, Ohio

Makers of Miller Red and Gray Inner Tubes —the Team-Mates of Uniform Tires—Also Miller Surgeons Grade Rubber Goods, for homes as well as hospitals.

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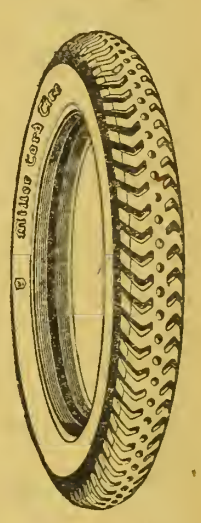
Cords Geared-to-the-Road *Reg. U. S. Pat. Office* **Fabrics**

Now the Tire Sensation

Tread Patented

Center tread smooth, with suction cups to firmly grasp wet asphalt. *Geared-to-the-Road* side treads mesh like cogs in dirt.



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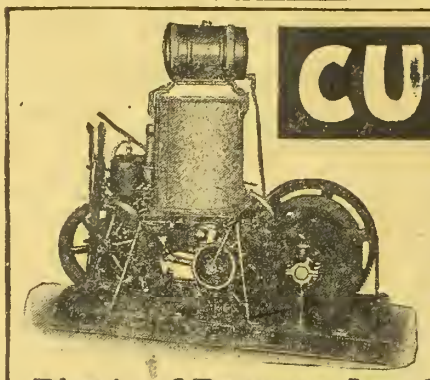


4 H. P. Hoisting Outfit

Just the hoist for handling the hay fork, lifting ensilage out of pit silo, pulling up hog or steer when butchering, for excavating or building, or for handling ice. Will put 30% more hay on the stack than can be done with team and driver. Does away with the tugging and strain of lifting off hay rack, beet rack and wagon bed.

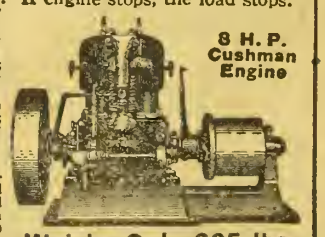
For contractors, prospectors and silo builders, it saves the wages of two men or more per day and is absolutely safe. When mounted on trucks, hoist can be easily drawn around silo.

Plenty of Power—Any Speed—Absolutely Safe

Easy to hold load by applying brake lever. No need to use the brake on return, for automatic governor clutch prevents over-speeding. Load cannot drop. If engine stops, the load stops.

Weigbt of engine and hoist, assembled complete on steel skids, only 580 lbs. Trucks can be supplied if desired.

Guy Redabaugh, Johnstown, Col., writes: "I use a Cushman Hoist to put alfalfa into my barn. I use elings on my wagons, two to each wagon, so the load runs from 800 to 1500 lbs. I have hoist and engine in corner of the barn. The hoist and engine work perfectly on all loads and I am saving the wages of a man and team with it. Besides, I can handle the hay faster and safer than with a team. I use my hoist to lift on and off the heavy hay and beet racks used here. It is a practical, economical machine that will have its place on all farms."



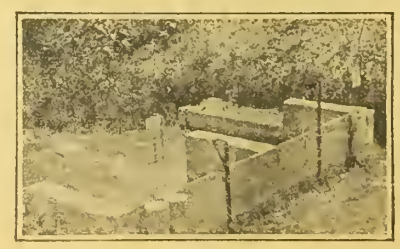
8 H. P. Cushman Engine

Cushman Engines—4 to 20 H. P.

Cushman Light-Weight All-Purpose Engines weigh only about one-third as much as ordinary engines and run even more steadily. Equipped with Throttling Governor, Carburetor, Friction Clutch Pulley and Water Circulating Pump without extra charge. Ask for Circular on Hoists or for Engine Catalog, whichever you wish. (331)

CUSHMAN MOTOR WORKS, 894 N. 21st St., LINCOLN, NEB.

Weighs Only 325 lbs.



Have you had trouble or misunderstandings over the division of water for irrigation? Do you know if you are getting all the water to which you are entitled? The Burnham measuring device is the answer.

The R. Hardesty Mfg. Co.

1837 Market St. Denver, Colo.

We manufacture a complete line of Irrigation Supplies, such as Flumes, Pipe, Gates, and other accessories. Write for catalogues and information.

Factory

price direct to you
THIS $12 OFFICER SHOE

Hand sewed, First Grade. The factory price -- direct to you at only... **$6.89**

The retail price of this shoe is 12.00. It is made of the best waterproof mahogany calf leather. Guaranteed to give the best wear. If these shoes are not just as we say, send them back. You don't lose a cent. — If you are sending money order or check, do not include postage. Pay only $6.89 for shoes. We pay postage. State size.

These shoes are built to be good for work and dress at the same time.

U. S. NATIONAL ARMY SHOE CO.,
Dept. 867, Westfield, Mass.

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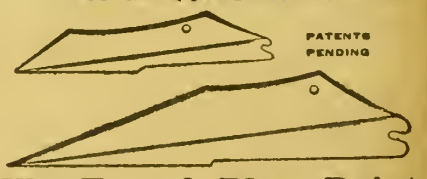
Saves one-half Repair Bills and Is Better



The French Plow Point

STRONG, RIGID AND DURABLE

Better than welded point in all soils and stony ground. Made of best steel. Fits all plows, right or left: Also HEAVY ROAD PLOW POINT. Double the service at one half the cost. No delays running to shop. Any one can apply them. Get ready, Mr. Farmer and Blacksmith—this is your friend. Dont delay. Right now is the time. Circulars and testimonials upon request.

MORGAN C. FRENCH, Craig, Colo.

Cherry Bud 857779, by Alger C. Peterson, to E. C. Harris, $100.
Reliance 713025, to C. A. Melburn, Elbert, to R. F. Holman, $180.
White Gloster 731807, by C. A. Melburn to Hall Bros., $160.
B. C. King 2d, by J. E. Rothrock, to J. D. Buyers, $65.
B. C. Wano 2d, by J. E. Rothrock, to G. A. Slater, Byers, $85.
B. C. Sultan, by J. E. Rothrock, to Lowell Cattle Co., $90.
B. C. Prince, by J. E. Rothrock, to Sam Samuels, $55.
B. C. Ladd, by J. E. Rothrock, to Sam Samuels, $55.
Royal Avondale 706416, by Stewart & Shaws, to L. D. Sweet, Carbondale, $300.
Red Rover 823059, by Wm. C. Weiss, Elizabeth, to L. A. Miller, Elizabeth, $170.
Orange Chief 682387, by Chas. Plageman, to C. Lerchen, Littleton, $115.
Gloster's Invincible 821594, by Chas. Plageman, to Lowell Cattle Co., $175.
Golden Gloster 821596, by Chas. Plageman, to G. F. Murray, Denver, $125.
Eckley Star 821593, by Chas. Plageman, to E. C. Harris, $150.
Augusta's Model 821591, by Chas. Plageman, to A. G. Brum; $110.
Uppermill's Chief 821599, by Chas. Plageman, to E. C. Harris, $100.
Red Dale 841303, by Lewis Kirk, Elbert, to L. A. Miller, $145.
Hampton Sultan 841301, by Lewis Kirk, to J. D. Buyer, Fairplay, $130.
Victor Dale 841305, by Lewis Kirk, to Lowell Cattle Co., $115.

Hereford Association Sale.

The sale of registered Hereford cattle conducted at the Stockyards stadium, Denver, April 7, was but fairly attended. The interest was not so keen as it was in January.

The offerings were of good quality. However, the animals were in rough condition, just out of winter quarters. The man who bought was able to see absolutely what he was buying. The bulls offered were in excellent condition to put right out for service. Several bargains in blood lines were obtained.

Among the heavy buyers were Anton Anderson, Eaton, Colo.; Lowell Pure-Bred Cattle Company, Denver; John B. Outcalt, stockman of Gunnison, and S. P. Sloss, of Sloss, Colo. The top price of the sale was paid for Beau 29th, a son of Beau Blanchard, and was $635. This bull goes to F. C. Webb of Denver, who has a farm near Lafayette. The highest priced cow was Georgiana Mischief, who sold for $510 to A. J. Campbell of Greeley. The average on 39 bulls was $240.64, and on 21 cows $282.38. The complete report of sales follows:

Cows.

Tulip 797615, consigned by Geo. W. Baker, Littleton, to S. L. W. Ranch Co., Kersey, $310.
Columbia Fairfax 414462, consigned by John E. Painter & Sons, Roggen, to O. E. Green, Fort Logan, $475.
Genuine 682828, by J. H. Dickens, Walden, to D. B. Monroe, Hebron, $250.
Grace 702503, by J. H. Dickens, to D. B. Monroe, $180.
Guild 682831, by J. H. Dickens, to D. B. Monroe, $200.
Georgiana Mischief 705979, by A. J. Campion, Denver, to A. J. Campbell, Greeley, $510.
Blossom Sunbeam 691439, by A. J. Campion, to A. J. Campbell, $400.
Spring Maid 2d 792451, by T. F. De Witt, Denver, to O. E. Green, $305.
Virginia Rex 585596, by C. H. Gilbertson, Fort Morgan, to A. J. Bromfield, Bailey, $300.
Dainty 2d 585532, by C. H. Gilbertson, to S. P. Sloss, Sloss, $195.
Domestic 3d 585535, by C. H. Gilbertson, to M. A. Nicholson, Steamboat Springs, $300.
Rosemary 2d 563523, by C. H. Gilbertson, to M. A. Nicholson, $300.
Lakeside Lassie 2d 563243, by C. H. Gilbertson, to S. P. Sloss, $195.
Mabelle 4th 585555, by C. H Gilbertson, to J. D. Craighead, La Junta, $370.
Helen Gould 2d 585549, by C. H. Gilbertson, to S. P. Sloss, $225.
Winne 2d 585598, by C. H. Gilbertson, to S. P. Sloss, $330.
Rexy 3d 585590, by C. H. Gilbertson, to S. P. Sloss, $270.
Brilliantine 585529, by C. H. Gilbertson, to S. P. Sloss, $270.
Evelyn Rex 508080, by C. H. Gilbertson, to S. P. Sloss, $270.
Octavia 362033, by C. H. Gilbertson, to S. P. Sloss, $255.
Charity 363449, by C. H. Gilbertson, to S. H. Clammer, Fort Collins, $275.
Serena 362040, by C. H. Gilbertson, to S. P. Sloss, $245.
Selina 362039, by C. H. Gilbertson, to S. P. Sloss, $180.
Mollie 2d 563246, by C. H. Gilbertson, to F. C. Webb, Lafayette, $205.
Irene 2d 563242, by C. H. Gilbertson, to Dodd & Whitehead, Stockyards Station, $150.

Bulls.

Bonnie Donald 699594, by George W. Baker, Littleton, to A. L. Weston, Littleton, $350.
Bonnie Major 839729, by George W. Baker, to Anton Anderson, Eaton, $425.
Denver Renown 724042, by H. Bert Cave, Littleton, to Anton Anderson, $180.
Beau 29th 792254, by J. D. Canary, Denver, to F. C. Webb, $635.
Elect Aster 706066, to T. F. Dolan & Son, Brighton, to J. O. D. Ranch, Aroya, $450.
Beau Nestar 705977, by A. J. Campion, to A. J. Campbell, Greeley, $260.
Finance 6th 800554, by T. F. DeWitt, Denver, to Lowell Cattle Co., Denver, $220.
Prince Imperial 21st 864010, by T. F. De Witt, to Geo. Camp, Livermore, $480.
Prince Imperial 22d 864011, by T. F. De Witt, to Lowell Cattle Co., $280.
Pioneer 743783, by T. F. DeWitt, to Anton Anderson, $210.
Finance 735096, to T. F. De Witt, to Anton Anderson, $400.
Prince Imperial 10th 792444, by T. F. DeWitt to W. A. McKenzie, Canon City, $360.
Beau Crusader 769879, by Flowerland Cattle Co., Loretto, to Geo. Dodd, Stockyards Station, $200.
Colorado 769880, by Flowerland Cattle Co., to Chas. Larchen, Littleton, $135.
Crusaders Kid 769881, by Flowerland Cattle Co. to J. B. Outcalt, $175.
King Fairfax 769884, by Flowerland Cattle Co. to Lowell Cattle Co., $135.
Paladin Fairfax 769889, by Flowerland Cattle Co., to Geo. Dodd, $240.
Yankee Boy 770412, by Flowerland Cattle Co., to Anton Anderson, $240.
Rose Bud 3d 791149, by Fulscher & Kepler, Holyoke, to Lowell Cattle Co., $165.
Rex Aster 823174, by Fulscher & Kepler, to John B. Outcalt, Gunnison, $135.
Allison Aster 810571, by Fulscher & Kepler, to F. J. Paul, Yoder, $150.
Luther Aster 802417, by Fulscher & Kepler, to J. B. Outcalt, $130.
Ideal Aster 2d 802431, by Fulscher & Kepler, to Lowell Cattle Co., $175.
Leon Aster 802434, by Fulscher & Kepler, to J. B. Outcalt, $125.
Beau Aster 61st 802413, by Fulscher & Kepler, to Chas. Larchen, $140.
Real Aster 802438, by Fulscher & Kepler, to Lowell Cattle Co., $190.
Victor Aster 802442, by Fulscher & Kepler, to J. B. Outcalt, $170.
Donald Rex 7th 585539, by C. H. Gilbertson, to Anton Anderson, $310.
Beau Contractor 738736, by S. L. W. Ranch Co., Kersey, to S. H. Clammer, $150.
Greeley Mischief 10th 791219, by S. L. W. Ranch Co. to J. B. Outcalt, $220.
Greeley Mischief 12th 791221, by S. L. W. Ranch Co., to Anton Anderson, $230.
Greeley Mischief 13th 791222, by S. L. W. Ranch Co., to Geo. Camp, $195.
Greeley Mischief 14th 791223, by S. L. W. Ranch Co., to Anton Anderson, $180.
J. K. Mischief 791228, by S. L. W. Ranch Co., to Emma Schneider, Denver, $235.
Hardy Rupert 785335, by S. L. W. Ranch Co., to Lowell Cattle Co., $110.
Carlos 101st 534012, to Lowell Cattle Co., $230.
Lot 119, to L. P. Lamont, Larkspur, $375.
Lot 117, to J. B. Outcalt, $200.

Preventing Fires on the Farm.

Millions of dollars worth of agricultural wealth is destroyed annually by fire in the United States. The United States Department of Agriculture, in emphasizing the fact that all fires, except those of incendiary origin, are preventable, summarizes the points which the farmer must keep in mind, as follows:

All matches are a possible source of danger.

Smoking or striking matches in barns or stables should be prohibited.

Pouring gasoline or kerosene on a smouldering fire endangers life and property.

Open-flame lights should not be used in a garage or other building containing a gasoline engine or stored gasoline.

Never test for gas leaks with a burning match.

Every open fire should be watched until it is out.

Fire attracts children; children cause many fires.

All oiled rags should be kept in a metal container with air-tight metal cover.

The floor beneath stoves should have metal covering.

The fire hazard should be considered in locating new buildings.

Woodwork should not come in contace with any chimneys.

Remember that responsibility for fires rests on individuals.

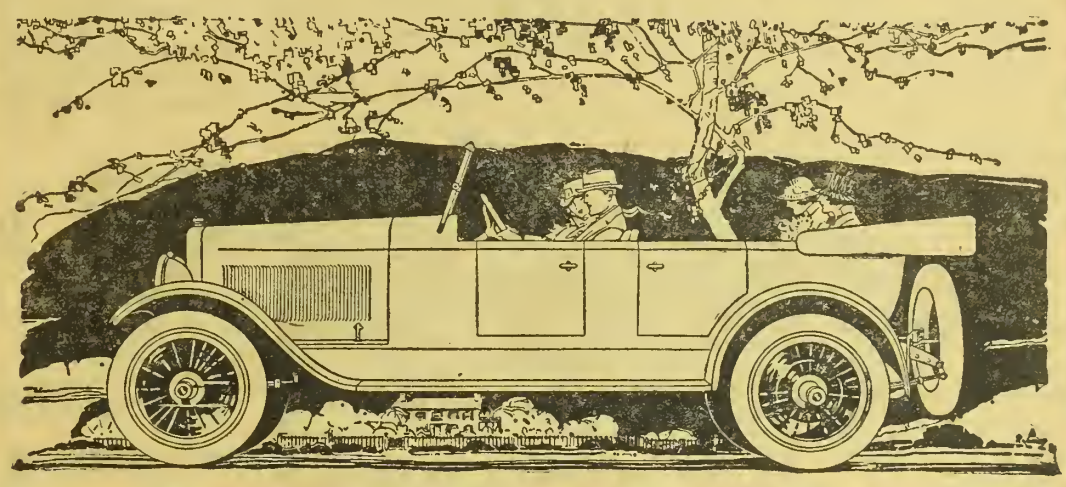
Farmers' Bulletin, "Fire Protection and Fire Fighting on the Farm," just reissued by the United States Department of Agriculture, will be sent to anyone addressing a request to the department at Washington, D. C.

Practical Sheep Husbandry.

A new book on sheep raising has been written by Wm. A. Burns. The title is "Practical Sheep Husbandry." It is a neatly bound volume of 84 pages and contains some good practical information on the care of sheep. It is brief and to the point. The price for the book is $1. It may be had from Wm. A. Burns, Exchange building, Union Stock Yards, Chicago.

CHANDLER SIX

Famous For Its Marvelous Motor



Everybody Likes The Chandler Dispatch

THE popularity of the Chandler Dispatch, which has grown by leaps and bounds and reaches to every corner of the world, is based not only on the grace of its trim design and its beautiful Rainbow Blue finish, but is due quite as much to the standard Chandler chassis upon which it is mounted.

The Dispatch attracts young folks and older ones alike. It is a great favorite with young women. All love to drive it, and the charm of its beauty gives them additional satisfaction in its ownership.

The Chandler Dispatch seats four persons with utmost comfort. The driver's position is restful. The cushions are deep, well tilted and trimmed in the best of genuine hand buffed leather.

With its wonderful flexibility of power, its ease of driving and real comfort, characteristic of all Chandler models, everybody likes the Dispatch.

There is a Chandler dealer near you.
See him or write for catalog.

SIX SPLENDID BODY TYPES

Seven-Passenger Touring Car, $1995 *Four-Passenger Roadster, $1995*
Four-Passenger Dispatch Car, $2075
Seven-Passenger Sedan, $2995 *Four-Passenger Coupe $2895* *Limousine, $3495*
(All Prices f. o. b. Cleveland, Ohio)

CHANDLER MOTOR CAR COMPANY
CLEVELAND, OHIO

Egg Yield Increased by Lights

COLORADO WOMAN MAKES SUCCESSFUL TEST

DOES it pay to give hens artificial light in the effort to increase egg production? Ever since Prof. James E. Rice, the noted authority at Cornell University, announced the favorable results of his experiments, poultry raisers have been eager for more information. Many are trying the plan of lengthening "daylight" by artificial lighting of the hen house, and just a few have been at it for several years.

Among those early in the field with practical tests is Mrs. H. W. Bowman of Trinidad, Colo., who has charge of the poultry on Bowman's Stock and Dairy Farm, at Pinon Heights. This farm is an institution, for Mr. and Mrs. Bowman have brought it to a point where their work with the cows and hens has attracted wide attention. They are commercial producers of milk and eggs, and it is from that standpoint that Mrs. Bowman has given electric lights a test in the hen house. She was at it as early as the spring of 1917, when the writer visited the farm.

At that time Mrs. Bowman feared she would be laughed at if poultry raisers herd of the attempt to force egg production by lengthening the working day of the hen. At her request nothing was said about the experiment. Now that it has proved itself she is willing to let others know the results, which are reported in the following statement from Mr. Bowman:

"We got an average of 52 eggs per day from 100 hens during the months of November, December, January and February. As these are the usual no-egg months, we believe it pays. These hens and pullets were fed skim milk, wheat, corn and sprouted oats and meat scraps. They get plenty of water warmed each morning and they have warm, well ventilated houses and plenty of careful attention. The lights are turned on about dusk and turned off about 8:30 p. m.; then turned on again at 2:30 a. m. by one of our milkers. We find that the hens that lay all winter do just as well in summer as those that don't lay in winter and do lay in summer. A rather unusual habit hens have is that all hens under light are now commencing to moult. Our conclusion is that we get all the eggs the hen will lay in 18 months from the time they begin to lay. The hen is then fat and ready to market at a time when we can secure a good price.

"We find that last February and March (1919) pullets have laid continuously since August and September, 1918, and are now ready for market at 40 cents per pound, an average of $2.65 each. We now have about 400 young chicks past the danger point. Some almost ready for spring market, hatched from heaviest laying pens.

"Seven hens taken from lighted pens and put in unlighted pens laid 6 eggs first day, 5 the second day, then dropped to an average of 1½ eggs per day in January. Feed and other conditions almost the same, except no light. Fifteen hens taken from an unlighted pen that were laying about 10 eggs per day began at the end of seven days to lay 12 eggs per day to the 15 hens. We moved three 15 lots of hens from unlighted pens during December and early January and they did so well that we hesitate to state the figures—an average of 33 eggs per day from 45 hens! So we are strong for electric lights in the hen houses.

"We have a laying strain of hens bought from reliable poultrymen at good prices and run the following in separate pens: Buff-white and barred Plymouth Rocks, white Leghorns, and have just put in a very fancy pen of light Brahmas from birds whose records are big. We have Fishel's white rocks, Colorado raised, and they are a very satisfactory pen bird. We tell our customers, and they believe us, that our eggs and chicks are milk-fed and they have clean habits and houses. Penned chickens don't get a chance to be scavengers. We also show our customers, at every opportunity, that our hens do get skim milk and plenty of it, and so do the chicks. The hens pay us 30 cents per gallon for it.

"The success of the whole hen business here is due to Mrs. Bowman loving the hens and they seem to know it, because they sing from 2:30 a. m. until 8:30 p. m. each day. We use one 150 candlepower nitrogen lamp for each 100 hens and keep it clean, because the hens roon raise a dust. Each morning the hens that sit on the roost after the light goes on are for sale at once."

Fruit Crop Prospects.

ALFRED M. WILSON.

Clifton, Colo., April 24.—The following is, I think, a fair estimate of the fruit situation in the Grand Valley to date: During the past few mornings the temperature has fallen very low. This morning there was over the entire valley a uniform temperature of about ten degrees below freezing. This morning there was also much smudging by the Palisade peach growers. There was little damage done to the peaches by the freeze, and yet the peach crop will be light. There will probably be not over 60 per cent of a crop, due to the very cold snap about Thanksgiving and to the extreme cold weather during the entire winter. For the same reason the cherry crop, which is a big item in the Palisade district, will be a negligible factor. The sweet cherries are probably all killed. During the past few mornings the apricots are supposed to have been wiped out. The Keifer pears are just coming into bloom, but they are not far enough out to have been injured to any great extent. No damage to apples. At the present time the indications for a bumper apple crop could not be better.

The value of the foodstuffs produced by the school garden army in 1919 was $48,000.000.

The use of the ensilage cutter in preparing hay for feeding is gaining in popularity over the western cattle feeding territory. Feeders who practice this method report very material saving in the amount of hay wasted. A recent experiment at the Caldwell, Idaho, experiment station, brought out the fact that the cost of cutting was $1.50 per ton and the saving amounted to $4.26 per ton. This saving is largely the lessened waste of the hay fed.

Comment by Farmer Putnam.

(Continued from Page 11.)

farmers liked his way of tellin' 'em what was wrong with the poor ones and why he put up the good ones. One man sez:

"Why did you put my bull down to the end of that class? Ain't he a good bull?"

"Yes," sez Mike, "he's a good bull, except that he has a poor back, he hasn't got the depth of body that he should have and he's too small fur his age; outside of that he may be a good bull."

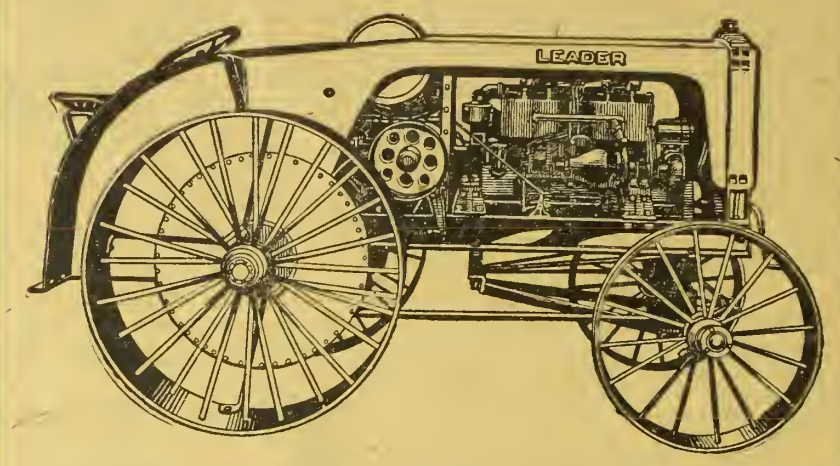
"He's got a good pedigree," sez the farmer.

"Yes undoubtedly," sez Mr. Penrose, "but a good pedigree don't necessarily make him a good bull. It takes more than the papers."

Thos. Jefferson Putnam.

Make Your Work *EASIER* with a

Leader 16-32 Tractor



KING OF BELT POWER UNITS AND A "HOG FOR WORK" IN THE FIELD

While getting surplus power, all day and every day, out of the new LEADER, you do it with the least work on your part—and economically with kerosene, the cheap fuel.

Enclosed Dirt-Proof Final Drive, comfort and ease of control are three great LEADER features. Here is a power plant built on experience—one that is bound to give you maximum service.

LEADER TRACTORS — HOGS FOR WORK — EFFICIENT POWER ENDURING STRENGTH

Write for descriptive matter today

Dayton-Dowd Company

Builders of Four-Wheel and Crawler Tractors Since 1911

352 York St., Quincy, Illinois

LEADER TRACTORS — HOGS FOR WORK — EFFICIENT POWER ENDURING STRENGTH

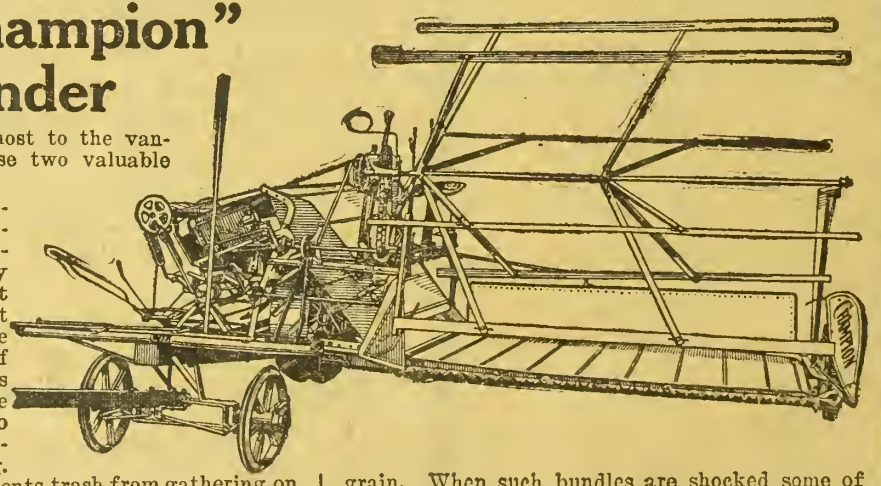
JOHN THAMS & SON

1434-44 WAZEE STREET DENVER, COLO.

How Much Grain Do You Lose Between Field and Thresher?

To avoid loss of grain from shattering, many farmers have adopted grain-tight racks for hauling to stack or thresher—a step in the right direction. But what about grain lost from shattering while passing through the binder or damaged while in the shock?

"The Champion" Binder



reduces this loss almost to the vanishing point by these two valuable improvements:

FORCE FEED ELEVATOR that automatically adjusts itself to light or heavy grain in different fields, or in different parts of the same field. The flow of grain to the packers is continuous and the grain is handled so gently there is practically no shattering.

RELIEF RAKE prevents trash from gathering on the inside end of the cutter bar. You don't have to leave your seat to remove trash or carry a stick for that purpose.

In operating most binders, weeds catch on the inner corner of the cutter bar and retard the butts of the grain, allowing the heads to be elevated first; so, instead of having a smooth bundle with heads all at one end, you have a bunch of grain. When such bundles are shocked some of the grain heads are in contact with the ground, causing them to sprout or rot.

The Relief Rake on the "Champion" keeps trash cleaned away and prevents grain being dragged through uncut. The kicking motion of the rake straightens the grain so it travels up the elevator in proper position.

FOUNDED 1825 B. F. AVERY AND SONS INCORPORATED 1877

LOUISVILLE, KY.

Clark's Travel Letter.

Thos. Jefferson Putnam, Salem, Colo.:

Dear Tom—I have been thinking about a remark you made the last time I saw you and that was that science can't explain everything. We are not supposed to know the why of everything. We are only a part of a great plan that God has devised and the person who tries to explain this plan has something wrong in his upper story. I have not heard of any person who can explain life, electricity, the planetary system, and thousands of other similar strange phenomena. I have been studying Prof. Conklin's book on "Heredity and Environment," and if you were to read it you might think that I was becoming an infidel, but not so Tom. This book gives facts as they exist, but it doesn't pretend to explain the facts. You know that wood burns, but you don't know why. The chemist knows more about it than you do, but there are certain things about burning that he does not know. Science is classified knowledge and fundamentally it is not supposed to teach the why. Think of man trying to disprove the teachings of the New Testament. Such an idea is foolish.

The more I observe and learn by actual experience, the more I firmly believe that Christ came to save man, not from brimstone and fire as formerly thought, but from his own meanness, wickedness and sordid nature. I believe His mission was to assist and accelerate evolution in transforming man from the lower to the higher type of animal. You can believe this and more, and less, if you want to, but you know men have made wonderful progress since Christ came among them. Christ tells us that if we transgress we shall suffer. Why that is equal to saying that if you stick your finger in the fire it will burn and that you will suffer. The mental, moral and physical operate together. Tom, knowledge, clear conscience and good health will give you happiness if you are in need of it. I thought the last time I saw you that you were troubled in mind or health or both, but I hope it is not serious. At one time we thought farmers' wives most largely filled the insane asylums, but now we find that the insane come largely from the cities and last year's statistics show that the largest percentage of the insane are lawyers. You see Tom that when a man does wrong his conscience and ultimately his mind becomes affected and this leads to insanity. You may well console yourself because very few writers go insane, less than 1 per cent.

The great fight, as I see it, is against deceit and untruthfulness. Our jails and asylums are filled and all kinds of suffering occurs because people refuse to be truthful and farmers are no exception. I lived for several years in a farming community where all the crimes known to criminals were committed. It was supposed to be a highly civilized community. I just mention this to show that moral improvement is needed in the country as well as in the city. Prof. Warren recommends mounted police for the country and I think it would be a good thing, but rather expensive.

A consistent truthful person is a jewel. Isn't it a comfort Tom to meet a person upon whom you can absolutely depend? We all have to live together on this globe and that necessitates law and order and when one takes undue advantage of another, or violates the law of the land I think to myself, "that is brute nature, one hog trying to get all the corn from another." Man is the most important organism in existence and we ought to try to live in a consistent manner and a credit to the animal kingdom.

I have written more on this subject that I intended, but it is all fact even though I am unable to give the reasons why.

Now, Tom, I must tell you what I learned on a silo trip I made with County Agent Vanderlip, last week. We spent two days looking at different makes of silos around Strasburg and Byers. Fred Haupert of Bennett, who has two silos on his farm, accompanied us on the trip. He certainly had a valuable experience in trying to farm before he got silos. In one field he had 42 acres and it furnished feed, during the summer, for only two cows. He got tired of giving so much land to a cow, so he broke the field and divided it into three fields of 14 acres each. One of these fields he sowed to fall rye and the next spring it pastured 14 head of cattle six weeks. After the cattle were removed the rye was allowed to go to seed and it produced three bushels to the acre. Another one of these 14 acre fields was planted to corn. This when ripe was put into a silo and fed along with wheat straw and it kept 14 head of cattle five months. The other 14-acre field planted to corn gave a yield of four tons of fodder to the acre. Don't you see the value of silage crops and the silo to the dry land farmer? He absolutely cannot succeed without them.

On our tour we stopped at one farmer who had a "Duke's Mixture" in his cattle and his corn, but he had a silo and it saved the day for him. In his cattle we found Shorthorns, Herefords, Holsteins, Jerseys, and to mix them properly he had placed a grad Red Poll bull at their head. I don't know why he thought a Red Poll bull would do this, or why it was necessary. The suicidal effects were very apparent. In his corn crib we found 23 different colors and 11 different types. He probably believed as another farmer did whom we met. This man got as many different varieties of corn as he could and mixed them in the lister box. He said if one variety failed another would succeed.

This is the wrong way, Tom. There must be only one breed and only one variety and rigid selection. This is the way all breeds of animals and varieties of plants have been improved and the boys and girls of this state in their club work are proving that it is the most profitable way. Pure seed throughout the United States is making the farmers millions and millions of dollars and why should any farmer in this age want to mix all the breeds and varieties at his command?

Silos should not have cement bottoms. We saw one that had and the silage, though nearly all fed out, was beginning to boil. I saw a similar case in Pueblo county two years ago and the silage at the bottom was rotten.

We stopped at the farm of Patsy Mourning. He has all the ear-marks that go with his first name, but there is no mourning about him. He radiated more real enjoyment and contentment than I have seen in many a day. I think it must have been due to the fact that he has his two big pit silos about finished.

The silage we saw at the Chas. Ludwick farm was interesting. The silage cutter did a very poor job; in fact, the corn was only shredded, but it was well packed into the silo, throughly wet and it came out in first class condition. This shows the value of careful packing and wetting.

Arapahoe county is going strong on the Milking Shorthorns. Among those who have herds are Sherman Dye, G. A. Slater and R. C. Meador. Under the conditions that prevail I think it a good thing, but selecting according to the amount of milk produced must be practiced if progress is to be made. Many good hogs were seen everywhere. R. L. Edelen has an extra fine lot of very typy purebred Poland Chinas and A. T. Warner many superior Duroc Jerseys.

The second day of the tour we attended a sale at the farm of A. J. Critchfield, who is discontinuing farming and going into the bee business at which he is an expert. He has a large apiary scattered throughout the county and is finding it to be profitable. He secures as high as 240 pounds of honey to the hive.

Well, Tom, today is Good Friday. I wonder if the people know and appreciate what it means? The terrible condition that man was in on the original Good Friday is now known to but few. Paganism overran the world and men preyed upon men as one beast upon another. We have a lot to be thankful for Tom and as Dr. Glover says, "We should count our blessings."

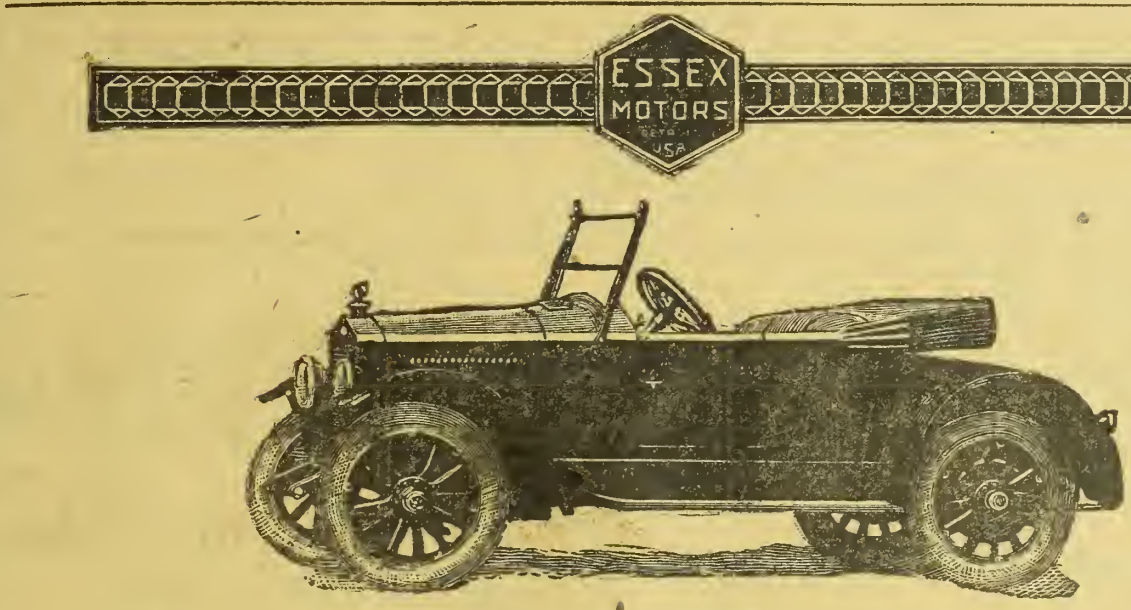
Happy Easter to you, Josephine and the children.—R. W. CLARK.

Magazine Pays Its Way.

Western Farm Life:

I herewith enclose $1 for a two year's renewal subscription to Western Farm Life. It has become a necessity in my establishment. I do not know how I would get along without it. It has paid its way many times the last five years. All good wishes for success of Western Farm Life.—Joseph W. Thompson, Cannonville, Utah.

If the fruit grower takes care of his orchard, his orchard will take care of him.



The Roadster, Too, Has All the Noted Essex Qualities

Speed—Power—Endurance—Economy—Utility. It is an Ideal Car for Business as Well as Pleasure

The wide uses for which the Essex Roadster is adapted in farming activities are instantly apparent.

Besides fast, comfortable communication with the city, it has many valuable utilities. The carrying arrangements in the rear deck provide space for large crates, cases, boxes, etc. But no evidence of them is revealed when the Roadster is used as a pleasure car. Every line is smart, trim and graceful. It takes but a moment to make the change.

A World Endurance Record Proves Essex Dependability

A large class of Essex buyers are farmers. They choose it for utility and dependable transportation. It becomes, in fact, a part of their business system. It must be on the job, keep all engagements on time, and be as responsible as an engineer's watch.

These same qualities, with its rare good looks, make the roadster unsurpassed as a smart car for pleasure.

Economy, durability and train-like regularity are the standards set by Essex. These things have been shown in the hands of more than 30,000 owners.

It was more dramatically proved on the Cincinnati speedway when an Essex stock chassis set the world's long distance endurance record of 3,037 miles in 50 hours. The same car, in three separate tests traveled 5,870 miles at an average speed above a mile a minute. Another stock Essex set the world's 24-hour road mark of 1,061 miles over snow-covered Iowa roads.

Its endurance and riding ease make it ideal for those who must cover wide territory, quickly and frequently. Though not large, the Essex is commodious. There is plenty of room for passengers, and its special arrangements for carrying even bulky, heavy loads make it an unusual convenience in farm service.

Come see the Essex Roadster. Ride in it. Try its paces. Whether you want it for business or pleasure, you will appreciate why Essex in its first year set a new world's sales record.

Essex Motors, Detroit, Michigan

(E-182)

The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Let me not to the marriage of true minds
Admit impediments. Love is not love
That alters when it alteration finds,
Or bends with the remover to remove.
O, no! It is an ever affixed mark,
That looks on tempests and is never shaken.
It is the star to every wandering bark,
Whose worth's unknown, although his height be taken.
Love's not Time's fool though rosy lips and cheeks
Within his bending sickle's compass come;
Love alters not with his brief hours and weeks,
But bears it out even to the edge of doom,
If this be error and upon me proved,
I never writ, nor no man ever loved.
—William Shakespeare.

Wedding Day Suggestions.

Married in June
Life will be one long honeymoon.

Honeymoon or no, the wedding comes first, and many are the flutterings of hearts planning the big event. At an occasion so momentous, the question isn't usually to have things formal nor conventional because of what people will think, though being human, that always enters in, but most conventions have a basis of thoughtful care for guests and for the general well being of a situation, and we want this greatest of days to have the sweetness of memory which only the most thoughtful care for others can bring.

The questions that come up are usually those concerning the invitations, what to wear, decorations and what to serve for the wedding breakfast or luncheon. We are not going to talk much about anything but the last of these. What we'd like to do is to have the June brides-to-be write to this department of Western Farm Life on any of the above mentioned questions and let's have a wedding round table. Sounds queer, doesn't it? But the very question that's puzzling you may be puzzling some one else and we'd all feel better to talk it over. So please, if you have questions on this very interesting subject, please write in and we'll send all the information we can muster.

Now what to serve.—In the very first place, there is always one thing we must have and that is a bride's cake, for besides being a most delectable dainty to eat, tradition says that every yearning young lady must have a bit of it to dream on, and on and on. There are recipes for bride's cakes, but if any member of the family makes a very good white cake, either an angelfood or otherwise, don't bother hunting them up. For that kind, iced beautifully, makes just as good a bride's cake as there is. The frosting may be as fancy as you like, but should be just right, neither too hard nor soft, as the very much flustered bride must cut it and see that it is served to each guest. A cake with shortening sometimes cuts a little better than an angelfood, as it isn't quite so apt to stick to the knife.

Here are two rather elaborate menus for a luncheon which could be altered a little to suit individual tastes, but which could come from any farm icebox and pantry:

(1) Strawberries (served with stems on, to be eaten with a little sugar, but no cream).
Chicken Salad on rosettes of lettuce.
Striped Sandwiches. Stuffed Olives.
Coffee.
Fruit Salad. Pink and white mints.
Rose Sherbet. Wedding Cake.
Fruit Punch.

(2) Fruit Cocktail.
Cucumbers with French Dressing or Salted.
Bread and butter sandwiches.
Chicken Breasts, Mushroom Sauce.
Peas.
Rolls, buttered. Ice cream or an Ice.
Bride's cake: Fruit cake.
Bon bons. Coffee.

Chicken should be the meat and we are giving some good ways of serving it which may not be new to you.

Virginia Fried Chicken.

Dice and fry one-half pound of salt pork until it is well rendered. Cut up a young chicken, soak for half an hour in salt and water, wipe dry, season with pepper, roll in flour, and fry in the hot fat, until each piece is a rich brown color. Take up and set aside while gravy is made. Pour into the gravy one cup of milk, half cream is better, thicken with flour, and add a tablespoonful of butter and chopped parsley; boil up and pour over the hot chicken. Plain boiled rice should accompany this.

Chicken Mousse a la Windsor.

Beat the yolks of three eggs slightly, add one-half teaspoonful of salt, one-fourth teaspoonful of paprika and a few grains of cayenne, then pour on gradually while stirring constantly, one cupful of hot chicken stock. Cook over hot water, stirring constantly, until the mixture thickens and add one and one-fourth tablespoons of granulated gelatine soaked in two tablespoonfuls of cold water. When the gelatine has dissolved, strain and add two-thirds of a cupful of cooked white meat of chicken, cut as finely as possible and one-third of a cupful of finely chopped blanched almonds.

Bride's Cake.

Here is the bride's cake recipe if you want to use it:

Cream together one scant cup of butter and three cups of sugar; add one cup of milk, then the beaten whites of twelve eggs; sift three teaspoonsful of baking powder into one cup of cornstarch mixed with three cups of sifted flour and beat in gradually with the rest; flavor to taste. Beat all thoroughly, then put in buttered tins, lined with letter paper, well buttered, bake slowly in a moderate oven. Ice the top.

Salad Cream Dressing.

One cup milk, teaspoon of flour, two eggs, two spoonsful powdered sugar, pinch salt, one tablespoon of butter. Heat milk almost to boiling, stir in flour and other ingredients which have been previously mixed with cold milk. When quite cold, whip in cup cold cream, and juice from one lemon. This is a delicious dressing for fruit salad. —E. D.

Rancid butter may be made sweet again by soaking in ice cold water, to which a pinch of carbonate of soda has been added. Allow butter to remain in the water for two hours.

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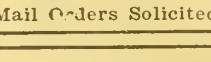

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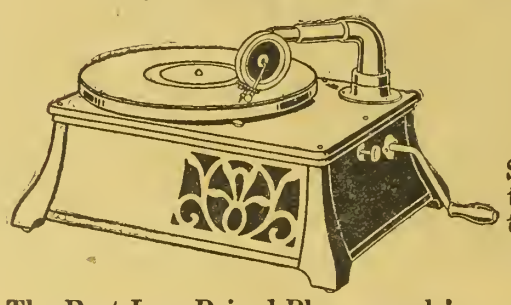

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Or let the streams of civil mode
Direct your choice upon the road.

For one and all, or high, or low,
Will lead you where you wish to go;
And one and all go night and day
Over the hills and far away.
—Robt. Louis Stevenson.

If we can get you interested in using the Ford or the Studebaker or the Maxwell (Farmer Putnam called us down most dreadfully last time because we didn't mention a Maxwell, and he has one, you know), on a real little vacation trip, we must show you some place where it's really worth while "vacating." The first trip to which we want to introduce you is to our Rocky Mountain National Park, known to all the old-timers and most of the tourists of the eastern states as "Estes Park." It isn't so far from anywhere but that any of the aforesaid vehicles can get you there and back in a few days, with some time in between for looking around and playing a bit, and if any place in Colorado is a playground, Estes Park is that spot.

It lies in the northern part of the state, not more than three and a half hours' run from Denver, and is easily reached from any of the small towns north of Denver. If there had been Fords in the days of "Used to be," they wouldn't have gone bowling merrily up an easy graded canon and out into the beautiful open space where the Thompson river leaves the valley to cut its way through to the plain. Things were different then. When the writer was about as big as John or Susy, we used to start valiantly to the Park by means of a big wagon—old Dobbin and Dibbinette, and much camping paraphernalia. We wound up over "old Baldy" from Loveland at sunset of the first day, and old Baldy would have discouraged even the Ford, and then at the end of the second day, we slid gaily down Park Hill and considered that we had been bodily dropped into the valley for two or three weeks and must make the most of it, for it was very difficult to get in or out.

Now an easy drive up a winding river, but that river walled in by mighty walls of granite rising so straight and high in some spots, that the eyes can scarcely find the top, leads at last into a beautiful valley, which holds to its breast, mountain peaks, lovely lakes and beautiful forests. The road winds in and out and up and down the valley and every vista is a new and lovely one.

The Park is circled with its jewels of lofty mountains and most magnificent of all these is Long's Peak, one of the highest of Colorado's lofty peaks. All the tiny valleys hold lovely lakes, fed by never melting glaciers as grand as any the Alps afford. The slopes are covered with pine and fir, balsam and cedar and the dainty quaking aspens; but we can't stop to tell you a millionth part of all the beauty that lies there.

If HE so desires to fish—let him fish, for there be many well stocked lakes and streams, but if he desires more studious sport, there are many wild animals to be studied, and wild flowers in abundance. But this is a national park, remember, and the animals cannot be shot nor the flowers destroyed.

You can live any way you want to, in a hotel, in a cottage, or carry the makings of the Arabs along with you and camp out—only always be sure to leave your camp clean and put the fires out.

Travel unites people, opens up hearts and souls and minds, and talk about teaching geography to children! Hallet's glacier is just as "glacy" and much more real than the Matterhorn to a fifth grader, and Moraine Park will teach more of the earth's history than all the maps of the great Ice Sheet that ever were invented. All aboard for Rocky Mountain National Park, at any time from May until October. Who's going?—E. D.

For the Young Naturalist.

The collecting instincts of most small boys regarding bird's nests and eggs have to be pretty sternly curbed, but the instinct for obtaining some of nature's curios can these days be very well directed by getting the young naturalist to get as many kodak pictures of the live things in their own haunts as he can. It develops all there is of a youngster's patience, and all there's ever going to be of his ingenuity, and

gives him a very permanent keepsake of which all the family should be proud, and still it doesn't require dusting.

Collections of moths and bugs are different and such will help in high school biology. There is an interesting bulletin on this. Any boy can very readily secure it by writing to the Superintendent of Documents, Washington, D. C. The bulletin is called "Collection and Preservation of Insects and Other Material for Use in the Study of Agriculture." It is Farmers' Bulletin No. 606.—E. D.

New Fashion Service.

All Patterns Now 12 cents Each: Address WESTERN FARM LIFE, Pattern Department, 1518 Court Place, Denver, Colo.

9632. Ladies Waist.—Cut in sizes 36, 38, 40 and 42 inches bust measure. The collar of this striped waist decided to be be of white material, to make its attractive outline more pronounced.

9613. Ladies' Blouse.—Cut in sizes 36, 38, 40 and 42 inches bust measure. The back, front and sleeves are cut in one.

9624. Ladies' House Dress. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The three-piece skirt is gathered and the waist has a set-in vest.

9631. Ladies Dress.—Cut in sizes 36, 38, 40 and 42 inches bust measure. Buttons let one know that this frock closes at the side-front.

9612. Girls' Dress.—Cut in sizes 4, 6, 8, 10, 12 and 14 years. Surplice is the collar terminating in long sash ends at the back.

9611. Girls' and Childs' Kimono.—Cut in sizes 1, 2, 4, 6, 8, 10, 12 and 14 years. The sleeves are cut kimono style and the fronts are faced with satin.

9618. Ladies' Two-piece Skirt.—Cut in sizes 26, 28, 30 and 32 inches waist measure. Straight pieces of material are inserted in the seams to form the cascade drapery.

8716. Ladies' Skirt.—Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. The wide belt worn with this gathered skirt gives a yoke effect.

Braided Rugs.

The rags must be cut much thicker than for the woven rugs, and three strands are used in braiding. Two strands must be sewed and wound into balls, but one must be short so as to pull through in working and keep the three from becoming tangled below the hands.

I tie a piece of cloth to the back of a kitchen chair, place the chair in front of me with the back to me; then pin the three strands to the cloth with a safety pin and begin braiding. I braid very tightly as I find it pays both for looks and wearing quality. The rags need not be of any certain kind. I like old fine knit underwear, stocking legs, flannelette and soft wool goods the best, but I use old muslin, gingham, and in fact any kind of cloth, even old trousers and overcoats. I color the light rags with Diamond Dyes. The ends of the rags may be lapped and braided in and none of them sewed, if so desired.

In sewing, start with a center braid the length of the rug minus the width intended; double back and sew together the two braids, turn back, pulling at the end and on round and round. Use number 8 thread, waxed, and a long, strong needle. For light weight rugs, sew over and over like a whip stitch, hiding the thread between the strands of the braid, and for very heavy braids it will be necessary to pass the needle back and forth, taking a little more time.

A medium sized oval rug weighs from four pounds when very fine, to nine when quite heavy.

I would say that there is much work in connection with the making of even one rug, and were it not for the splendid wearing quality (ten to fifteen years being my experience, and more where not in constant hard use), the home like, country like appearance, and the beautiful way in which they stick to the floor, making it almost impossible to kick up and shove around, I might say it does not pay. The getting together of so many rags seems to be the hard thing for some. The best way I think is to wash and put away every bit of available material during the whole year. Have a rug box, then in the stormy days of winter when the days seem long and the evenings interminable, get great fun out of rug making. Two a winter will soon count up.

I would add that they dust easily and launder well.—Mrs. F. C. Paige, Wigwam, Colo.

Bakes Sausage in Oven.

Miss Erma Douglass:

Have read of Mrs. J. M Rodgers' experience in canning sausage and as she asks for suggestions on the subject, I feel free to tell my experience which I have found very successful in canning sausage.

I take 1 or 2 pound coffee cans, if two pounds I leave in oven of course, longer. I sterilize the cans with boiling water, being very sure the cans are sound and do not leak, or your sausage might spoil. I then pack the sausage in very tight, place in oven with lid of can off. I have never timed the baking, but leave in until quite brown on top; remove from oven, pour over melted lard until the sausage is covered (some lard will bake out of the sausage), place lid on can. I keep my cans in cellar and last summer I would open a can in August and have perfectly fresh meat. Scrape the lard off the top, then place the can in the oven a few minutes for lard around sausage to melt;. then turn the can upside down and out falls the sausage in a beautifully round mold. You can slice this sausage, put in a skillet of hot lard and fry a beautiful brown, and is as nice as freshly butchered sausage. It is delightful for lunches when sliced cold.

This spring I put my sausage away by baking it and I hope to get the results I did last year, which were perfect. This method was borrowed from a neighbor and I pass it on, hoping it might be the help to others it has been to me.—Mrs. R. H. Buckley, Center, Colo.

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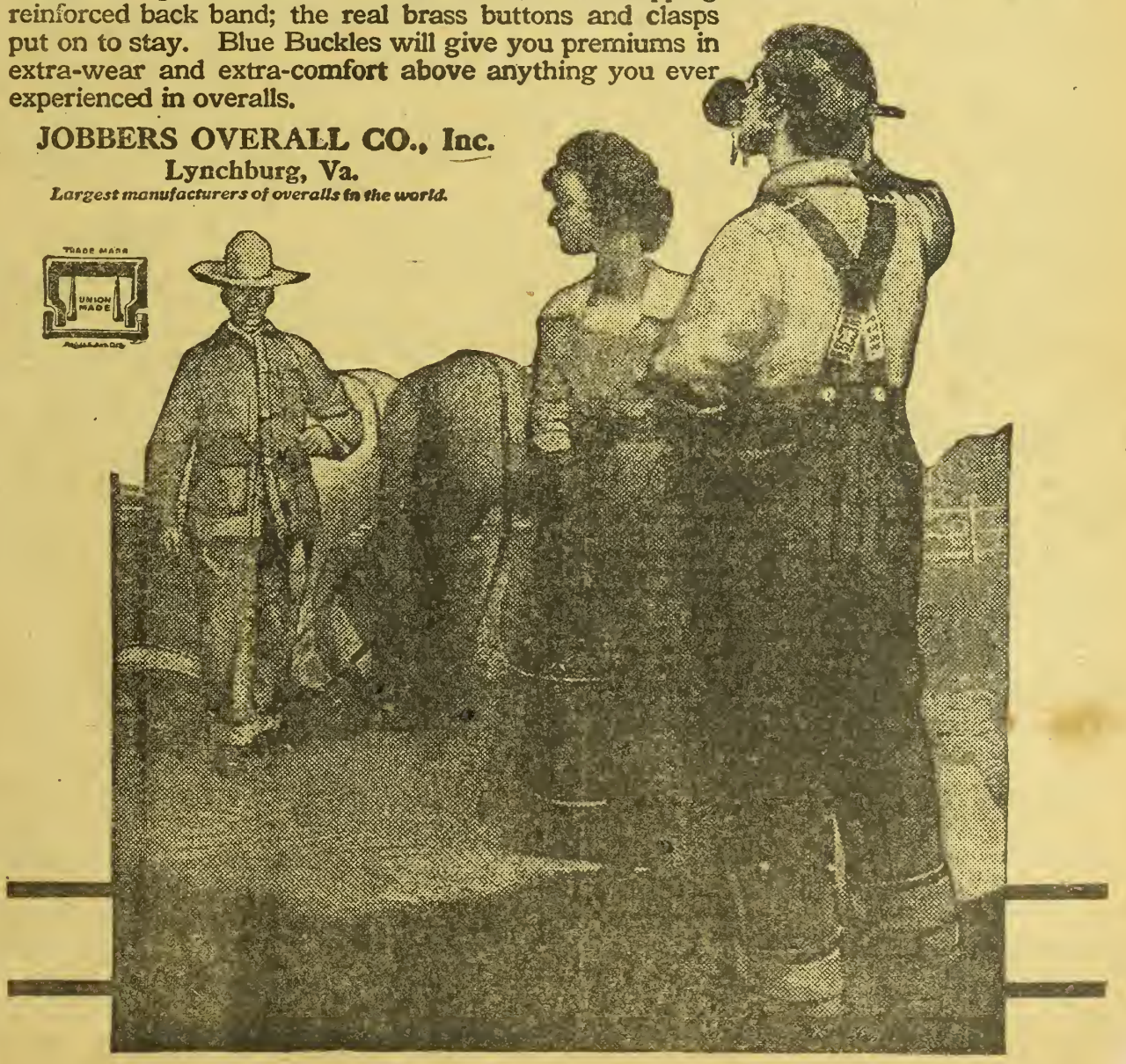

Profitable Farm Poultry

W. E. VAPLON.

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, Western Farm Life, Denver, Colorado.

If anyone thinks that the poultry business in Colorado is a little one-cylinder affair, he can easily undeceive himself by taking such a trip as the editor of Western Farm Life and the writer took a short time ago in the vicinity of Denver. We had but two days and necessarily found it impossible to visit all the large poultry plants and hatcheries, but saw enough to convince us that the business is on a strong and successful basis.

The first day we visited poultry plants with the purpose in view of getting the producer's viewpoint regarding the outlook for poultry production; naturally we learned much concerning his difficulties, disappointments and success, but much of this is of little value to Western Farm Life readers, as all have about the same problems to face and to work out; a few facts, however, especially relating to the hatching of chicks will be of interest.

We found the Denver Incubator Company installing machines to increase their hatching capacity to 30,000 eggs. Eggs are bought from proven flocks of several varieties of fowls and the chicks are sold outright, or eggs will be hatched for customers at a stated price. When questioned as to what is considered a good hatch, Mr. Walters, owner and manager, replied that an average for the season of 50 per cent of all eggs is considered good; he also informed us that the manager of a 95,000 egg hatchery in California told him that 50 to 55 per cent was all they expected. Leghorn eggs hatch somewhat better than those of the larger varieties, which is not news to anyone who has handled the different breeds.

The hatching season begins about the first week in March and ends the third week in July. The shortness of the hatching season in Colorado as compared to that of California is probably the chief reason why chicks are somewhat higher in price here.

One of the customers of this firm bought 578 chicks last year and raised 512 of them. If our farmers could do as well as this, there would hardly be any argument in favor of hen hatched or even of home incubator hatched chicks. Needless to say these 578 youngsters had a good colony brooder and good care.

We were surprised to learn at the hatchery that the incubator business, meaning the manufacture and sale of incubators, is not as good in recent years as formerly. This statement holds good regarding the country as a whole. This was a surprise to us, as we know that more chicks are hatched each year and that even incubators wear out, but the explanation was right in line with what we have been telling our readers, that more and more people are buying their chicks and discarding their machines; this relieves them of the investment and of all the work and worry connected with the machines and in many cases the added work and expense of keeping breeding fowls.

Practically every hatchery we visited is increasing its capacity in anticipation of the expected increased business. Last year they found it impossible to fill all orders and the increased interest in the poultry business certainly warrants them in this belief. The poultrymen we visited were all optimistic by reason of the success they are having. The general opinion is that the prices being paid for poultry products more than offset the high prices for feed, but the fact that poultry raising is becoming more and more a manufacturing business is the chief reason for greater profits. In other words, when raw material is to be made into a finished commercial product, the manufacturer, in order to get as much of that finished product as possible from the material he uses, must have that machine in the very best running order; more, he cannot afford to own idle machinery, or run inefficient machinery. Culling and selection has done more probably, to increase the profits of our poultrymen, than have better methods of feeding or housing, or increased egg production of the individual hen, though all these factors are important.

Trapnesting is not generally practiced and very seldom in a thorough way. Some check their layers for a period of time in order to cull out the poorer layers, but the practice is not favored except where the breeder is trying to establish a record for commercial reasons.

We found, too, many people apparently satisfied to remain "community poultrymen." Local success seems to be enough, or, if they have any greater ambitions it is not noticeable. With the great demand for breeding stock, baby chicks and eggs for hatching, to say nothing of the demand of larger consumers for meat and eggs, it seems strange that the poultryman is not more of an advertiser. We have always found it true that there is someone, somewhere, who wants what I have and do not want. Generally he is not going to much expense or trouble to find me and my article, but when I bring what I have to his notice, a trade can be made. Slowly but consistently the man who is expecting to build up a big commercial poultry business must extend the field of his operations, he must let people at a distance know what he has to sell; the trade may not swing his way in a flood, but if he has the goods he will win out. We are having calls right along for names of breeders of certain breeds and varieties and when we are unable to find advertisements of such breeders, the business is lost or goes cast.—W. E. V.

How Many Males?

The books tell us one to every dozen to twenty hens in the flock, according to the breed, the conditions under which they are kept, or the whim of the writer. This is only one more of the eleven thousand things we don't know, but here is a little experience we had several years ago. We were moving into the country, had 42 R. C. White Leghorn hens and 14 W. P. Rock hens. The hatching season was over, so we disposed of all males except one White Leghorn cock, two years old. The flock was given free range. Several parties wanted eggs for hatching, even when informed of the conditions, and we furnished the eggs. The reports of hatches were all good, one party reporting 14 chicks from 15 eggs. Since then we have known of good fertility from flocks of about the same size, but we don't know the limit.—W. E. V.

Selecting the Best Layers.

A noted Henologist in a recent Farm Journal says: "Trapnest from January first to July; double this record and get the year's crop." Did you ever have a hen that would lay as many eggs from July 1st to January 1st as during the preceding six months? Nothing doing on such a system of selecting layers but to reap a big crop of disappointment.—W. E. V.

Baby Chicks.

Remember that variety is the spice of a chicken's life Whether there be a little more or less of one or another of the grains matters little, and perhaps it matters as little whether the grain be fed separately or mixed, but two or more grains are essential to the best results. Finely cracked corn and wheat should constitute the bulk of the ration, oatmeal being rather expensive; but a little oatmeal will prove to be worth all it costs. Milk, first and always, sour milk or buttermilk preferably. Mix the mash with milk warmed even when dry mash is furnished. When plenty of milk is fed, no meat need be given, but when no milk is obtainable at a fair price, meat scraps or blood meal ean be fed. —W. E. V.

Incubation—How Long?

Hen eggs hatch in 21 days.
Duck eggs hatch in 28 days.
Turkey eggs hatch in 28 days.
Guinea eggs hatch in 28 days.
Geese eggs hatch in 30 to 34 days.

Experience vs. Theory.

The experience of Frances H. Brown as related in Western Farm Life of April 1st, is worth more to our readers than much of the technical dope being disseminated from many sources. That little thing mentioned as being the secret of Mrs. Brown's success, warmth, plenty of it and all the time, is so simple, and so easily furnished, that there is no excuse for neglecting it. Perhaps as she says, it is too simple for the average mind to grasp. Like the royal leper who was told to dip himself in Jordan and be cured, too easy. We have always contended that this factor is more important than the other ninety and nine things so strongly stressed in raising baby chicks. Read that article again if your chicks are complaining and ailing, and examine carefully to see that warmth is being furnished all the time.—W. E. V.

Success of Egg Circles.

Two egg "circles" in Lee county, Miss., last year sold $12,135.40 worth of eggs, and so far this year are beating last year's records.

An egg 'circle" is an association of producers for the co-operative marketing of eggs. It may have few members or many. The eggs, which bear the "circle's" stamp, are guaranteed, and they command better prices than eggs which have been improperly handled. As poultry on the average farm is under the care of the farmer's wife most of an egg circle's members are women.

The first egg circle in Lee county was organized near Shannon, in 1915, by the county home demonstration agent. There were only 8 members at first, but the number soon increased to 20.

The circle adopted certain rules, some of which were to gather the eggs once or twice daily, to stamp name and address of "circle" with individual's number on each egg, and to meet once a week in winter and twice in summer. If a member was guilty of selling a bad egg, she must pay a fine. The individual's number on the shell of a returned egg located the guilty one. The "circle" eggs were packed in 30-dozen egg cases. The secretary-treasurer kept accounts and settled with the member the week following the sales. Turns were taken in carrying the eggs to town. This circle still exists, and as time has gone on has broadened its field of co-operation. Now it sells butter as well as eggs, and the members buy many of their supplies co-operatively.

Other communities in the county have taken up the idea, and some of them are doing even bigger things than the original group. Two of the other "circles" have a membership of 60 each. Besides increasing their own incomes the members of an egg "circle" put a better class of eggs on the market. The social and educational features of a "circle" are also considerable.

The two largest "circles" in Lee county ship most of their eggs directly to Memphis. In 1919 they netted $1,500 over what they would have received on the local market for their products.

The Shannon "circle" last year sold $5,831.10 worth of eggs; and the Baldwin, the other large "circle," sold $6,304.30 worth.

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WALTER L. MILLER
633 Sixteenth Street. Denver, Colorado

Sick Baby Chicks?

There is only one way to deal with baby chicks and that is to keep them well. Doctoring a hundred or more chicks is mighty discouraging work.
It's pure carelessness to lose more than 10 per cent of chicks, from hatching to full growth Many lose 40 per cent to 60 per cent, and even more. No profit in that.
Our book, "Care of Baby Chicks" (free) and a package of Germozone is the best chick insurance. WITH BABY CHICKS YOU MUST PREVENT SICKNESS—NOT ATTEMPT TO CURE. "I never had a sick chick all last season"—C. O. Petrain, Moline, Ill. "Not a case of white diarrhoea in three years"—Ralph Wurst, Erie, Pa. "Have 800 chicks now 5 weeks old and not a single case of bowel trouble"—Mrs. Wm. Christiana, Olive Ridge, New York "Two weeks after we started last spring we were a mighty discouraged pair. Every day from three to six chicks dead. A neighbor put us next to Germozone and we are now sure if we had had it at the start we would not have lost a single chick"—Wm. E. Shepherd, Scranton, Pa.
GERMOZONE is a wonder worker for chicks, chickens, pigeons, cats, dogs, rabbits or other pet or domestic stock. It is preventive as well as curative, which is ten times better. It is used most extensively for roup, bowel trouble, snuffles, gleet, canker, swelled head, sore head, sores, wounds, loss of fur or feathers. 25c, 75c, $1.50 pkgs. at dealers or postpaid.
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per pound. Arsenate of calcium 26c. Arsenate of lead 32c. Bordeaux mixture 22c. Bordo-arsenate 26c. Dry lime sulphur 15c. Quality only. Buy it the co-operative way. Special prices on large quantities. Write for complete price list. Reference, any bank.
AMERICAN CO-OPERATIVE ASSOCIATION,
Dept. 25, Milwaukee, Wisconsin.

Farmers' and Stockmens' Exchange

Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LEGHORNS.

S. C. WHITE LEGHORN EGGS; PUREBRED, $8 per 100. Mrs. Lawrence Ricklefs, Troy, Kan.

S. C. WHITE LEGHORN BABY CHICKS TO your door from Eggs-a-day-line; $20 hundred; also eggs. S. Pelitier, Concordia, Kansas.

PURE SINGLE COMB BROWN LEGHORNS, bred to lay. Eggs $8, 100; $4.50, 50; $2 setting, prepaid. Chas. Bowlin, Olivet, Kansas.

SINGLE COMB WHITE LEGHORNS—EGGS, $1.75 for 15 prepaid parcel post, $6 per 100, express. Baby chicks, 18c. Mrs. C. C. Cole, Levant, Kansas.

PUREBRED ROSE COMB BROWN LEGHORN eggs, $8 per bundred, pen $3 setting, baby chicks 20 cents. Prepaid. Mrs. H. Lee Smith, Route 2, Kanopolis, Kansas.

S. C. WHITE LEGHORN EGGS, TOM BARRON and Ferris strain, 8 cents each in lots of 30 or more. Wm. A. Draves, Lemoyne, Keith Co., Western Nebraska.

S. C WHITE LEGHORNS. NOW IS THE time to place your order for hatching eggs. My hens are bred to lay and do it. L. E. Larson, Fort Morgan, Colo.

PUREBRED SINGLE COMB BROWN LEGHORNS, exclusively. Eggs $1.50 per setting. Incubator lots, 8 cents per egg prepaid. Jacob P. Miller, Fowler, Colo.

FARMERS IF YOU WERE BETTER ACQUAINTed with the Buff Leghorn you would have more eggs. Baby chix and hatching eggs now ready. Champney, 2057 So Broadway, Denver.

BABY CHIX—BUFF LEGHORNS MARCH 10TH, weekly hatches after this. Other breeds in any quantity. Book your orders early to avoid disappointment. Champney, 2057 So. Broadway, Denver.

QUALITY EGGS FOR HATCHING. ROSE COMB white Leghorns 100, $8. Large 5-pointed single comb brown, 100, $7. Fine winter laying strains. Oakgrove Poultry Farm, Dannebrog, Nebr.

WINTERLAY—BARLOW'S WELL KNOWN strain, Hoganized Single Comb White Leghorns, standard. Bred to lay and do it. Flock of 160 laid 146 eggs January 17th. Eggs, chicks, catalog. Barlow & Sons, Kinsley, Kan.

SINGLE COMB WHITE LEGHORN HATCHING eggs from my Nebraska and Iowa State Show Champions. Eggs from special matings, $2 per 15; $12 per 100; heavy laying flock, $8 per 100. Mating list. C. G. Gould, Alma, Nebr.

BLAKELAND EVERLAYERS, SINGLE COMB White Leghorns. The famous Tancred high-laying strain. Breeding birds, hatching eggs and baby chicks. Place orders now. Quality the best only. Satisfaction guaranteed. Blakeland Farm, Littleton, Colo.

EXTRA GOOD SINGLE COMB WHITE LEGHORNS. Our flock is mated to produce results. Pure white heavy layers mated to sons of high record hens. (272 to 307 eggs per year at Oregon station). Eggs $7 per 100, setting, $1.50; order now. E. D. Allen, Route 1, Hastings, Nebr.

PLYMOUTH ROCKS

WANTED—FIFTY WHITE ROCK HENS. DUFF, Casper, Wyo.

CHOICE BUFF ROCKS—EGGS, 15, $2; DELIVered. J. W. Ragan, Medicine Lodge, Kansas.

PURERED BUFF ROCK EGGS, $3 PER 15; PER 30, $5. Barbara Clinkenbeard, Wetmore, Kan.

PUREBRED WHITE ROCK EGGS $2 PER 15; $7 per 100. Mrs. Elsie Holderness, Dillwyn, Kansas.

BUFF ROCK EGGS, QUALITY, SIZE AND LAYers; $8 per hundred. W. K. Stillings, Cummings, Kansas.

RINGLET STRAIN BARRED ROCKS, FINELY barred, big boned; no better any where; 16 eggs $2. T. E .Moore, Akron, Colo.

BARRED PLYMOUTH ROCK EGGS FOR SALE, $1.25 per setting of 15; $6.00 per 100. John M. Mischke, R. F. D. 3, Loveland, Colo.

PURE BARRED ROCK EGGS FOR HATCHING —Prize winners; $5.00 for 15. Winter laying strain. E. Plessinger, Cheyenne Wells, Colo.

BUFF ROCK EGGS, FROM PRIZE WINNING stock, 100, $7; 50, $4; 200-egg Mandy Lee incubator, good as new, $25. Maggie Stevens, Humboldt, Kansas.

WHITE ROCK EGGS—GUARANTEED PURE, booking orders now; $2 per 15, $5, 50; $8, 100; cockerels, $4 each, three for $10. F. D. Webb, Sterling, Kansas.

BARRED ROCK EGGS FOR HATCHING, FROM pens, either light or dark, $3 for 15; from range flock, $6 for 100. Send for mating list. Chester Blunt, Route 1, Greeley, Colo.

LAYMORE BARRED ROCKS—Eggs $5.00 for 15. Baby chicks 50 cents each. Nebraska State Fair and Missouri first prize winners. First in Colorado in profit with over $70 each in 1918. Rhode Island baby chicks, $20.00 per 100. J. R. Anderson & Son, Ft. Morgan, Colo.

PARK'S 200 EGG STRAIN BARRED ROCKS. Utility eggs for hatch; 15, $2; 30, $3.75; 100, $8. Pedigreed 15, $2.50; 30, $4.50; 100, $10. Parcel post prepaid. R. B. Snell, Colby, Kansas.

BARRED PLYMOUTH ROCKS—THOMPSON strain. Dark narrow barring, barred to the skin, big-boned, bred for beauty, size and eggs. Special mating $5 per 15. Farm range, $2.50, $10 per 100. A. N. Waechter & Son, Yuma, Colo.

BARRED ROCK EGGS FROM GRAND SPECIAL matings, 15, $5; 30, $9. Range flocks, 15, $2; 100, $10. Our strain bred for extreme exhibition and heavy egg laying qualities. Ahlquist Bros., Box A, Florence, Nebr.

EGGS FOR HATCHING—PUREBRED WHITE Plymouth Rocks, Fishel strain, world layers, also Golden Egg Tonic. Keep your hens healthy and laying. Satisfaction guaranteed. Mrs. W. F. Christman, Scottsville, Kans.

FOR SALE—BEST WHITE ROCKS IN THE West. Seven mated pens; pullets and cockerels to offer; setting eggs, $3.00 and 5.00. Last January at Denver Stock Show we won First Cockerel, First Pullet, First Hen, and many other prizes. F. L. Toliver, Ft. Collins, Colo.

RHODE ISLAND REDS

PUREBRED SINGLE COMBED, EGGS 15 FOR $1.50; 100 for $7. Edna Knisely, Talmage, Kans.

BEAUTIFUL ROSE COMB REDS. EGGS 30, $3, baby chicks 20c, postpaid. Lucy Ruppenthal, Lucas, Kansas.

ROSE COMB RED CHIX, $18, 100. EGGS FROM prize winners, $2.50, $3.00 per 15. Mrs. R. E. Hailey, Wilsey, Kansas.

THOROUGHBREDS ROSE COMB RHODE ISland Reds. Hatching eggs, $7, 100. Minnie Messing, Wiggins, Colo.

S. C. RHODE ISLAND REDS; HEAVY LAYING strain. Eggs $2 per 15; $8 per 100. Mrs. Roy Hickson, Valley, Nebr.

EGGS IN BOTH COMBS FROM OUR STATE show winners; $3 per 15. Ask for mating list. Brumley Red Yards, Wellington, Kansas.

PUREBRED ROSE COMB RHODE ISLAND RED eggs, $2 for 15; $10 per 100. Baby chicks, 25 cents each postpaid. C. S. Holtzinger, Ellis, Kansas.

ROSE COMB RHODE ISLAND RED EGGS FOR hatching. Big bone, deep red, 100 $7; 50, $4; 15, $1.25. Mrs. Mark Flanagin, Pawnee City, Nebr.

PETERSON'S HIGH CLASS SINGLE COMB Rhode Island Reds. Write for prices and hatching eggs. Three pens. Nels W. Peterson, Mason City, Nebr.

VELVET ROSE COMB RHODE ISLAND RED eggs, 15, $2; Range, 100, $8. Bourbon Red turkey eggs, $5 per 11. Mrs. Mina Johnson, R 1, Erie, Kansas.

S. C. COCKERELS, HENS AND PULLETS; $5 each, mated trios $12. Bred from prize-winning stock. Eggs $1.50 for 15. A. W. Phipps, Evanston, Wyo.

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

LOWER'S POULTRY FARM, ARVADA, COLO. is the oldest and largest breeder of thoroughbred S. C. Rhode Island Reds in the West. Our stock is line bred, from selected heavy laying type for seventeen years. Eggs for hatching, $12 per 100, $5 for 30. Send for catalog and price list of stock and baby chicks.

HARRISON'S FAMOUS, "EXHIBITION EGG strains." single and Rose Comb Reds. Show-winning, non-setting, developed layers. "Red breeding bulletins," and mating lists on request. Robert Harrison, The Red Man, Lincoln, Nebr., Station C.

WYANDOTTES.

PARTRIDGE WYANDOTTES—CHOICE STOCK and eggs. Fred Karre, Cotesfield, Neb.

GOLDEN LACED WYANDOTTE EGGS FOR hatching. Wm. Schreiner, Exeter, Nebr.

WHITE WYANDOTTE EGGS 15 FOR $1.50. Post paid; 100, $6. Angie Archer, Grenola, Kansas.

COLUMBIAN WYANDOTTES, STOCK AND EGGS in season; also fancy pigeons. J. J. Pauls, Hillsboro, Kansas.

WHITE WYANDOTTES — HEAVY LAYING strain, eggs $2 per 15, $7 per 100, prepaid. H. M. Savery, Cedar, Kansas.

COLUMBIAN WYANDOTTE EGGS, FROM HIGH class, free range stock; 15 eggs $2. Orvel Sharits, Route 5, Newton, Kansas.

SILVER WYANDOTTES. HAVE A FINE GOOD cockerel left; eggs, yards Nos. 1 and 2; $5 for 15; No. 3, $5 for 50. M. B. Caldwell, Brougbton. Kansas.

WHITE WYANDOTTE EGGS FROM LARGE bone, 7 to 8 lbs. hens, 8c each in lots of 30 or more. Wm. A. Draves, Lemoyne, Keitb Co., Western Nebr.

SILVER WYANDOTTES; WON BLUE IN 8 State Shows. Cockerels, $3, $4, $5; eggs $3; two settings, $5, parcel post prepaid. Free mating list. Chas. David Flanders, Springhill, Kansas.

ANCONAS.

APPLETON ANCONA BARGAINS—GET THE best at reduced prices. Eggs after May 15th, 10c each, $8 per 100. Cbix, 25, $6; 50, $11; 100, $20. Exhibition eggs, 25c eacb. Exhibition chix, 40c each. Yearling hens, $3; 2-year-olds, $2.25. 8 to 10 weeks pullets now ready, $15 per dozen. Order today. Appleton Poultry Farm, Box D, Rocky Ford, Colo.

SUNNYSIDE EGG BRED S. C. ANCONAS—THE world's greatest egg machines; they hold the world's record for egg production. Do you raise chickens? Then why not raise the best. Our Anconas are from the best egg-producing strain in the world. We have culled and reculled our flocks until only the best are left, so you may be sure they have the egg qualities bred into them. 90 per cent fertility guaranteed. Exhibition pens, $5 per 15; pens of selected layers, $10 per 100, $2 per 15; order your baby chicks now, a big hatch April 9; Chicks, $20 per 100; 25c each for 50 or less. Mrs. J. B. Shenk, La Junta, Colo., Box L, R. F. D. 2.

ORPINGTONS.

HIGH CLASS BUFF ORPINGTON EGGS FOR hatching. Winter laying strain, $2.50 for setting of 15, $6 per 50, $10 per 100. Good batch and satisfaction guaranteed. Mrs. J. W. Lee, Bridgeport, Neb.

BUFF ORPINGTON—IN A LARGE CLASS, I won more firsts at this year's Kansas State Show than all others combined. Eggs for hatching from choice matings at $3.00 up. Write for ist. Carl W. Moore, Topeka, Kan.

MINORCA.

SUYDAM'S SINGLE COMB BLACK MINORCAS. Few choice cockerels at reduced prices. Eggs for hatching. Write for prices. H. R. Suydam, 4500 Bryant st., Denver, Colo.

BLACK MINORCAS, BUFF ORPINGTONS, EGGS, chicks. Frank A. Agnew, Southside, Omaha, Nebraska.

SINGLE COMB BLACK MINORCA EGGS, (Pape's strain), excellent layers. Hans Jurgenson, Overton, Nebraska.

LANGSHANS.

PRIZE WINNING BLACK LANGSHAN EGGS $2 setting. Winter laying strain; all first and second prizes County Fair. First prize Nebraska State Fair. R. Montgomery, Dennis, Kansas.

BLACK LANGSHANS, FARM RAISED. EGGS, 15, $1.50; 100, $8; chix, 20c. Mrs. S. W. King, Solomon, Kansas.

BRAHMAS.

PUREBRED LIGHT BRAHMA EGGS, $2 FOR 15, $10 per 100. Baby chicks 25c each, postpaid. C. S. Holtzinger, Ellis, Kansas.

SETTINGS FROM THOROUGHBRED, LIGHT Brahmas. Greatest of winter layers. Prices reasonable. E. Grosser, 2240 Perry, Denver, Colo.

HAMBURG.

SILVER SPANGLED HAMBURG EGGS, CHICAgo, Kansas City, St. Louis, Denver, Lincoln, Wichita, Dallas, Oklahoma City winners, $3 per 15; $5 per 30. Roland Talbott, Waukomis, Okla.

TURKEYS.

THOROBRED MAMMOTH BRONZE TURKEY eggs, $3 per 10, $25, 100. Everett McKim, Lamar, Colo.

TURKEY EGGS FROM 16 TO 20 POUND M. B. bens, large bone, 50c each. Wm. A. Draves, Lemoyne. Keith Co., Western Nebr.

SEVERAL VARIETIES

S. C. R. I. RED EGGS, $1.25 SETTING, $7 hundred. R. C. White Leghorn eggs $1 setting, $6 hundred. Harry Knoll, Portis, Kansas.

BUFF ORPINGTON DUCK EGGS, $2.00, 13; 26, $3.50; 50, $6.50. White Rock eggs, $2.00, 15; $10, 100. Mrs. Chas. Snyder, Effingham, Kan.

MODLIN'S POULTRY FARM, LARGEST IN THE West. Hatching eggs, free circular. Write today. Thirty best varieties. Route 7, Topeka, Kansas.

CLAY COUNTY POULTRY AND PET STOCK ASsociation, 100 members. All breeds and varieties. Directory free. Sec'y. H. L. Boge, Harvard, Neb.

EGGS FROM SELECTED PENS; BUFF ORPINGtons, and Bradley Barred Rocks, $3 per 15; $5 per 30. Choice cockerels for sale. Archdale Farm, Fremont, Neb.

BUFF ORPINGTONS AND SILVER SPANGLED Hamburgs. Orpington eggs $7 hundred, $1.25 setting. Hamburg $1.50 setting of 15 eggs. Leslie Chrestenson, Route A, Akron, Colo.

BUFF LEGHORNS, RHODE ISLAND REDS— best layers on earth. Headquarters for cockerels, baby chix; hatching eggs. Write us your wants. Champney, 2057 South Broadway, Denver.

COLUMBIA HATCHERY—WE CAN SUPPLY you with any quantity of Baby Chicks. We have 14 varieties including all leading breeds. Write for our prices, you will save money. P. O. Box 1102, Denver, Colo.

YOU BUY THE BEST CHICKS FOR THE LEAST money, from the Colwell Hatchery, Smith Center, Kansas. 150,000 to be shipped everywhere; 18 cents each, 500 for $89; guaranteed alive or replaced free.

SAVE 33 PER CENT ON YOUR CHICKEN FOOD bill with the use of our Sanitary Poultry Roost We guarantee to kill all lice and mites within two weeks or money refunded. Ford and Thurston, 2531 Fairfax St., Denver, Colo.

BABY CHICKS—BARRED AND WHITE ROCKS, Reds, Buff Orpingtons, White Wyandottes, Anconas, White, Buff, Brown Leghorns, 18 cents. Single comb black Minorcas, Light Brahmas, 20 cents, prepaid. Live delivery guaranteed. Kansas Poultry Company, Norton, Kansas.

YOUNG'S 265 EGG WINTER LAYING STRAIN single comb white Leghorn eggs, 15, $1.50; $7 hundred. Money makers. Prize winning Partridge Wyandotte, Premier mahogany stain, eggs, 15, $2; hundred, $8. Hens cleared $4.27 eacb last year. E. N. Montgomery, Dennis, Kansas.

IMPROVE THE FARM POULTRY AS YOU DO your cattle and hogs. The farmer is beginning to realize that poultry, scientifically bred to egg production, improves the farm flock and increases his profits in these times of dollar eggs. Look abead a year. You probably need new poultry blood this year and will buy a cock bird to furnish it, but for next year—buy Harr's baby cbicks now. Your new blood will cost you nothing. For the price of one good cock I will sell you 100 baby chicks from heavy egg producing stock. Buy these chicks now and next fall you will have plenty of fine cockerels for your own use; also you will have several pullets and the money you can realize on your surplus cockerels will pay the entire expense feed and all. I can offer you ten breeds as follows: Rhode Island Reds, White Leghorns, Barred Plymouth Rocks, Black Minorcas, White Orpingtons, White Plymoutb Rocks, Wbite Wyandottes, Buff Orpingtons, Buff Plymouth Rocks, and Anconas. Even tho my flocks contain many prize winners, I can offer chicks at the following prices: Twenty-five chicks, $6.25; 50 cbicks, $12; 100 chicks, $22; 500 chicks, $105; 1,000 cbicks $200. Order direct from tbis ad. Full live delivery guaranteed by Parcel Post. I ship by Parcel Post, special delivery and will guarantee live delivery of every chick. Can make shipment within two weeks after receiving order. Send 25 per cent cash with order and balance few days before shipment. Dean Harr, Box G 502, Wichita, Kansas.

PET STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

RUNTS PIGEONS FOR SALE. JOHN KRANZ, Box 332, Winnemucca, Nevada.

ADDITIONAL CLASSIFIED ON NEXT PAGE.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HOGS

BIG TYPE POLANDS—SPRING PIGS FOR SALE at weaning time. Correspondence solicited. Gad Barney, Haswell, Colo.

REGISTERED DUROC JERSEYS—BIG TYPE, choice quality sows, gilts, and March pigs. F. W. Ruppenthal, Lucas, Kan.

FOR SALE—REGISTERED BIG TYPE DUROC Jersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

FOR SALE—REGISTERED DUROC JERSEY pigs of Col. and Orion Cherry King breeding; prices reasonable. Geo. S. Turner, Canon City, Colo

FOR SALE—THREE DUROC JERSEY SOWS, bred to a son of the Grand Champion at Denver, 1919. Four young boars and one yearling boar. Roy E. Dickson, Route A, Calhan, Colo.

REGISTERED BIG TYPE DUROC JERSEY hogs. We are now taking orders for boars and gilts of March farrow for May and June delivery. Have one fall boar left. All sired by Orion Cherry King 15th, and J.. O. D. Joe Orion, out of the best berd sows. Write for prices. Money back if not satisfied. J. O. D. Ranch, Aroya, Colo.

I HAVE NOW FOR SALE THREE OF THE finest Registered Duroc Jersey Gilts you ever saw, farrowed last July. They were sired by the largest boar for his age, at the Pueblo State Fair, and they have produced some prize winners at the Pueblo and Denver fairs. There are only three of these left, so write quick. J. N. Caldwell, Willow Grange Farm, Littleton, Colo.

CATTLE

FOR SALE—3-YEAR-OLD REGISTERED AYRshire bull. T. H. Dillon, Jr., Bethune, Colo.

FOR YOUNG CALVES, WRITE TERWILLIGER, Livestock Exchange, 289 Lake St., Milwaukee, Wis.

FOR SALE—125 GOOD GRADE ANGUS COWS and heifers, also 50 steers, ones and twos. Buford Hargove, Ovid, Sedgwick Co., Colo.

FOR SALE—FOUR REGISTERED HEREFORD Bulls, yearlings and well grown. Will make attractive price on them if taken soon. Ralpb Miller, Manitou, Colo.

REGISTERED HEREFORD BULLS—THIRTY bulls 12 to 24 months old, of the best Anxiety breeding, hardy and in good condition, with best of bone and ready to go on the range. One 2-year-old bull, full brother to champion cow at Denver, and a 5-year-old bull, the sire of most of the above. Priced for a quick sale. J. O. D. Ranch, Aroya, Colo.

COYOTE HOUNDS.

FOR SALE—THREE EXTRA GOOD COYOTE hounds. Guaranteed. Address Chess Ingram, Spivey, Kan.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

SUDAN GRASS SEED. HUNDRED POUNDS, $18. Sacks free. Is pure, Colorado grown stock; high germination. Long Seed Company, Boulder, Colorado.

GOOD CLEAN RED AMBER CANE SEED $2.20 per 100 lbs., sacked F. O. B. Lamar, Colo. Satisfaction guaranteed. S. F. Webb, Utleyville, Colo.

SEED BARGAINS—ALFALFA, $21.00 CWT.; Timothy, $12.00; Amber caneseed, $2.70; orange or red amber caneseed, $3.00; sumac or sourless caneseed, $3.50; white caneseed, $3.50; Schrock kafir sorghum, $3.75; Siberian millet, $4.00; German millet, $5.00; common or western millet, $3.50; hog millet, $4.50; barley, $3.50; White Sweet Clover, $30.00; Red Clover, $45.00; alsike, $30.00; kafir, $3.00; feterita or milo maize, $3.50; Reid's yellow dent seed corn, $7.00; Boone county white or silver mine, $7.00; Bloody Butcher, $7.50; calico, $8.00; sudan, $13.50; red top, $14.50; all of the above prices are by the hundred, sacks free, satisfaction or your money back. Order now before another advance. We are right where the seed grows, and buy direct from the producer and sell to the consume. You save 20 per cent in dealing witb us. We ship from several warebouses and save you time and money in freight charges. Liberty bonds accepted as par; we allow a 3 per cent discount on 500 pound orders of one kind of seed. Get your order in now while our stocks are complete. If our seeds do not please you, all you bave to do is to return them to us, and we will refund every cent you sent us, together with freight charges you have paid out. You can't lose a cent in dealing with us. No orders taken for less than 50 pounds. Meier Seed Company, Russell, Kansas.

STRAWBERRY PLANTS.

FOR SALE — PROGRESSIVE EVERBEARING strawberry plants. Kellog strain, $1.50 per 100; $12 per thousand. Blakeland Farm, Littleton, Colo.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—IMPROVED 320-ACRE STOCK and farm ranch. Justus Gray, Purcell, Colo.

FOR SALE—IMPROVED 480 ACRE STOCK AND farm ranch. George Wortham, Neiber, Wyo.

WANTED—TO HEAR FROM OWNER OF FARM for sale. Mrs. W. Booth, H. P. Sta., Des Moines, Iowa.

IF YOU WANT TO SELL OR EXCHANGE YOUR property, write me. John J. Black, 33 St., Chippewa Falls, Wis.

CALIFORNIA FARMS NEAR SACRAMENTO FOR sale; easy payments; write for list. E. R. Waite, Shawnee, Oklahoma.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

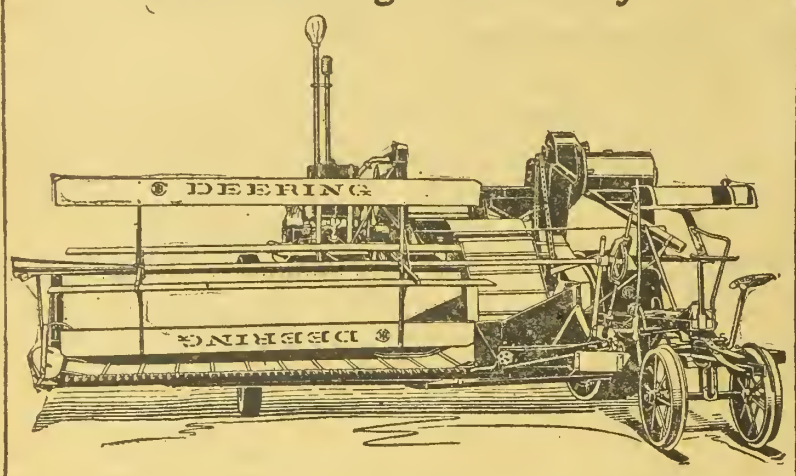
IRRIGABLE FINE FARM LANDS—HOW MUCH do you want and what terms? Improved or unimproved? Railroad Farm Bureau, San Antonio, Texas.

FARM AND CATTLE RANCHES—CHOICE LIST. If interested call or write F. E. Wrockloff, Merchants Bank, Seventeentb and Curtis Streets, Denver, Colo.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description, location and casb price. James P. White, New Franklin, Mo.

REAL ESTATE WANTED—SELL YOUR PROPerty quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., Dept 11, Lincoln, Nebr.

"Vest-pocket Edition" Combines—Condensed Volumes of Harvesting Efficiency



ON the broad, level benchlands of Montana, 'midst the wide sweep of the Big Bend Country in Washington, out on the undulating plains of Oregon in the eastern shadow of the Cascades, and away beyond the Deschutes, in Idaho, Utah, Colorado and California you will find **Deering** and **McCormick Harvester-Threshers** saving crops and labor.

These are the handy, vest-pocket edition combines—condensed volumes of harvesting efficiency—that cut, thresh, clean, and bag the prime ripe grain as a one-unit operation Because of their snug compactness and comparatively light weight **McCormick** and **Deering Harvester-Threshers** are adapted to use in rolling country just as well as on the lowlands and plains where the power-consuming, high-priced giant combines roar through the dusty fields.

McCormick and Deering Harvester-Threshers are two-men outfits, require only from 8 to 12 horses or a Titan 10-20 tractor for power, cut 9-ft. swaths and have capacities of from 15 to 20 acres a day. Can be used to excellent advantage as individual threshers for stack or shock threshing—profitable custom work.

Your name and address along the margin of this advertisement, mailed to one of the branch houses listed below, will bring you complete descriptive catalog.

INTERNATIONAL HARVESTER COMPANY
OF AMERICA
(INCORPORATED)

Billings, Mont. Cheyenne, Wyo. Denver, Colo. Helena, Mon.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

The Toll of the Blizzard

Ranchers and Stockmen who suffered financial loss from livestock killed by the terrible April blizzards have the sincere sympathy of E. A. Stephens & Company. If you are among the number, there is one way that you can get back a part of the money you have lost. This is by skinning every dead animal and sending the hide or pelt to Stephens of Denver.

Don't let hides or pelts go to waste. The market is extremely high. Cattle hides, horse hides, and sheep pelts bring big money.

E. A. Stephens & Company have a reputation throughout the west for honest dealing. In the present crisis, they will give you the highest market prices, based on fair and correct assortment. Don't delay. Ship now, and get an early check to help cover your losses.

Write for our new folder—just off the press. It contains complete directions for skinning cattle; the latest market quotations on hides and pelts, and other valuable information. Sent FREE on request.

E. A. Stephens & Co.
233 Stephens Building
Denver, Colo. U.S.A.

FARMS AND RANCHES.

FOR SALE—RANCH, 120 ACRES IMPROVED, 6-room house, large barn, fine orchards, first-class water right. For particulars write Peter Hansen, Grand Valley, Colo.

320-ACRE FARM FOR SALE CHEAP—6 MILES south of Fowler in Otero county, Colo. All good land; 40 acres has been in crop. Price, $12.50 per acre, one-third cash. The Irrigated Farms Mortgage Co., Cooper Bldg., Denver, Colo.

LANDS IN NORTHEASTERN NEW MEXICO, $15 to $30 per acre, producing excellent crops of wheat, oats, corn, kafir, beans, alfalfa, fruits, vegetables. Great dairying and stock raising section. Cheap grazing lands. Healthful climate, ample rainfall, altitude 5,200 feet. More farmers needed. Lands advancing in price with increased farming and population. For free illustrated booklet address Earle G. Reed, Agricultural Agent, Colorado & Southern Railway, Room 713, Railway Exchange Bldg., Denvere, Colo.

STOCKMEN ATTENTION—My beautiful modern 10-room home, completely furnished, is now offered for the first time. All in splendid condition, large roomy porches, high and sightly location, fine lawn, beautiful shade, large barn and garage for several cars, grounds 125x150 feet, sewer connections all in and all special improvement taxes paid. Will consider an exchange for good stock ranch of either the same or greater value and pay cash difference. This is the best residence in Littleton, Denver's best suburb. Owner, P. O. Box D, Littleton, Colo.

COME TO MOFFAT COUNTY—NO HOT WINDS, tornadoes nor crop failures. Good well water 10 to 30 feet; springs on many ranches; deep rich soil; free range in National forests, fence posts, timber and saw mills; excellent schools, the one at Craig ranking in the highest class in the state. Wheat with good farming yields 20 to 45 bus., alfalfa yields well without irrigation. An ideal grain and stock country. Fine improved land, $12 to $40. Come now and take advantage of the rise in prices which is just beginning. Full information sent. Craig Realty Co., Craig Colo.

ATTENTION STOCKMEN—WE HAVE TWO stock ranch bargains. Just what you are looking for; each ranch comprises 320 acres deeded land with substantial improvements and large acreage under irrigation, and in alfalfa, timothy, clover hay, unlimited outside free range, with 4,000 acres of leased land under fence for fall pasture. These ranches are located three miles apart, 125 miles from Denver. Good shipping point, big money makers. Prices $12,000 and $13,600 on good terms. See us at once for these. Reynolds, Covey & Reynolds, 625 Exchange Bldg., Denver, Colo.

PLOWING CONTRACTS.

WE HAVE A NUMBER OF CUSTOMERS WHO want plowing contracts. They have our Heavy Duty Leader Tractors and Oliver Mouldboard and disc plows as well as tandem disc harrow and packer pulverizers and will do you good work. What have you to do, and what are you willing to pay? Write us fully. John Thams & Son, Distributors, Tractors and Farm Machinery, 1434-44 Wazee St., Denver, Colo.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

RED CEDAR SPLIT FENCE POSTS. GUARanteed full size and A-1 quality. You pay after unloading. Send for booklet and prices delivered your station. Kirk Co., Box 1138-S Tacoma, Washington.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

INVENTIONS.

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

TYPEWRITER

GOOD TYPEWRITER FOR SALE CHEAP—FREE trial, easy payments if wanted. Write Bertha Payne, Shawnee, Kansas.

MILKING MACHINE.

FOR SALE—EMPIRE MILKING MACHINE, NO. 3 pump and two double units, practically new, only in use five months. Will take $200. Joe Bergamo, Malachite, Colo.

TANNING

LEATHER TANNING RECIPES. ONE FREE guaranteed cheap way. Agents wanted. R. N. Gilley, Carlton, Texas.

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

COFFEE.

TRIAL ORDER FRESH ROASTED COFFEE, 3 pounds, $1.00 postpaid. Satisfaction or money refunded. Write for special prices in quantities. Alvin Brauer, Beeville, Texas.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

BOOKS.

FUNNIEST BOOK IN PRINT. SEND 25 CENTS for "The Diary of a Doctor's Son." Pacific Book Company, 7036 Holmes Avenue, Los Angeles, California.

GROCERIES, MEATS, FENCING, ROOFING.

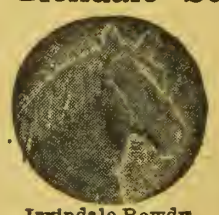
SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

Livestock Field Notes.

The Pahgre Valley Ranch at Montrose, Colo., is offering an excellent opportunity to dairymen to get a good herd sire at a reasonable price. They are selling off some of their yearling bulls that were sired by Sir Johanna Bess Segis. Read the ad in this issue.

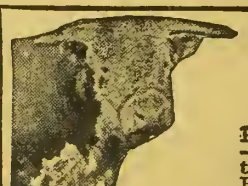
If in need of advice, ask Western Farm Life Service Bureau.

Glendale Stock Farm



Irvindale Rowdy Grand Champion Belgian Stallion Chicago, 1917, Denver, 1918 and 1919

Breeders of
BELGIAN HORSES and POLLED HEREFORD CATTLE
Young Stock Always for Sale
J. D. BRUNTON, Aspen, Colo.



Registered Hereford Cattle

BEAU ASTER Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER
Holyoke, Colo.

Wallie Farm Registered
HOLSTEINS

Five excellent A. R. O. records made by two-year-olds in past two weeks. More to follow.
Herd headed by
King Johanna Cedarside Pontiac
One of the best individuals ever sired by King Segis Pontiac Count "Marvel of Sires."
Bull Calves and a Few Heifers For Sale.
W. G. Foster, Owner, 4800 So. Penn. Phone Englewood 122, Denver.

Douglass Holsteins
FOR SALE.
5 Young Registered Holstein Bulls. Three of these were sired by the son of my $5,000 Penrose bull, Johan Duchess DeKol Lad, sire of world's record heifer. All these young bulls, excepting one, are out of tested 2-year-old heifers running from 22 lbs. down to 15 lbs.
All good individuals—buy one, and raise the quality of your herd.
Write or call.
Mrs. R. G. DOUGLASS
Sanborn Ranch Rush, Colo.

Registered Breeding Bulls and Heifers
HEREFORDS
SHORTHORNS
Young sctock of both sexes for sale at all times. Our sales yard is located within two blocks of The Denver Union Stock Yards. We are pleased to show our stock at all times.
THE LOWELL PUREBRED CATTLE CO.
Union Stock Yards, Denver.

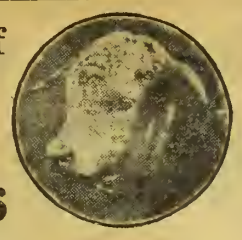
REGISTERED
DUROC JERSEY HOGS
BRED GILTS FOR SALE.
R. C. VAN SCOY & SON
Highland Sta., Route 5. Denver
Phone Arvada 105-R-2.

COL. H. C. JENNINGS.
Purebred Livestock
AUCTIONEER
Also conduct Sales of Real Estate.
534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

AM TAKING ORDERS NOW FOR SPRING PIGS.
Also a good March Boar left—sired by First Prize Junior Yearling at Iowa State Fair.
AUGUST F. BORGMANN,
R. 1, Box 124, Longmont, Colo.

Forest Glen Shorthorns
We are offering some medium-priced cows and a few choice bulls at attractive prices.
Cornforth Live Stock Co.
ELBERT, COLO.

The Hereford Corporation of Wyoming
Box 876, Cheyenne, Wyoming



Registered Herefords

We Offer For Sale

3 Loads Coming 2-Year-Old Bulls
2 Loads Coming 2-Year-Old Heifers

And can also take care of any breeder who wants a few good bred heifers and cows.

Denver office
406 Live Stock Exchange Bldg.
RAYMOND S. HUSTED, Mgr.

High Class Jerseys

The demand for Jerseys has become so persistent that our Mr. Dixon is now in the east to get another car load. We hope soon to be able to supply the demand.

Remember we had the Grand Champions at the Denver Show, in fact, all the Championships.

Only one bull of serviceable age left, but have some corking good calves.

ALSO SOME EXTRA GOOD BRED GILTS.

McCLENAHAN & DIXON, Greeley, Colo.

Edbrooke Durocs

REGISTERED
Big Type Duroc Jersey Hogs
Defender Boars *Defender Sows*

DENVER SHOW, 1920 I WON
First Prize Junior Yearling Sow
Second Prize Senior Yearling Sow
The Only Classes Shown

GREEN ACRE FARM

Defender Breeding H. W. J. Edbrooke, Prop. 6th & Wadsworth, Denver

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
JOHNSTOWN, COLO.

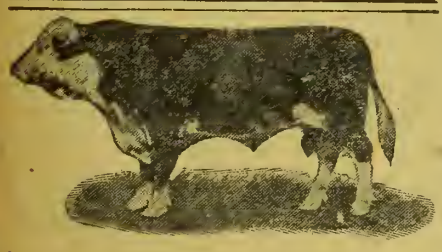
JAMES PONTIAC DEKOL ORMSBY

Young Bulls For Sale

By SIR JOHANNA BESS SEGIS, our herd sire. On account of crowded condition of our calf barn, we are offering several of these bulls at very low prices.

The bull pictured above is out of a 20-lb. 2-year-old daughter of Sir Rigtje of Pinehurst, who is the sire of a number of 30-lb. daughters. This bull is one year old, and we are offering him for $200.

The Pahgre Valley Ranch,
MONTROSE, COLO.



Verdun Fairfax, 547803.
FOR IMMEDIATE SALE.
Six young bulls of Fairfax breeding, $300 to $500. Also 2 choice herd bulls, and Fairfax Heifers in beginners herds. All stock disease free, and guaranteed.
Prompt Attention to Inquiries.
SNEFFELS LAND & CATTLE CO.
RIDGWAY, COLO.

Facts in BLACK & WHITE

Purebred Holstein Cattle in the North West

The North Dakota Farmer recommends Holsteins and reports: "The United States Government and the expriment station when selecting cattle for the breeding circuit at New Salem chose this breed as being the best adapted to conditions." Holsteins are strong and healthy and do well in any climate. On account of their great yield they are the most economical producers of butterfat.

Send for Free Illustrated Booklets. They contain valuable information for any Dairyman.

The Holstein-Friesian Ass'n
186 Hudson Street
BRATTLEBORO, VERMONT

ALWAYS POPULAR

A well known northwestern ranchman, addressing a livestock meeting in March said: "We have heard a lot of so-called experts say that there is no such thing as a dual purpose cow, but everyone knows that the Shorthorn cow that carries a liberal flesh covering and gives a liberal flow of milk is the most profitable and most popular cow on the farms and ranches of this country."

Looking through a western herd an observer noted several cows ranging from 1,800 to 1,900 lbs. in weight, big, fleshy, beefy cows, yet their milk records range from 8,000 to 12,000 lbs. per year each.

Shorthorn steers continually top the leading beef markets.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION,
13 Dexter Park Ave. Chicago, Ill.
Ask for Literature.

DeWITT HEREFORDS

HERD BULL—MISCHIEVOUS JR., by THE HEIR

His dam is Mischievous 3rd, a full sister of BEAU MISCHIEF and the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

L. G. Davis Herefords

ANXIETY BRED

For Sale—3 cars of registered Anxiety Bred Open Heifers in lots to suit purchaser. Can be seen at my Wynnewood ranch six miles from Denver.

WE HAVE A FEW HIGH CLASS YEARLING BULLS FOR SALE

L. G. DAVIS, Saratoga, Wyo.
Or Wellington Hotel, Denver

Shorthorns That Milk

Victoria 228667

R. of M.—15,175 Lbs., 546.3 Lbs. Butterfat. Class A. Only a few cows of this breed exceed this record in Class A official test. Bulls and Heifers for sale at Reasonable Prices.

The Pine Valley Dairy and Farms Company
Seeley G. Rose, Manager. COLORADO SPRINGS, COLO.

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.
C. F. Burke, Mgr. Pueblo, Colo.

Win-O-Dee Farm Holsteins

Herd Bull KING TWISK SEGIS PONTIAC 182200.

This sire's two nearest dams have a record of 35.38 lbs. butter from 733 lbs. milk in seven days. The average record of his six nearest dams is 34.38 lbs. butter in seven days. **Young Stock of Both Sexes For Sale.**

P. K. HUDSPETH, Pueblo, Colo.
Siloam Star Route.

MILKING SHORTHORNS.
All Cows Officially Tested. 125 in Herd.
Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.
THE BONVUE FARMS CO.,
Stockyards, Denver, Colo.

MILK RECORDS

Do Not Replace Straight Bates Shorthorn Blood FOR

Straight Bates Shorthorns are the "foundation source" of the Milking Shorthorns of England and America. The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

For Sale --- Registered Shorthorn Calves

EITHER SEX—6 WEEKS OLD—$50.

The mothers of these calves have three crosses on top of their pedigree which trace to Choice Goods, the St. Louis World's Fair Grand Champion.

The sire is a grandson of the famous bull March Knight.

Your Chance to Get Some Real Shorthorn Blood.

OTTO RAMSTETTER, Golden, Colo.

WILLIAM UPP

Livestock Auctioneer

Purebred Hogs a Specialty.
DEER TRAIL, COLO.

FOR SALE.

Victorions Sensation 342521

Farrowed April 1, 1919. An outstanding big type boar, the best of breeding, and guaranteed to please.

WRITE US.

"DALYS DUROCS"
DALY & THOMPSON, Cambridge, Nebr.

REGISTERED
JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.

H. J. VAUGHN, KIRK, COLO.

Straight and Polled Shorthorn Cattle

Valentine's Last X12316 452005 at head of beef herd. Claywood White 427350at head of milk type.

STATE INDUSTRIAL SCHOOL
Golden, Colorado

Regist'd Holstein Bull Calves

Two Ready for Light Service.

Well grown, nicely marked from high producing dams. Sire, Western Sir Colantha Ascalon, he by Western Ascalon Champion Boy, a son of Colorado's Greatest Dairy Cow, and half brother to Colorado's Greatest Dairy Heifer. Write us.

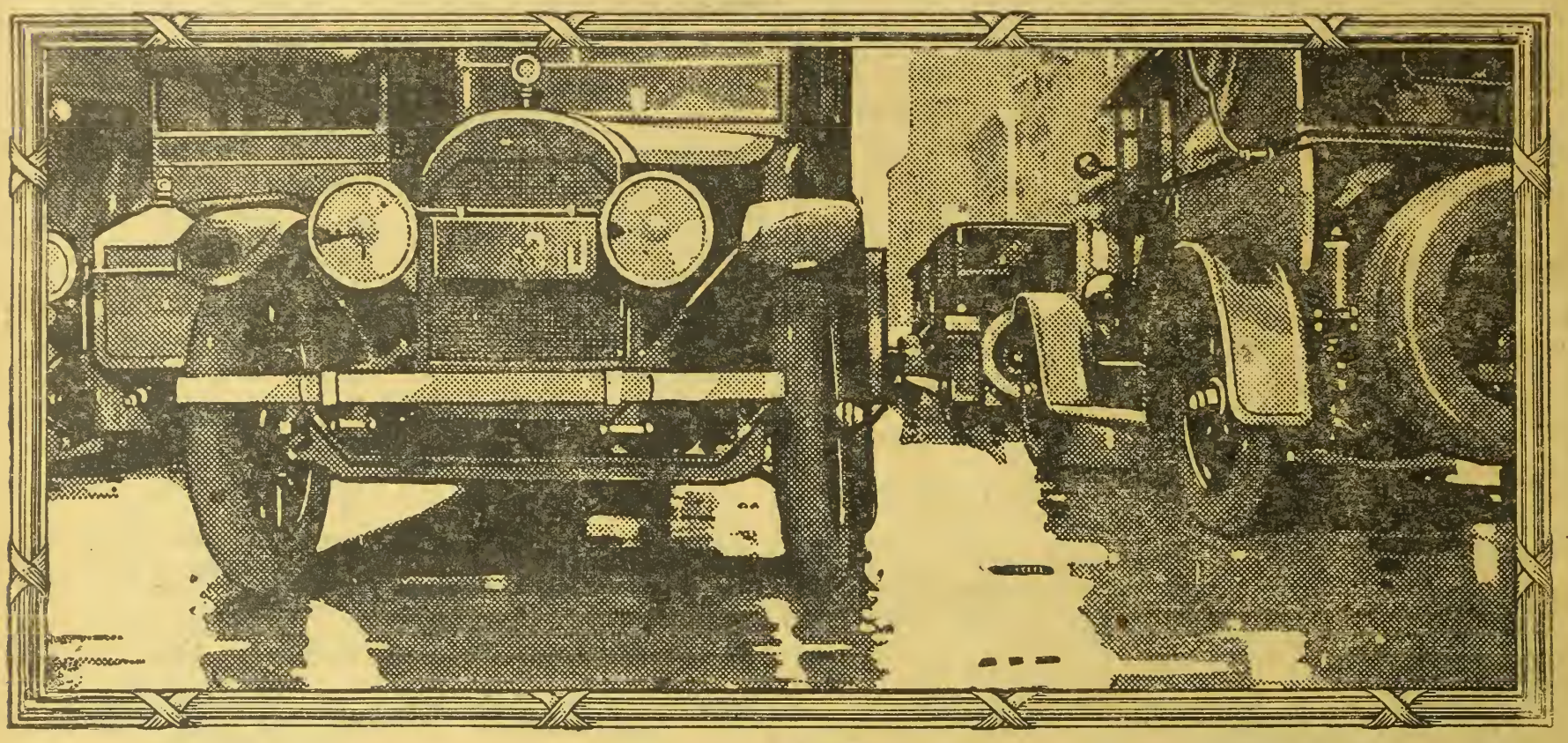
W. B. & E. M. DOWNS, Yuma, Colorado.

H. C. DENNIS, Auctioneer

FORT MORGAN, COLORADO

Registered Shorthorn and Jersey Cattle
Real Estate Sales Conducted. I can sell your real estate if it can be sold.
Wire at my expense for dates.
Phone: Res. Morgan 155J; Office. Morgan 15

You never get more out of your Tire than the Maker put in



The car in the foreground has a wheel out of line.

Few motorists realize that a displacement of only one degree has the same effect on a tire as if it was dragged 92½ feet in every mile.

New tires have been known to be completely stripped of their treads in 100 miles of running under such conditions.

STAND on a street corner some day and watch the motor cars go by. Every now and then you will see a motorist with two or three tires strapped on the back of his car, each tire of a different make.

A man afraid of his tires.

* * *

No matter how many precautions a man may take he will never get out of a tire *more* than the maker put into it.

If a tire is built to go a *limited number of miles* there is no reason why it should be expected to go any farther.

When it breaks down before it has gone the limit, there is no reason why an allowance should not be made to the buyer.

What intelligent buyers are looking for is *better tires*—not limited-mileage tires or conciliatory allowances.

And they are beginning to look behind tires to the *principles* on which they are built and sold.

* * *

Here is the principle which governs the production and sale of U. S. Tires: Build a tire as good as human skill can build it, and let *responsibility for quality* exceed every other consideration.

Seek out the new kind of tire dealer—the man who believes in quality and square dealing, who is putting the tire business on as sound a basis as any other retail business in his town.

Back of him stands every resource and facility of the United States Rubber Company—the oldest and largest rubber organization in the world.

U.S. Tires are built on a *quality* basis as fast as quality conditions will permit—*and no faster.*

And they are guaranteed free from defects in materials and workmanship for the life of the tire—*with no limitation of mileage.*

United States Tires

United States Rubber Company

Fifty-three Factories

The oldest and largest Rubber Organization in the World

Two hundred and thirty-five Branches

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UNIVERSITY OF ILLINOIS LIBRARY
MAY

WESTERN FarmLife

Vol. XXII. *Denver, Colorado, May 15, 1920.* *Semi-Monthly*

BARN ON RANCH OF C. V. OWENS, GREELEY, COLO. CEMENT STAVE SILOS HOLD SUCCULENT FEED FOR PEDIGREED STOCK.

How about your Tractor, Wagons, Plows, Harrows, Binders, Etc.?

A good protective paint coating keeps them tight and in good repair. Wear and rust begin at the surface.

A CAN OF

McPhee & McGinnity Co.'s

Wagon and Implement Paint

keeps the implements in good shape when you need them, prevents breakdowns and saves you time and money.

This Wagon and Implement Paint is a quick drying, hard and long wearing Enamel, in five bright, attractive colors. It is made especially for all kinds of farm machinery.

Paints, Varnishes, Stains and Enamels for the barns, silo, automobile, house, floors, furniture, walls, and every conceivable purpose.

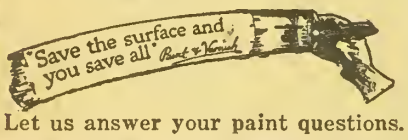
Ask your local dealer or write for Color Card and information

McPhee & McGinnity Co.

DENVER, COLO.
SALT LAKE CITY, UTAH

SUPER QUALITY

ZIP *SERVICE*



Let us answer your paint questions.

Best for Every Farm Use The Guarantee Proves It

Red Seal Dry Batteries

Under every condition, regardless of weather, and no matter how rough the going Red Seal Dry Batteries will keep your tractor running at par.

The Guarantee Protects YOU

Thousands of tractor owners will use no other! Best also for farm engines, autos, door bells, hand lanterns, telephones, etc. Study the label! Insist on genuine Red Seal Dry Batteries.

Ask Your Dealer

Under our plan, every dealer's supply of Red Seal Batteries is always fresh. Call for them by name. Ask your dealer also for our famous handbook for engine owners, free to users of Red Seal Dry Batteries.

Manhattan Electrical Supply Co., Inc.
New York—Chicago—St. Louis—San Francisco
Factories: Jersey City; St. Louis; Ravenna, Ohio

Peas All Summer.

While I write the snow is swirling around the corners in a blinding blast, and the heater is the center of attraction for the entire family; nevertheless, gardening time is fast approaching.

As peas are one of the first vegetables of early spring and my method of raising has proven very good indeed, I will "pass it on."

I make a deep trench or furrow in a well prepared seed bed on second year of sod breaking in which to plant them, covering over according to instructions, and cultivated well. I planted the vine variety instead of the bush, they grew like weeds and bloomed profusely. The nice fat peas were delicious, but as is usual with peas of any variety, after two or three pickings, the vines begin to fire near the ground.

"Well," I said to the children, "just look at that; I am going to try some sweet pea culture on these vines; I don't see why it won't work on one as well as on the other. I don't like this short season business; we are getting rather poor pay for seed and work."

Soon those pea vines were standing serenely green in a little ridge of freshly worked earth, all the dried part of the vine entirely under the ground. Day after day I visited the garden to watch results, nor had I long to wait. Almost immediately the vines seemed to take on a new lease of life, fresh blooms appeared and more new peas and more blooms. But after awhile the vines again began to fire and once more I drew up the soil around them. I kept this up and all summer long we picked peas and more peas, big, and tender in the nicest long pods, off those self-same vines I had planted in the early spring, keeping up the culture and allowing no weeds to grow. After all it was no more work than several successive plantings and less expense for seed.

These were raised on dry land and never once watered except from a natural source, the clouds. About the first of October there came a cold spell and I hurried out to the garden to cheat Jack Frost out of all I could. That day for dinner we once more feasted on new peas; the supply fell a little short of the usual way of serving—but there was plenty to make a delicious soup for four and we thoroughly enjoyed the novelty of eating homegrown fresh peas while the frost-laden autumn winds whistled around the house.

As we compared notes of that season in eastern Colorado with previous ones in Old Missouri, we decided in favor of the former for successful garden and crop raising, especially when the odds were against one. Never before had we put so much garden stuff in the cellar for winter use and that in spite of one of the worst hailstorms that ever visited eastern Colorado. It came about the first or second week in August. Everything was beaten leafless, beans, peas, beets, melons, squash—garden and fields were a sorry looking sight. I had been so proud of our prospect for plenty. The first, by the way raised on our new homestead, that at the sight of it all wiped out in a few minutes—I crumpled down in a limp, dejected heap and —(those who have had the same experience will understand)—cried like a baby. Of course, the children followed suit and their Dad—"knew this blamed country wasn't any good before he ever saw it." He, however, was not quite so sure of it when in about two weeks everything in the garden had grown new leaves and bloom, and the milo and kafir had put on a beautiful new green dress under their proudly waving heads that have peeped out of their covering after the storm.

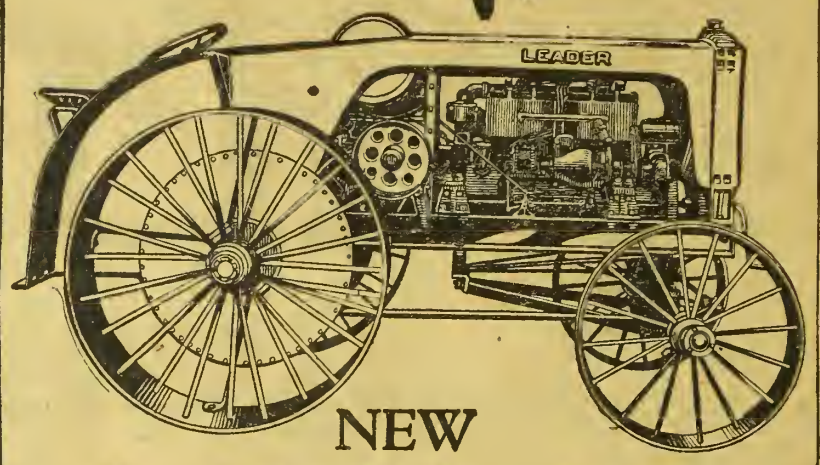
We had feed for the entire winter for several head of stock until grass came again and to spare as well as a well-filled cellar. Since then, experimenting different ways, I have learned many useful lessons in western methods, but the only improvement I have found on this way of raising peas is the use of pulverized manure after each hoeing—and watering (where one has the water) and this is a wonderful improvement; you can almost see them grow.

I can recommend this kind of pea culture to others with the full assurance that all who try it will be equally pleased with results.—FRANCES H. BROWN, Kit Carson, Colo.

Tractors proved a great help in removing snow from city streets during the big storm in April. But farm roads in northeast Colorado were closed to everything but horse traffic for some time.

If in need of advice, ask Western Farm Life Service Bureau.

A Hog for WORK



NEW

LEADER 16-32

TRACTOR

All power-farming requirements for years to come are met in this tractor of efficient, surplus power and enduring strength.

Kerosene—the cheap fuel—is used in the low-speed, trouble-proof Climax motor. Every bit of power is transmitted without waste

Temperature of motor is perfectly held in check even under the heaviest loads, and radiator, engine and pump are drained by one simple operation.

Enclosed Dirt-Proof Final Drive

Comfort and easy control are great LEADER features. No controls on the roomy platform. Large wheels and short turning radius contribute to easy operation.

There is a liberal use of ball and roller bearings, all parts are accessible, and the oiling system is completely automatic. Gears, etc., run in an oil bath—the only grease cups are on front wheels, one rear wheel and steering knuckles.

Strength—endurance—comfort—easy control: farmers and dealers at the national tractor show in Kansas City knew that the LEADER had these values and that here was a tractor of extraordinary merit.

Complete description and specifications are given in our new printed matter. *Write for it today.*

DAYTON-DOWD COMPANY

Builders of Four-Wheel and Crawler Tractors Since 1911

352 York Street, Quincy, Illinois

John Thams & Son

1434-44 Wazee St. Denver, Colo.

LEADER TRACTORS

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

Largest Circulation of Any Farm Magazine in the West

WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Published Semi-Monthly by The Farm Life Publishing Co., Denver, Colo. 1518 Court Place.

Entered at the Denver Postoffice as Second Class Matter

VOLUME XXII. DENVER, COLORADO, MAY 15, 1920. Number 10.

Hays Shows Beef Men How to Make Money

RESULTS OF EXPERIMENTS ANNOUNCED AT THE ANNUAL ROUND-UP

H. A. LINDGREN.

THAT the silo doubles the food nutrients of kafir in maintaining beef cattle.

That one acre of kafir ensiled with heads on is the equivalent of 2.58 acres used as dry fodder, including the heads.

That kafir ensilage minus the heads proved the most economical form in which it was fed, the crop yielding a cash income for the grain sold and leaving a succulent feed for the cattle.

That it does not pay to breed heifers too early, the three year breeding age developing the best offspring.

These are a few of the big things the western Kansas beef producers learned at the annual round-up on the Hays Experiment Station in April. In another year it is planned to extend an invitation to farmers from eastern Colorado to attend the round-up, as the problems worked out at Hays are applicable generally throughout the Plains region.

A Kansas gale did not keep the farmers away. The round-up was held this year on April 10. A heavy wind raged all day. In spite of this some 800 people attended.

The Hays Experiment Station is the center of attraction for the western Kansas farmers and stockmen. It is a plant that carries on experimental work in livestock feeding and management and in the production of forage crops suitable to western Kansas conditions. That they are making progress in this work is shown conclusively by the 100 per cent co-operation received from the farmers of the region. The work on the station has been in charge of Superintendent Charles R. Weeks for a period of years. He has been ably assisted by a corps of specialists and has applied the well organized machinery of the Kansas State Agricultural College at Manhattan in making the work more effective. Much of the credit for bringing the experimental data to a practical use on the western Kansas farm is due to Superintendent Weeks. He is not only a thorough executive, but he has the knack of interesting the farmer in applying the knowledge gained by the station to the individual farm, which in reality is what all our experiment stations should do.

Superintendent Weeks is now leaving the station to accept the secretaryship of the Kansas State Farm Bureau, where he will be able to apply his ability in a broader way. His place at the station has been taken by Roy Kent, a Kansas product, who comes well fitted to assume the responsibility of continued success of the station work and its application to the farmers' needs.

It is but fitting here to express appreciation of the work being done by the Kansas State Agricultural College, which institution is the parent of the Hays branch station. This great institution with its corps of 500 able workers is under the able leadership of President W. M. Jardine, who is widely known all over the west and loved for his genial personality and his ability in promoting agriculture. With him is associated Dean and Director F. D. Farrel, who is of the same caliber and who also has been closely associated with the agricultural development of the west in a large way. The work of the Kansas institution is built upon the idea of practical application to the state's needs. And from the class of men turned out as graduates we know that it is succeeding wonderfully well.

A brief description of the Hays station will add interest to the report of the round-up. It consists of 3,600 acres of land representative of western Kansas conditions. Of this 1,000 acres is used for pasture. The station is one of the largest in the world. Western Kansas has been devoted largely to the growing of wheat, which has had a depleting effect on the soil. The station has gotten away from this system of farming and is demonstrating the value of livestock as the foundation. A large part of the feed needed is raised on the farm and consists of alfalfa, corn, kafir, wheat and other crops adapted to the section. It is interesting to note that some ten carloads of alfalfa was sold last season besides what was used. Sheep, beef cattle and hogs are the livestock handled. A separate unit is maintained for dairying purposes. In the raising of farm crops and in feeding these crops to the stock, it is the purpose of those in charge to demonstrate the best methods to employ and to record it in such a way that the information can be readily obtained for the use of the farmers. Both irrigation and dry land agriculture are practiced. Pure seed of the adaptable crops for the section is raised and sold to the farmers at cost. This alone offers a real service to the farmers.

One of the experimental lots at Fort Hays, Kan.

The idea of the round-up each year is one of the methods employed to carry the station results to the people. They gather at that time in large numbers to hear reports of various phases of the work. At the April meeting the cattle feeding experiments were reported.

Dr. C. W. McCampbell, professor in charge of the animal husbandry work at Manhattan, had charge of the experimental feeding work and explained the results. Dr. McCampbell's report of the experimental work was comprehensive. The first test reported was to show the comparative feeding value of an acre of kafir with the heads on and heads off in the silo and in the shock. Kafir is a leading crop in various parts of the semi-arid sections. Many cattlemen fail to realize the value of the silo in connection with feeding and maintaining their cattle. The experiment shows clearly the tremendous increase in food nutrients secured from an acre when preserved in a silo, over that secured when it is fed from the shock. These feeds were fed in addition to a small ration of straw and cottonseed cake in each case.

The Kafir Experiment.

Four lots of yearling heifers were used in this experiment, 15 heifers in each lot, the test lasting 90 days. The accompanying table tells the story.

Lot Number—	3	4	13	14
	Pounds.	Pounds.	Pounds.	Pounds.
Initial weight per heifer	614.0	629.3	622.7	602.0
Final weight per heifer	763.11	724.44	714.66	721.33
Total growth per heifer during test	149.11	95.14	91.96	119.33
Daily gain per heifer	1.656	1.057	1.021	1.326
Kafir silage (heads on)	30.00	.....	.....	.....
Kafir silage (heads off)	.....	30.00	.....	.....
Kafir stover (heads off)	.....	.....	25.43	.....
Kafir fodder (heads on)	.....	.....	.....	27.08
Straw	5.35	3.50	6.43	3.92
Cottonseed cake	2.00	2.00	2.00	2.00
Amount of kafir consumed in producing 100 lbs. of gain fed with a limited amount of straw and cottonseed meal.				
Kafir silage (heads on)	1811.6	.....	.....	.....
Kafir silage (heads off)	.....	2838.2	.....	.....
Kafir stover (heads off)	.....	.....	2490.7	.....
Kafir fodder (heads on)	.....	.....	.....	2042.2
Cash value of the kafir consumed in producing 100 lbs. of gain based upon kafir stover at $6 a ton and kafir grain at $1.50 a bushel:				
Kafir silage (heads on)	$8.93	.....	.....	.....
Kafir silage (heads off)	.....	$3.46	.....	.....
Kafir stover (heads off)	.....	.....	$7.47	.....
Kafir fodder (heads on)	.....	.....	.....	$22.43
Gain poduced per acre by kafir fed from the silo and from the shock with a limited amount of straw and cottonseed cake:				
Kafir silage (heads on)	635.74	.....	.....	.....
Kafir silage (heads off)	.....	285.02	.....	.....
Kafir stover (heads off)	.....	.....	129.53	.....
Kafir fodder (heads on)	.....	.....	.....	245.95

The data given in the table above indicates that:

1. One acre of kafir made into silage after the heads had been removed had a feeding value equivalent to 2.2 acres in the form of dry stover after the heads had been removed.

2. One acre of kafir made into silage with the heads on had a feeding value equivalent to 2.58 acres in the form of dry fodder with heads on.

3. One acre of kafir made into silage after the heads had been removed had a feeding value equivalent to 1.16 acres in the form of dry fodder with the heads on in spite of the fact that this kafir produced 30 bushels of grain per acre.

4. Kafir made into silage after the heads had been removed proved to be the most efficient form in which it was fed. With dry kafir worth $6.00 a ton ofter the heads had been removed and kafir grain $1.50 a bushel, the increase in the cost of producing 100 pounds of gain by the use of kafir in forms other than silage without the heads was: Dry kafir stover (heads off) instead of kafir silage without heads equals 116 per cent; kafir silage with heads on instead of kafir silage without heads euals 159 per cent; dry kafir fodder with heads on instead of kafir silage without heads equals 548 per cent.

5. The heifers in Lot 3 fed silage made of kafir with the heads on are fatter than is necessary or desirable and have made no more growth than the heifers in Lot 4, fed silage made of kafir from which the heads had been removed.

6. The effect of wintering on dry feed (Lots 13 and 14) and succulent feeds (Lots 3 and 4) upon pasture development will be noticed and reported at next year's meeting.

The Second Experiment.

The second experiment explained was that of cane silage compared with cane fodder for mature cows. In this test two lots of wet cows were used. One group was fed cane silage and the other cane fodder. They were fed for a period of 90 days. Cottonseed cake and straw were fed to each group. In this trial it required to make 100 pounds gain, 4,220 pounds of cane silage, as compared with 3,520 pounds of cane fodder. It must be considered here that the silage contains about 70 per cent more moisture than the dry fodder. In other words, it has been shown that an acre put in the silo produced as much gain as 2.4 acres of dry fodder. In this case the silo gave twice as much feeding value per acre as the dry fodder.

The third trial demonstrated the relative value of alfalfa hay and linseed cake as a protein supplement in a maintenance ration for mature cows. This experiment was conducted for the farmers who do not raise alfalfa and who want a substitute in the way of a protein feed. Or for those who have the alfalfa and may want to sell it and purchase a cheaper feed. As brought out in the report, the answer to both these questions depends on the market prices of these protein supplements. Each lot in this test were fed 30 pounds of cane silage daily. Lots 5 and 7 were given 11.63 pounds of straw and Lot 15, 5.64 pounds. Lots 5 and 7 were given 2 pounds of linseed or cottonseed cake, and Lot 15 was given 7.66 pounds of alfalfa hay. The gain in both lots was practically the same. The trial brought out the fact that 3½ pounds of alfalfa hay is as valuable as 1 pound of linseed or cottonseed cake. This ratio will prove a satisfactory one in determining the protein supplement to use.

The effect of methods of feeding and breeding upon the development of a beef cow and her offspring was next reported. This experiment has been in progress for five years, its main purpose being to properly develop a cow and her offspring at an economical cost of growth.

Lots numbered 1, 2, 15 and 16 were in this experiment, there being 20 cows in each lot at beginning of test, November 1, 1915, with the same number finishing in Lots 1 and 15, and 18 cows finishing in Lots 2 and 16. Age of all cows April 1, 1920, was 5 years. Lots 1 and 16 were on winter feed 1915-16-17 of roughage and grain. Lots 2 and 15 were on winter feed of roughage only in those years. In the winters of 1918-19 all lots were on roughage only. Summer feed during entire time of test for all lots was range grass. The table on page 21 shows the results.

Besides the reports on the experiments there were addresses by men prominent in the industry. Among them were Walter Joy, president of the Ellis County (Kansas) Farm Bureau; Ralph Snyder, president State Farm Bureau; Joe Mercer, secretary State Livestock Association, and Fred P. Johnson, manager of the National Western Stock Show of Denver.

The Kansas Livetock Association has one officer that many other states do not have. That is a market man stationed at the Kansas City market to look after the needs of the producer. He takes up all grievances of the shipper and assists in their adjustment. He studies the condition of the market with the idea of keeping the association members informed on the best practice and to assist them in learning of the re-

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Pulp, Tops, Corn Silage and Alfalfa Hay Compared

BEEF FEEDERS GET RESULTS OF TESTS AT FORT COLLINS

H. A. LINDGREN.

THE day selected this year to invite the cattle feeders of the state to the college to review the results of the year's feeding test was unfortunately a stormy one, so that there were few feeders present. However, the speakers braved the storm of April 17 and were there to take care of their part of the program. Among them were Mr. R. D. MacManus of Armour & Company; ex-Governor E. M. Ammons of Denver, Prof. Geo. E. Morton and E. J. Maynard of the Animal Husbandry Department of the College.

The experiment reviewed was the results of the second year's feeding of the same ration, with four main objects in view: First, to compare three ways of utilizing beet tops as a cattle feed, pastured, fed dry in lots and as beet top silage; second, to compare beet top silage with wet beet pulp and corn silage; third, to compare dried molasses beet pulp and wet beet pulp; fourth, to determine the value of corn silage and molasses. For use in this test 60 grade Hereford steers were purchased on the Denver market November 5, 1919. They averaged 860 pounds in weight at that time. They were divided in six lots and fed the first 40 days, from November 12 to December 22, on the following rations:

Lot 1—Wet beet pulp and alfalfa hay.

Lot 2—Beet tops, pastured in field and alfalfa hay.

Lot 3—Beet tops dried, hauled and fed in lot, and alfalfa hay.

Lot 4—Beet top silage and alfalfa hay.

Lot 5—Corn silage and alfalfa hay.

Lot 6—Alfalfa hay alone.

The weather conditions were quite severe for this first 40-day period, there being five distinct storms with heavy snowfall and low temperature. The beet tops used for silage were placed in a trench with alternative layers of clean straw.

The feed prices allowed throughout the test are as follows: Wet beet pulp, $2.50 per ton; dried tops, $7.69 per ton; beet top silage, $6.91. These figures based on an 8.5 ton per acre yield of green tops at $3.24. Corn silage, $11 per ton; beet tops pastured per acre, $10; beet molasses, $20 per ton; dried molasses beet pulp, $35; cottonseed cake, $80 per ton, and alfafa hay, $20 per ton. The cost of beet tops per ton was much higher than it would be in a normal year.

Report of 40-Day Period.

There were ten steers in each lot. Lot 1 gained 966.7 pounds, or an average daily gain of 2.42 pounds from a daily ration of 62.3 pounds of wet beet pulp and 15.5 pounds of alfalfa hay. It required 2,578.9 pounds of wet pulp and 639.81 pounds of alfalfa hay to put on 100 pounds of gain, at a cost of $9.62.

In Lot 2 the gain for the lot was 243.3 pounds, or .61 pounds per day from .012 acres pasture on tops and 13 pounds of alfalfa hay. In this lot it required 2.06 acres of beet top pasture and 2,137.3 pounds of alfalfa hay to put on 100 pounds of gain, and the cost was $41.97 per hundred.

Lot 3 gained 516.6 pounds for the period, or an average of 1.29 pounds daily per steer. They ate 18.5 pounds of beet tops dried and 15.6 pounds of alfalfa hay each day In this case it required 1,434.6 pounds of beet tops dried and 1,207.9 pounds of alfalfa hay to put on 100 pounds of gain, costing $17.59.

Lot 4 put on 623.3 pounds, or an average daily gain per steer of 1.56 pounds from a daily ration of 23.3 pounds of beet top silage and 18.1 pounds of alfalfa hay. It required 1,497.7 pounds of beet top silage and 1,163.2 pounds of alfalfa hay to put on 100 pounds of gain, the cost being $16.81.

Lot 5 gained 716.7 pounds, or an average daily gain of 1.79 pounds per steer. In doing this they ate 35.1 pounds of corn silage and 12.5 pounds of alfalfa hay each daily. It required 1,956.2 pounds of corn silage and 698.3 pounds of alfalfa hay ration, costing $17.74 to put on 100 pounds of gain. These results are worth studying for those who do not have access to beet pulp. Compare these figures with Lot 6, where the gain was 405.00, or an average daily gain per steer of 1.01 from 24.4 pounds of alfalfa hay. It required 2,409.9 pounds of alfalfa hay alone to put on 100 pounds of gain, which cost $24.10.

Some stockmen have argued that it did not pay to feed corn silage when compared with alfalfa hay alone. These figures are of interest in that connection. The same lots were placed on a 110-day fattening period following the above 40-day preliminary test. They were fed as follows:

Lot 1 received wet beet pulp 87.1 pounds, cottonseed cake 2.5 pounds, molasses 3.4 pounds, and alfalfa hay 9.2 pounds, from which they gained 2.31 pounds daily. The cost in this lot for 100 pounds of gain was $14.43.

Lot 2 was fed practically the same ration as Lot 1, but made a cheaper gain, it costing $13.50 to put on 100 pounds of gain. This difference in cost may be explained by the fact that in the preliminary period, this lot was fed on pastured tops and hay and made daily gains of but .61 pounds, and were consequently in a thinner condition when the last period started and utilized the feed to a slightly better advantage during the first end. However, the final cost for the two periods was in favor of Lot 1.

Lot 3 was fed an average daily ration per steer of dried molasses pulp 9.8 pounds, cottonseed cake 2.4 pounds, and alfalfa hay 12.5 pounds. Each steer gained 1.71 pounds daily. The cost per 100 pounds of gain was $23.09.

Lot 4 was fed a daily ration per steer of dried molasses pulp 6.6 pounds, cottonseed cake 2.3 pounds, beet top silage 21 pounds, and alfalfa hay 12.1 pounds, from which they gained 1.55 pounds. The cost per 100 pounds gain for this lot was $25.77.

Lot 5 received a daily ration per steer of beet molasses 3.4 pounds, cottonseed cake 2.5 pounds, corn silage 36.3 pounds, alfalfa hay 7.3 pounds. On this they gained 2.30 pounds at a cost of $17.71 per 100 pounds gain.

Lot 6 was given alfalfa hay alone, an average daily ration per steer of 24.2 pounds, making .82 pounds gain. In this case it required 2,944.1 pounds of alfalfa to put on 100 pounds of gain.

The financial statement for the entire test period shows a loss in each lot as follows: Lot 1, $34.03; Lot 2, $44.78; Lot 3, $59.90; Lot 4, $62.26; Lot 5, $40.70, and Lot 6, $61.62.

Mr. E. J. Maynard conducted this experiment and reported it. On account of lack of space the tables cannot be published complete. There is a great deal of valuable information contained in the report of this experiment and every feeder will find it worth his while to obtain a copy of the report from the Animal Husbandry Department of the college.

Conclusions.

Mr. Maynard's conclusions are quoted below and should be carefully read:

Wet Beet Pulp—Standard Ration for Comparison: Wet beet pulp rations are those in most common use by Colorado feeders, and we therefore use the ration fed Lot 1 as a basis of comparison for all other rations. No other ration has been found quite its equal, but the corn silage ration approaches it very closely. The value of wet pulp to the feeder depends on distance it must be hauled from the factory. At present labor prices the cost per ton increases approximately 35 cents for each mile hauled.

Beet Tops: Pastured in the Field—With bad weather conditions the cost of gain was abnormally high and there was a heavy loss of tops through being covered with snow, frozen and tramped in the mud. The success of this practice will depend largely on weather conditions.

Beet Tops: Dried and Hauled to Lot—The successful drying of the tops in the field will depend also on dryness of weather. It was found necessary to haul them in small loads as used to prevent their fermenting and rotting, and this cost of additional haul made them more expensive than beet top silage.

Beet Top Silage—Fed in limited quantities the beet top silage produced gains second only to the wet pulp and at a low cost considering the high price of tops, during the preliminary period. Fed in conjunction with dried molasses pulp, cake and alfalfa, the results were not as good, tending to show that it did not go with this combination.

Corn Silage—The corn silage ration comes nearest to the wet pulp ration in economy. The results indicate that steer feeding may profitably be carried on at points where wet beet pulp is not available. The question of the advisability of adding to a straight alfalfa ration is of especial interest in some sections of Colorado, particularly on the Western Slope, where a large number of cattle are being fattened at present on alfalfa hay alone. The rations in this and the following lot were planned to determine the replacement value of corn silage and other feeds when fed along with alfalfa hay.

The saving effected this year by adding corn silage is apparent, a little less than a ton of silage saving 1,712 pounds of alfalfa in putting 100 pounds of gain on steers.

Alfalfa Alone—This ration is made necessary as a check for Lot 5. Alfalfa hay fed alone has too narrow a nutritive ratio (1:3.9) to give best results. In other words, it contains too little of digistible carbohydrates equivalent in comparison to protein. It required 28 pounds alfalfa fed to steers for 1 pound of gain.

Dried Molasses Beet Pulp—The dry matter in dried molasses beet pulp did not prove as valuable as that in wet pulp and molasses when added to a ration of cake and alfalfa hay.

Dry matter required per pound gain:

Dried molasses beet pulp..5.3 lbs.
Wet pulp and molasses....4.9 lbs.

The requirement of cake was practically the same, but the dried pulp required 3.4 lbs. additional alfalfa.

Beet Molasses—When fed in limited quantities (from 3 to 5 lbs. per head daily) beet molasses has proven a valuable addition to the ration at present prices.

Practical Suggestions for Organizing Wool Pool

CO-OPERATIVE MARKETING BRINGS FAIR PRICES TO PRODUCERS

H. A. IRELAND, Agriculturist, Uncompahgre Project.

WITH any commodity, on any market, the quantity, quality and uniformity of the article offered for sale or sought for purchase are always potent factors in determining the price of the article. Dealers understand this and we have the common example of buyers bidding strongly for large lots of any commodity which possess quality and uniformity as compared with their demand for smaller lots lacking in these points; and sellers striving to offer to the market whatever they have for sale in such quantities and condition as to attract buyers' attention and desire.

If one article of farm production were sought especially to exemplify the above truth, perhaps none could be found to do so better than wool. The reasons for this are several, two of the more important being that: (1) There are large numbers of distinct grades of wool, ranging from "fine staple" used for the manufacture of fine worsteds or flannels, to "braid" used for making carpets and other coarse fabrics. Between these extremes there are numerous grades, each suited to a particular use and which cannot ordinarily be economically substituted for one another; (2) Wool-textile manufacturies are not equipped to handle all classes of wool, some limiting their operations to the manufacture of worsteds or the finer grades of woolens, others to the manufacture of carpets or the coarser grades of cloth, and each is thus in the market for only such grades of wool as its particular trade requires.

As wool is produced in the United States we find but few instances of the combination of large quantities and high quality and uniformity in the product of individual growers. From the large range flocks large lots of fairy uniform wool may be available, but quality is often low, while in the case of the best farm flocks wool of the finest quality may be secured but in amounts too small to make practical direct dealing between the producer and the manufacturer. It has thus become necessaryto assemble wool as it is produced on farms or ranges for sorting into its various grades and redistribution to the manufacturers in such quantities and grades as desired, and wool warehouses and commission firms, established for this purpose have been inevitable and, under existing conditions, indispensable.

In marketing farm-grown wool there may be several steps even between the producer and the commission house and it is here that co-operative selling offers the greatest advantages.

Various methods of marketing farm wools may be noted: (1) A producer having a large clip of wool of fair degree of uniformity may sell directly to a manufacturer, in which case he should receive a maximum price for his product; but such cases are rare. (2) If the producer has a sufficient quantity or is close enough to a wool warehouse to make shipping economical he may consign his wool individually to a commission firm, but this method is not practical for those who have only small lots or are distant from a warehouse, as freight charges would be excessive. (3) The common practice of selling these small clips to local buyers on the farm has been the cause of a great part of the sentiment in favor of co-operative selling. These local buyers are usually employes of high-salaried representatives of commission firms, for the services of both of which the producer must pay; or they may be independent speculators, interested only in buying at the lowest possible figure.

In Idaho local prices paid by such buyers last year are reported as ranging from 30c to 50c, averaging approximately 43c. It cannot be said that there is necessarily anything illegitimate in this practice, but it is obviously uneconomical, involving as it does, the labor and expense of locating these numerous, small, scattered clips, besides one or two extra commissions, an expense which is naturally deducted from the price offered for the wool. (4) Recognizing the impracticability or the economic waste of all of the foregoing methods, small producers in many localities have formed organizations for the purpose of assembling their wool at central points and selling it co-operatively through a committee of the consignors. Wool assembled in this way may be disposed of by any of the following methods:

(a) "Selling directly to representatives of the wool merchants. This is the system that was used in fourteen Idaho counties last year. A total of 609,000 pounds was pooled and sold at an average of 51c per pound. The cost of handling was about ½c per pound.

(b) "Consigning to a commission firm that will classify and grade the wool and sell to the woolen mills on commission. This is the system followed in Iowa last year. Iowa wool growers combined their clips, amounting to 1,119,130 pounds and consigned to the National Wool Warehouse and Storage Company of Chicago, which graded and sold it on a commission at an average price of 61¾c per pound, less the cost of marketing, which amounted to about 2½c per pound." (From circular issued by E. F. Rinehart, Field Animal Husbandman for Idaho, March 26, 1920.)

Method (a) is the one generally recommended for localities where the wool pool is being tried for the first time, as most small growers are not willing to sell their wool through a commission house on account of the delay in payment and the uncertainty of when payment will be received.

Another step in co-operative selling beyond either of those mentioned has been taken by wool growers of Ohio, who own their own warehouse, grade their own wool and sell it directly to the manufacturers through their own organization. In this way they handled over 2,000,000 pounds of wool last year, receiving an average price of 67c per pound, less 3c per pound for grading and selling.

Co-operative wool pools were started in Idaho in 1917. In the Boise Valley, where the writer was stationed at that time, the movement was started by three men who rented a warehouse on their own responsibility and advertised that wool would be received there for

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What a Live County Agent Did for His Community

REVIEW OF LAUCK'S SEVEN YEARS OF FAITHFUL SERVICE

ALVIN T. STEINEL.

COLORADO can show several outstanding examples of agricultural development as proof that county agent work in competent hands is a paying proposition. Three such examples have been selected for consideration in this and subsequent articles and these are chosen for special reasons:

1. Length of time the work has been in progress.

2. Capability and fitness of the men in charge of the work.

3. Splendid results accomplished in organizing the farmers for community needs and bringing town and country into more sympathetic touch.

The counties and the men are: W. H. Lauck, El Paso county; Charles E. Smith, Las Animas county; H. H. Simpson, Boulder county. At the time this is being written, Mr. Lauck and Mr. Simpson had resigned to take up other work.

We shall first take up the work of Mr. Lauck in El Paso county.

The writer has been familiar with agricultural conditions in the three counties for a good many years and especially so with El Paso county. In 1911 I made my first visit to the eastern part of that county talking with new settlers and getting facts from the old settlers concerning the way they were developing their land under dry farming conditions. The first pit silo I ever saw was on an El Paso county ranch—H. B. Rice's rectangular pit at Calhan, which was built about ten years ago. There was no county agent then; in fact, there were none in the west. The work had just taken a firm hold in the south and proved a great success under the direction of Bradford Knapp, who succeeded his noted father, Dr. S. A. Knapp, in handling the farm demonstration work, as it was then called. The office of Farm Management of the Department of Agriculture was at that time considering the starting of similar work in the north and west, and shortly thereafter county agent work was established in about the form we have it now

A series of wet years brought thousands of new settlers into the dry land sections of Eastern Colorado. They had done well with two or three wheat crops, but drouth came in 1910 and 1911 causing many of them to lose heart as well as money.

Many homesteaders were in actual distress because of crop failure and the fact that all their original capital was gone. Many had started with very little capital and one bad year was sufficient to bankrupt them.

Somebody in Colorado Springs, I think it was John Lennox, hit upon the idea of making loans to these settlers in El Paso county to tide them over the drouth period. A loan company was organized with Colorado Springs business men furnishing the capital and money was advanced to settlers who needed it at a fair rate of interest for the purpose of buying seed and feed. In some instances it was even necessary to buy food, as many families were in actual want. The company also took up loans previously made by the loan sharks who were charging usurious interest, saving borrowers anywhere from 3 to 8 per cent on some of the paper which was replaced with money at a fair rate. It occurred to the men who were behind this movement that there was great need for someone to direct the work of the borrowers and of all the new settlers, as most of them were unfamiliar with dry farming practice. Mr. Lauck's appointment as the first county agent, giving full time to the work in Colorado, followed. He assumed his duties in October, 1912. The seed and feed fund had been put out in the spring of that year. That season proved to be a very short one for the farmers—only 88 days between snows—and as it followed two dry years, harvest found conditions not at all encouraging. However, the financial aid given through the loan company provided credit for these farmers and they were ready for suggestions from Mr. Lauck, who was born on a farm in western Kansas and had conducted an experimental station for the Department of Agriculture, where he demonstrated the value of dry farming practices in crop growing. He was successful from the start, because he was familiar with the prevailing conditions. He found only one group of farmers actively organized and that was a branch of the Anti-Horse Thief Association, an organization originally formed to make horse stealing unpopular. After that pastime had become obsolete this association devoted its efforts to agricultural develoment problems and it became a nucleus for the first farmers' club organized by the new county agent. The present Farm Bureau organization is an outgrowth of this early work. Now there are 31 communities in the county fully organized, with from 800 to 1,000 farmers actively at work under various project heads, following the Farm Bureau plan.

First a Silo Campaign.

The first definite project taken up by Mr. Lauck was a silo building compaign during the summer of 1913. There had been a drouth of six weeks' duration and there was urgent need for silos. Five or six pit silos were built and these became demonstrations which were visited by the farmers from various sections of the county, resulting in more building the following year. When Mr. Lauck came to the county there were about 25 silos of all types in use, and now there are between 350 and 400 in the county.

About the next project taken up was the improvement of small grains. The county agent secured 7 pounds of Marquis wheat which was put out to farmers in one-pound lots for demonstration purposes. The next season about 2,000 pounds of seed of this variety was brought in and as a result of the work done then, Marquis is now the leading spring wheat produced in El Paso county. A start was made also with Kanred wheat, a winter variety, which is considered a better yielder than the Turkey Red. This has become quite popular in certain sections of the county.

Another achievement was the work done with Petkus rye, a winter variety which is especially suited to the higher altitudes. Kirk Brothers of Eastonville, brought in a bushel of this variety which they secured from a Wisconsin seed house the first year after its importation from Germany. They called the attention of the county agent to it and he in turn took it up with farmers in various communities for tests, with the result that Petkus is now the standard winter rye grown in El Paso county.

Revival of Potato Iudustry.

One of the remarkable results of the direct work on the part of the county agent is the revival of potato growing in what is known as the Divide district. This district in the early days had been famous for its potatoes, but lack of a proper farming system had caused the yield to deteriorate until practically nothing was left of the industry. Mr. Lauck made a special investigation of the subject and told the farmers that they could raise potatoes if they followed approved cultural methods. He was told by some of them that they had tried and failed and that they did not intend to try again, for potatoes would not thrive. After he saw the attitude of the farmers, Mr. Lauck took up the subject in the schools by organizing potato clubs among the boys and girls. Proper methods of culture, seed selection, rotation, seed treatment and the like were introduced in the lessons and the young folks started out with a determination to see what could be done in potato production. They succeeded beyond expectations. The adult farmers saw the lesson and it was not lost upon them. At one of the meetings where potatoes were being discussed, a business man made the statement: "Lauck, if you can get potatoes back you'll be worth a million dollars to this county."

"When that time comes," replied Mr. Lauck, "may I cash in?"

Both the merchant and Mr. Lauck have witnessed the return of potatoes as one of the big paying crops of El Paso county, and while the county agent did not get an opportunity to "cash in," the merchant did, and the farmers are doing it year after year as a result of following approved cultural methods.

Corn was another subject taken up. This crop was grown to some extent wherever farming had been developed in the county at altitudes of less than 7,000 feet, but farmers generally were of the opinion that only the hardier flint varieties would thrive under the climatic conditions, which were considered unfavorable. The short growing season and uncertainty of rainfall are the limiting factors in corn production. Through the efforts of the county agent good seed was brought in, this being of varieties that had proved to be both drouth and frost resistant. The result is that corn production has increased from 10 to 50 per cent, and varieties have been standardized to two or three kinds that have proved themselves able to mature most every year in the county at various elevations.

Farm Management Survey.

It was the policy of the county agent, right from the start, to get a proper diagnosis before he tackled any problem of agricultural improvement. So it was with the livestock project. Mr. Lauck knew that purebred sires were scarce, that the grade herds of dairy cattle were not paying their way, that hogs were few in number and that the beef herds, as a rule, were not up to standard of quality. Before anything was done in this line, however, it was necessary to get at the bottom of the trouble. To this end a farm management survey was conducted during the years 1914, '15 and '16, in charge of W. E. Foard, formerly with the Colorado Agricultural College. Mr. Foard and Mr. Lauck took records in the Divide section, the final showing being that farmers who made 60 to 65 per cent of their income from livestock had the best farm and labor income. It was also found that farmers having three or four sources of revenue had the best farm and labor income. Furthermore, that where livestock was of good quality farmers had the biggest returns for every hundred dollars worth of feed fed. These principles were not new, but having established them with reference to certain farmers and farms in the locality, it was easy to get the community to see the value of more livestock and better livestock.

This work formed the basis of a campaign for better stock and a cropping plan that provided ample feeds of the right sort. The results were soon apparent, for when farmers bought good seed, that is seed tested for germination and purity, and planted crops of varieties that would safely mature under their conditions and were of the kind that would furnish the best quality and the largest quantity of feeds that could be utilized as roughage or concentrates, they began to see the effects on their income. Along with the cropping program came purebred sires, high grade dairy cows, the keeping of records on these cows and the working out by the farmers of balanced rations, which brought them ample returns for every dollar spent for feed. This campaign has progressed far beyond the original plan and the results can be traced back directly to the farm management records.

One other feature brought out in connection with this campaign was the need of farmers themselves keeping records, and a good many of them are now doing it. These men know at the end of each year whether they have made anything and how their profits have been secured.

Several car lots of purebred and high grade dairy stock were brought in from Wisconsin and purebred sires for service in beef, dairy and hog herds have been bought from local sources and other sections, all as a part of the better livestock campaign. This compaign has been continuous. The Midwinter Exposition at Colorado Springs and the county fair at Calhan are a part of it.

Community Co-Operation Developed.

Mr. Lauck was asked by the writer what he considered the best work done during the seven years of his service. In his reply he did not mention the livestock work; he said nothing about corn improvement; nothing about the improvement in small grain varieties, nor the bringing back of potato growing in the Divide section, all of which are big things from the standpoint of material prosperity.

His answer was immediate and clear-cut: He said: "The thing that looms largest in the work which has been done by farmers and the county agent in the last seven years is the development of a spirit of community co-operation which extends beyond the confines of the rural districts and takes in not only the farmers, but the townspeople as well."

Colorado Springs, the trade center of the district, has long been noted as a tourist town and is often referred to as "Little Lunnon," because of the number of millionaires who make their home in Colorado Springs and give it social distinction. When county agent work was first suggested it was a subject quite foreign to the thought of the average business man, but at the close

(Turn to Page 20.)

Listing to Prevent Soil Drifting.

Recent high winds throughout the Plains region emphasizes the necessity for methods of control of light soils. Nothing more effective than deep listing in the fall, cross wise to the prevailing winds, has been devised. One of the projects successfully carried out in El Paso county is that of fall listing which not only prevents soil drifting, but aids in holding the moisture. The above view is of an El Paso county farm where this method was demonstrated. The following extract is from the annual report of Mr. Lauck for 1918:

"Some definite results of this series of meetings have been reported and are also noticeable in making the rounds of the country. For the past five seasons the County Agent has advocated the use of the lister for furrowing the beans and other fields in the fall of the year, to prevent soil movement and catch snows. Lantern slides were used showing fields in this and adjacent counties where listing had accomplished this. Not until the past two winters and springs, however, were very many farmers convinced of the importance of this practice. In each locality one or more men had taken the county agent's advice. To see that these fields did not 'blow' while others not listed did; and also drifted; was the most convincing demonstration. At each meeting the control of soil movement was explained and this fall, field after field has been listed. From all indications it will become a universal practice, especially on sandy soils

"One farmer who listed his ground last fall, claims to have 8 or 9 bushels more corn per acre than on spring listed ground. He takes every opportunity to show his neighbors and visitors the difference in the corn, and to pass the word along.

"It is also quite evident that many farmers are starting out on a good crop rotation, similar to the one mentioned in the foregoing, of beans, oats, corn, rye. Some substitute Proso millet in the place of oats, for it gives a good straw and a cash crop nearly every year, and very dry years some forage."

Hinman on Dual Purpose Type

ANOTHER MILKING SHORTHORN BREEDER HEARD FROM

C. H. HINMAN.

WE HAVE read with much interest the letters which you have published from Prof. C. W. McCampbell of the Kansas Experiment Station. What we seem to get out of these, resolves itself into the following statements which are either expressed or implied by his letters:

First—There is no such thing as a Milking Shorthorn.

Second—There is such a thing as a Milking Shorthorn, but the Kansas Experiment Station owns them all.

Third—All of the breeders of so-called but nonexistent Milking Shorthorns have long, lean, lank cattle with long legs and thin flesh.

Fourth—There is no reason for trying to breed from established milking lines, because satisfactory milk production can as readily be obtained from the best beef blood, as proved by the Kansas Experiment Station.

Fifth—That he expects to draw down on his head or on the Kansas Experiment Station the wrath of the Milking Shorthorn breeders for these statements.

Now as far as we are concerned, Prof. McCampbell will be greatly disappointed in the last of these contentions. Far from feeling any wrath in the matter we are conscious of a considerable amount of amusement. We have seen a great many men who have become so attached to their own cattle and so impressed with their importance that they felt that no one else could possibly have cattle as good. Of course, we would hardly expect to find this attitude in an Experiment Station, but strange things do happen.

We congratulate the Kansas Experiment Station in the possession of the cows of the type of Matchless Queen, whose picture is shown in the Western Farm Life of April 1, as this is precisely the type of cow that we as Milking Shorthorn breeders would like to produce. The pictures which we present of Oxford Annie and Big Sharon will show whether or not we have been in any measure successful.

We do object to the implication that all breeders of Milking Shorthorns have nothing but "long, lean, lank cattle." We do have some such and if the picture of Archduchess 9th, a member of the sacred Kansas Experiment Station herd, presented herewith, is an accurate portrayal of this cow, we are obliged to conclude in spite of the straw that serves in some measure to camouflage the length of her legs, that they have some beef bred cows in their milk "experiment" which they will hardly care to show at the International. From her picture we would hardly consider her an ideal type of beef cow, and we are

Arch Duchess 9th, 9 years and 10 months of age; weight 1,250 lbs. Milk record 8,965.9 lbs.

very certain that a Milking Shorthorn breeder would object to the rump, the long crooked hind legs and the shape of the udder and teats of this cow.

With regard to the contention that there is no such thing as a Milking Shorthorn, we have only this to say—that the American Shorthorn Breeders' Association, which may fairly be presumed to be authority on Shorthorn cattle in this country, recognizes such a branch of the breed. Something like 1,000 records, exceeding 8,000 pounds of milk a year and up to over 18,000 pounds, have been made with Shorthorn cattle, and a considerable number of breeders are reproducing Milking Shorthorns with as much reliability as is being found in the reproduction of dairy cattle in the clearly recognized dairy breeds. This is a matter of fact concerning which neither the opinions of ourselves or of Prof. McCampbell make the slightest difference.

Prof. McCampbell's letter implies that satisfactory milk production may be expected of beef bred Shorthorn cattle and that the average farmer who wants milk production and beef combined can as well obtain this through the strictly beef lines of breeding as in any other, and that the Kansas Experiment Station has proved this. It is precisely this contention that the breeders of Milking Shorthorns deny, because they have experience of its fallacy. The Kansas Experiment Station's so-called experiment proves nothing except that a man who is expert as a judge of milk production evidences, who has plenty of time to travel, backed by the state treasury in the matter of finances, can select here and there from well known beef herds satisfactory milking individuals. The Kansas herd is from not less than five different states. Now this is not a matter that needed proving, as any well informed man has known for a long time that this is perfectly possible. We are doing it ourselves, except that we are not backed by the state treasury, and we will freely admit that some of the best milking individuals that can be obtained are found in beef herds.

Cream Toast.

We have also found another fact which is well known and that is, that such cattle may or may not reproduce their own excellent qualities with a reasonable percentage of certainty, and that the presence of such cows in any beef herd is a matter upon which the owner congratulates himself because of their relative scarcity. Else why does every well known and successful exhibitor of beef cattle, practically without exception, resort to the use of nurse cows? The fact that they do is com-

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mon knowledge. Prof. McCampbell would hardly care to deny this.

Prof. McCampbell is inclined to compare the Milking Shorthorn at the Denver show with the beef Shorthorn to the disparagement of the former, and from his point of view perhaps rightly so. We say "perhaps," because even from the point of view of the beef men there is considerable question as to how far it is economically sound to go into the production of the animals which win the prizes in the beef ring. It is common knowledge that the degree of flesh shown by the animal presented in the beef ring is secured only at an expense entirely unwarranted by the value of this flesh, indeed that this extreme fat has no value whatever except to please the eye. Even the beef breeders themselves and the show associations admit this, but seem unable to control the practice. The writer is fairly familiar with some of these prize winners

Oxford Annie 176802 at completion of her record of merit Class A test of 8,313.9 lbs. Owned by Bonvue Farms Company.

and knows, for example, that the heifer that was a prominent prize winner in Denver for two years and also a prominent winner at all the leading shows in the northwest, is a nonbreeder, probably because of excessive fat. Her value begins and ends with her show triumphs, and must be charged by her breeder to advertising. Now this is not an isolated instance, but it is all too common in the experiences of the exhibitors of beef cattle. Where are the calves of Maxwalton's Roan Lady, the sensational grand champion of a few years past? The American Shorthorn Breeders' Association recognizes this danger by reducing the age limit required for aged herds, so as to remove from exhibitors the hazard of fitting mature cattle, because when fitted to the degree necessary to win they are very likely to become sterile.

Now the Milking Shorthorns must produce calves in order to win, and for this reason is not and should not be, presented in the degree of flesh which the beef cattle show. The senior champion Shorthorn beef cow at the 1920 Denver show calved during show week. Did she produce as much milk as the "average Milking Shorthorn?" She did not. She did not even produce enough milk to raise her own calf. Now we

Big Sharon 150935 at close of her record of merit Class A test of 94,605 lbs. Grand Champion Milking Shorthorn cow at National Western Show, Denver, 1918 and 1919. Owned by Bonvue Farms Company.

submit that the Milking Shorthorn cow would produce some beef. A Milking Shorthorn bull was shown by us weighing 1,400 pounds at 16 months. This weight for age may have been exceeded in the beef barn, but we take the liberty of doubting it.

The point I am trying to make is this: That the Milking Shorthorn breeders are attempting to present a utility type in their shows. Prof. McCampbell says: "Why raise cattle of this kind that are not giving as much milk on the average as the low set, broad-backed, blocky Scotch and Scotch topped cows in our own herd?" Now let's see. The three cows that won the blue in milking classes this year had official records as follows: 15,175 pounds, over 12,000 pounds, and 8,070 pounds with first calf. The largest record that Kansas has published is 10,302.08 pounds, made by Cream Toast, whose picture appears with this article. We make no comment as we think none is needed.

The man who is greatly impressed with the results of the extreme fitting practiced by exhibitors of beef cattle and who is inclined to disregard the cost of producing these results, will naturally be inclined to disparage the results obtained by the Milking Shorthorn breeders. We feel that we can afford to live under this ban. We have considerable confidence in the soundness of our position and the trend of common opinion is very certainly in our direction. The Milking Shorthorn "delusion" which excites Prof. McCampbell so greatly is a very persistent delusion. It is well nigh universal in England, where they have a reputation of being fairly sane in livestock matters, and is now deeply imbedded in the consciousness of the average farmer in this country.

After all, I am inclined to think that Prof. McCampbell and we ourselves are aiming at practically the same thing, but are approaching this goal from different viewpoints. He believes that he will be more successful by producing the good dual purpose animal from herds bred primarily for beef production and attempting to perpetuate this type and develop as much milk in it as he can, whereas we are inclined to believe that milk production is at least as difficult to obtain as the beef type and feel that we should make certain of this milk production by breeding from stock which has proved that they have it through a considerable number of generations, and with the selection of as satisfactory a beef type as we may be able to get. We will both have failures. Whether the failures that carry milk in profitable quantities but which are "long, lean and lank and long-legged"

(Turn to Page 20).

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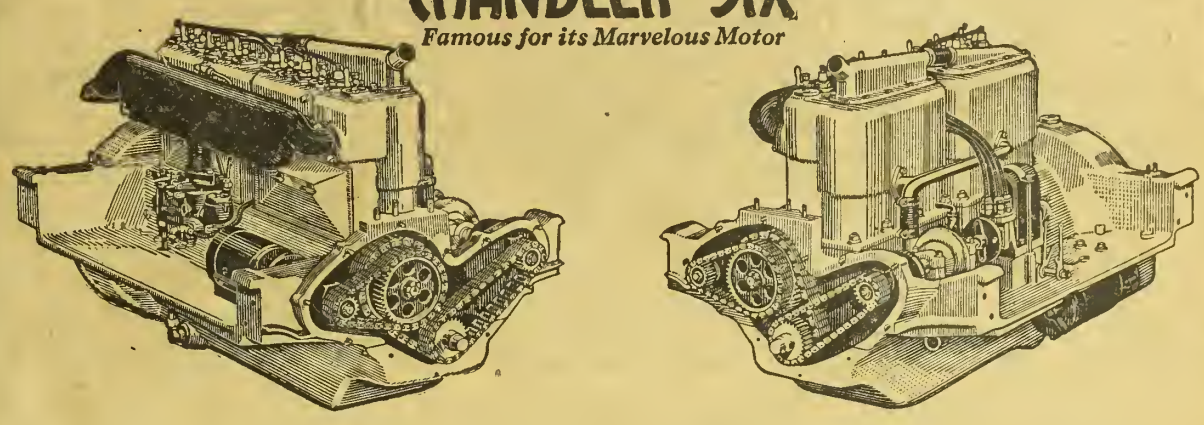

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Losing Money on Wheat.

The Kansas State Board of Agriculture recently gave out figures showing that Kansas farmers lost money in producing the 1919 wheat crop. The statement was based on figures compiled from a survey including over 2,000 wheat farms, in all parts of the state. The loss, spread out over the state as a whole, was 43 cents an acre. The most interesting point brought out is in consideration of the cost figures by divisions. The eastern third of the state shows a loss of only 15 cents an acre; the central section, which includes the bulk of the wheat territory, a loss of $1.52 an acre, and the western third of the state—the dry farming section—a profit of $1.89 an acre.

This showing for western Kansas is decidedly favorable—not in the way of profit—but as indicating that wheat has a place as a cash crop in that region. Improvement in farming practice in the way of crop rotation, and increase in number of livestock kept on the farms, is greater in western Kansas than in the central wheat belt. It is certainly a safe conclusion that these factors go a long way toward accounting for a profit, however small it may be, instead of the loss shown in the region where wheat is the principal and, too often, the only crop.

The figures are based on a careful analysis of costs and returns and may be accepted as a fair showing of how little there is to the oft-repeated story that the farmer is a profiteer.

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Last Call for Pintos.

We have already called attention to the very favorable situation this year with reference to pinto beans on the non-irrigated lands of Colorado and New Mexico. Since the appearance of the article in the issue of April 15, moisture conditions have improved wonderfully and any food crop that is a reasonably sure producer should prove a profitable venture. Beans have been abnormally low in price, when compared to other food products, and farmers have neglected the crop for that reason. There is at present a revival of the agitation among consumers for a greater use of this staple. This agitation is bound to be reflected in the demand, in view of abnormally high prices of most other foods, and give pinto beans a place as a cash crop to divide the honors with wheat.

Some may be of the opinion that the comparatively low market price is an argument against bean growing, but it is not. It is merely a reminder of the fact that pintos are not a good speculative crop, but that they sell, under normal conditions, at a figure that leaves the producer a fair profit, gives him a by-product which goes well when fed with silage, and provides a desirable legume in the rotation.

Our observation is that the most money in the long run comes from the crop that shows the least range of fluctuation on the market. And when that crop is drouth resistant and comparatively easy to grow on our low priced lands, farmers can hardly make a mistake in adopting it as a part of the regular cropping system. The consumer is obliged to eat the food he can buy at the most reasonable figure, and he is the fellow we have to cater to.

It is sound policy, also, in view of disturbed conditions, to select the crop that costs least to produce.

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The Farmer's Spokesman.

In a recent article in The Independent, Secretary of Agriculture Meredith strikes a new note in relation to the problem of the cost of living. Hitherto only the agricultural publications have been presenting the farmer's side of the argument while the press in general has been accusing the farmer of being mainly responsible for the high cost. The impression prevailed that readjustment consisted largely in beating down the price of raw agricultural products.

It is distinctly encouraging that the Secretary of Agriculture has been able, ever since he assumed office, to get before the public the farmer's side of the story and to impress upon the public that the matter of lowering the cost of living must be approached as a common problem of all the people. The manufacturer, the laborer and the distributor all have their share of responsibility. On this point, Mr. Meredith says, in The Independent:

"I speak of those things by way of conveying to the business man this assurance: The farmer is not without the inclination, or the necessary aids to do his part in reducing the cost of living. He is anxious to do his share and more, and he seeks the co-operation, the support and the good will of the business world. All those who work together in strengthening agriculture and make it attractive, and this necessitates making it profitable, will aid in strengthening and making permanent the very foundation of our whole economic structure and will render a real service to the nation as a whole."

It is gratifying that the farmer now has a spokesman at Washington who knows how to bring the agricultural viewpoint to public attention and who is not slow to take advantage of every opportunity for so doing. Mr. Meredith has done more during his four months as Secretary of Agriculture in that respect than his predecessor did during his entire term of seven years.

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On Collective Bargaining.

People who think but casually on the subject do not distinguish between collective bargaining in the selling of farm products through an organization. Yet two distinct and irreconcilable principles are involved, as matters now stand.

Farmers who desire to sell their products collectively say to the consumers: 'We will sell you milk, butter, potatoes, fruits, eggs, poultry, vegetables or other products at an agreed price per quart, pound, dozen, bushel or other unit. We will carry the investment, assume the expense, and do the work necessary to maintain a steady supply for your needs from day to day. You pay for only what you get. You do not have to accept spoiled or inferior goods, or short weights or measures. It is to your interest to bargain with us collectively, because if we know you are going to take our stuff at prices that will justify us in producing it, you will never go hungry, and the average prices you pay will be lower than under the old feast-or-famine plan."

The labor union too often says to the employer, in substance: "We will sell you the services of our members at so much per hour or day each. We do not guarantee any specific output. The work may be done well, fairly or poorly, but you must pay just the same. We demand the same pay for our incompetent, disloyal members as for the competent and loyal. Furthermore, we limit the amount of work a member may do. We reserve the right to strike if conditions do not suit us, regardless of whether you can help such conditions or not, or in the event that we cannot agree among ourselves or with other unions, or for any other reason. We demand the right to control our members absolutely, and your business to a certain extent, but we refuse to assume any responsibility whatsoever. It is to your interest to bargain with us collectively, for if you don't we will see that you do not operate your business."

If the unions should adopt the principle of the farmers generally, the latter would accept the invitations of organized labor to confer and co-operate. Industrial peace would quickly be established on a permanent basis. The organization of labor is right, and is desirable from many angles, but wrong cannot be perpetuated under its mantle. History does not record a single instance wherein injustice or a wrong principle has been successfully maintained by any agency or method. Only right can live.—The Agricultural Review.

Advice on Irrigation.

Dr. Samuel Fortier, Chief of Division of Irrigation Investigations of the Bureau of Public Roads, U. S. Department of Agriculture, has recently re-established an office of his division in Denver, at 301 Custom House, under the direct supervision of Mr. A. Lincoln Fellows, senior irrigation engineer.

The main office of the division is at Berkeley, Calif., where it co-operates closely with both state agencies and private individuals interested in irrigation and drainage matters. This division has carried on a large amount of investigation work in this state and adjacent states in the past, and is at the present time making a study of the South Platte irrigation and water supply conditions in co-operation with the office of the state engineer and the irrigation districts directly affected, and it is hoped that work of similar importance to the states can be carried on in other localities also.

Mr. Fellows will have general supervision under Dr. Fortier of the irrigation and drainage investigations of the division in Colorado and a number of surrounding states as opportunities for service and co-operation may arise. Any one having irrigation or drainage problems to be discussed will be welcome at his office.

The Beet Growers and The Price of Sugar.

Not one in 500 of Wallace's Farmer readers grow sugar beets, but we believe that all of our readers will be intetrested in the position in which many sugar beet growers find themselves as a result of the recent extraordinary advance in sugar prices. There is in New York City a sugar market which deals in future contracts for sugar in just the same way as the Chicago Board of Trade deals in future contracts for grain and provisions. This future market for sugar is especially important in view of the fact that sugar beet growers contract in the late winter to sell their beets at a certain price per ton the following fall. A couple of months ago when the various sugar beet companies were doing their best to make contracts with the sugar beet growers over the country at $10 and $11 a ton, July sugar futures at New York were selling on a basis of about $10 a hundred. There were no quotations at that time for the late fall and early winter, but if there had been any they would probably have been around $9 a hundred.

In view of the future quotations on the New York sugar market the big beet sugar companies evidently felt that they could not afford to pay over $10 or $11 a ton for beets next fall. The farmers said that they could not afford to grow them at this price and there was more or less of a deadlock in many beet growing communities. Finally most of the farmers have signed up on this basis of around $12 a ton for their beets. But now that most of the farmers have signed up on this basis sugar has suddenly gone soaring and the July futures which a couple of months or so ago sold at $10 a hundred are now $18 a hundred and the late fall and early futures are quoted on a basis of $16.50 a hundred. This means an equivalent of $17 or $18 a ton for sugar beets. Farmers who contracted to deliver sugar beets to various factories are apparently donating $6 a ton speculative profit over and above the ordinary manufacturing profit. It would seem that there is being conducted some of the rankest kind of manipulation on the sugar market and this manipulation is being conducted at the expense of both the producer and the consumer. The only sugar beet growers who stand to benefit are those who have contracted for their beets on a sliding scale and those in Michigan and certain other localities who have not made any contract at all as yet.

In the meantime sugar jobbers tell us that in all probability sugar will go to 30 cents or more per pound retail.—Wallace's Farmer.

If in need of advice, ask Western Farm Life Service Bureau.

The Branding Iron

The fellow who suggested motor trucks for bringing hay to the hungry cattle in northwest Colorado probably meant the winged type. We have a picture (mental), of a motor truck scrambling over the peaks on snowshoes, with a load of alfalfa on its back!

* * *

If words can build the James peak tunnel these few lines, added to what has already been said and written, ought to put the bore through the rocks quite a ways.

* * *

The beet growers and the bee keeper can face the sugar situation with some sort of assurance that their product will be in demand next fall.

* * *

Some people have puzzled over the reasons for apparent lack of concern which the candy factories exhibit toward the sugar shortage. Could it possibly be on account of the fact that certain chemical substitutes are plentiful and that the candy makers do not need as much real sugar as we have generally supposed?

* * *

The past winter has been one long trial for the cattlemen. Five zero spells in the early fall ushered in a rigorous season with some losses in advance and then, just when it was about time for the stock to be turned out, along came the April blizzards, which have been more severe than any spring storms experienced in many years. These storms, on top of a season of high priced feed and a declining market for beef, have broken up more than one man.

* * *

They were rehearsing for the opera, when the conductor was nearly frightened out of his boots by a terrific blast from the trombone player in the corner.

"What are you doing?" roared the conductor.

"I'm sorry, sir," came the reply. "It was a fly on my music. But," he added, with just a touch of professional pride, "I played him!"—Binghampton Press.

* * *

We received a very lengthy telegram the other day signed by Governor Shoup, Frank N. Briggs and W. N. W. Blayney, asking that we donate $500 towards the erection of that big hospital in Denver. We sincerely thank the Governor and the other two gentlemen for the implied compliment and acknowledge that the cause is a worthy one, but if we had $500 right now we would buy a mess of potatoes—good old Irish spuds, the very first thing, and after that, if we had any left we would donate it to the hospital fund gladly.—Dodd in the Strasburg News.

Control of Foul Brood.

American foulbrood is a disease of the brood of bees which is causing great losses to American beekeepers. It has existed almost since bees were first brought to North America.

It is important that the beekeeper should know whether American foulbrood or European foulbrood is in his apiary, for the two do not respond to the same treatment, according to Farmers' Bulletin 1084, "Control of American Foulbrood," recently issued by the United States Department of Agriculture.

In American foulbrood control it is necessary that all combs, honey, and other materials from the inside of the hive be taken from the bees and that a chance be given them to establish themselves again on new combs. Several methods are given in this bulletin, but the underlying principle is the same in all cases.

"may 20"

If the label on your magazine reads "may 20" your subscription expires this month. You, no doubt, intend to renew. By doing so at once you not only extend us a big favor, but will make sure that you will not miss a single issue of Western Farm Life.

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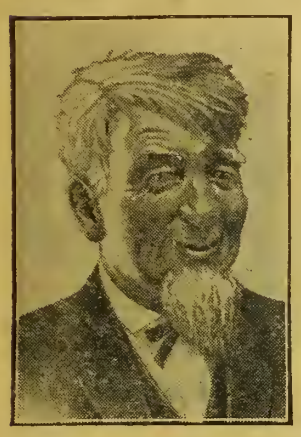
WESTERN FARM LIFE,
Denver, Colo.

Comment by Farmer Putnam

OUR MISSOURI FRIEND ADDS HIS OPINION TO MANY OTHERS ON THE SUBJECT OF PROFITEERING.



I GOT a letter the other day from one of my subscribers wantin' to know what was the matter with me, why I was allus so cheerful and happy and why I didn't roast the profiteers like most of them other fellers that writes fur the papers. He sez: "Dear Farmer Putnam, why don't you go after the profiteers? Don't you know that us farmers is bein' robbed? Are you one of them profiteers? Sometimes I almost think you're rich and prosperous, because you're so happy all the time. Nuthin' ever seems to go wrong exceptin' when you have a tiff with Josephine. You don't seem to have no sympathy fur us poor folks that's up ag'in the high cost of livin'."

Maybe he's right, I don't hand out much sympathy, but that's because sympathy is cheap; it's just like advice, anybody kin give it and it don't buy no bread. What people nowadays needs is not sympathy, but grit; a little stiff backbone. Folks, you got to put a kick in your talk when you go to buy things that's too high. I was tryin' to git a pair of overalls the other day at the store and the owner sez: "They've gone up ag'in on account of the demand bein' bigger then the supply. You know everybody's wearin' 'em in the cities now and we cain't git enough to supply our farm trade."

"When did you buy these?" sez I.

"I placed this order last fall, but never got 'em till three weeks ago."

"You bought 'em at last fall's price?"

"No, I don't know yet what they'll cost me; I had to order 'em at whatever price they might be on date of delivery, because they're so scarce. I ain't got the bill yet, so I don't know what they'll cost me. But I know they're up."

He knew they were up! That's all anybody knows nowadays. I sez to him: "Hold them overalls up to the light; let's see if the material is good."

He held 'em up as high as he could reach. Then I sez: "Now keep 'em in that position till your arms ache. I'm off of overalls today!"

I went over to the grocery counter and asked about gittin' some coffee.

"Coffee!" sez the clerk, "why Mr. Putnam you know coffee is awful high and hard to git, but we got some very fine Java here fur 65 cents a pound. I guess we kin let you have some of that."

"You guess you kin let me have some of it fur 65 cents, do you? Well guess ag'in; I'll drink milk till coffee comes down a bit. How about sugar? Do you still keep that in stock?"

"Oh yes we carry it, but you cain't git more'n five pounds and it's 18 cents a pound now. You know sugar is awful scarce. The pink elephant worm ruined the cane plantations in the south last summer and sugar is higher'n a cat's back."

"How about beet sugar that's made right over here in Brighton and Greeley and in them other towns, outen our Colorado beets?"

"Well I don't know anything about that; you know the sugar business is subject to the law of supply and demand, like everything else, and the beet growers held out fur twelve dollars a ton, so beet sugar is the same price as cane sugar."

"So they're takin' the extra dollar that they expects to pay the growers next fall outen the crop they raised last year?"

"I expect so; you know the sugar industry is very uncertain and they cain't afford to take chances. Dividends has to be paid and labor is high you know."

"All right," sez I, "don't mind about the sugar. I'll take a can of sirup. I reckon that's high too?"

"Yes, just awful high, you know it comes in tins and the tin mines has been shut down on account of strikes or somethin'. And the labels on the cans is hard to git, because of the printer's strike."

"How about some taters? What are they sellin' at?"

"Ten cents a pound Mr. Putnam, I just hate to tell you, but the farmers is profiteerin' ag'in."

"I reckon I hadn't ought to be buyin' taters, but I run out, because my last sack froze in the cellar in the blizzard two weeks ago. What kind of spuds is them you're sellin'?"

"Pearls, a very nice lot of 'em fur this time of the year. I really ought to be sellin' 'em fur seed, but I'll sacrifice my profit, because the country is clear out of spuds, so I'm lettin' 'em go fur ten cents a pound to my best trade."

"Who'd you buy them offen?" sez I.

"I got them offen Bill Graves."

"That's what I thought," sez I, "because Bill took my Pearls in with his'n three weeks ago, just before the big storm, and you give him $4 a hundred fur 'em didn't you?"

"Well ain't that a coincidence," he sez laffin'; "the joke's on you Mr. Putnam."

"It is," sez I, "never mind about the spuds; I'll eat pinto beans. I've got a sack of them saved up. Josephine wants me to bring home some goods fur a apron. How's blue gingham sellin'?"

"Seventy-five cents a yard."

"You know Josephine's size don't you Mr. Blair? Well, how do you reckon I'm goin' to pay fur enough gingham to make her a full apron at 75 cents a yard? I'll git her to use a gunny sack, or make her aprons outen flour sacks before I'll buy gingham at silk prices."

"Yes it's too bad that everything's so high. It's hard on us merchants. We have to pay what they ask us and if we try to make up fur it by pullin' a little profit outen produce, the farmers hops on our necks."

Well when I got home that night we had home-cured bacon and eggs and baked pintos fur supper and I sez to Josephine:

"Josie I guess we're lucky after all. How do them people in town manage to live? They has to buy everything. Just think of the poor! They must be half starved."

"Yes," she sez, "it's more'n I kin guess how they git through on prices that has to be paid nowadays. Why don't you men do something about it? If I was a man I'd show them profiteers. Why don't Congress do something about it?"

"Congress," sez I, "don't blame Congress. They've done everything possible to bring down prices. I've read speech after speech from Washington on profiteers. Them halls of Congress is reverberatin' with big words and long sentences and every day a dozen scalps, took from the heads of the trust magnates, is hung up to dry in the dome of the capitol. The spittoons on the floor of the Senate is red with the blood of the food price gougers; the walls is spattered with their brains where some Hercules of the forensick areny has whirled a scoundrel around in the air till he broke him into tatters. Our Congressional Record is printed in scarlet letters symbolic of the gore that's bein' shed every blessed day. Our senators and representatives is bearin' up nobly under the turrible ordeal and the country may feel safe if their wind holds out. No Josephine don't blame Congress. They're doin' their darndest."

"I guess you're right Tom," she sez, in conclusion, "they're just like you fellers that writes fur the press—words, words, words. If the profiteers could be made to eat them words they'd choke, but you men hain't got the grit to ram it down their throats."

I guess she's right fur onct.

Thos Jefferson Putnam.

Killing Out Bindweed.

Western Farm Life:

Having seen so much about the control of bind weed or wild morning glory in different papers, I would like to give my experience with same. I have several patches on my farm that are pretty bad. I give the ground thorough cultivation for a year and then seed it to alfalfa and leave in alfalfa until it does not appear. I never have any trouble getting a stand of alfalfa on the patches as it seems thicker there than on the rest of the field, and bind weed does not choke the young plants out. I plant whenever I get the ground ready, always working just before planting. Have also killed out sand burrs the same. Hoping this will benefit some one.—Geo. E. Coffin, Longmont, Colo.

A Good Egg Record.

Poultry Department,
Western Farm Life.

Please send me some of your poultry blanks, if you have any left. I have just been keeping record of eggs on the calendar and I find that 27 hens laid 335 eggs during the month of February. We were surely surprised. Now if you will send me the record blanks I shall try to keep a better record of them. We enjoy reading Western Farm Life very much and get lots of help from it. We live on a dry ranch, so of course, the advice is what we need. I like to read the Poultry Department.—Mrs. Ray Knight, La Boca, Colo.

After 10 Days

Your teeth may also glisten

All statements approved by high dental authorities

Millions of teeth now glisten as they have not done before. You see them everywhere.

A new method of teeth cleaning has, in late years, come into very wide use. Thousands of dentists are urging it. Multitudes of people have proved it and adopted it. And every person is now offered a free ten-day test.

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The purpose is to combat the film which causes most tooth troubles. Film is that viscous coat you feel. It clings to teeth, enters crevices and stays. In the months between your dental cleanings it may do a ceaseless damage.

It is the film-coat that discolors, not the teeth. Film is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

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Very few escape

Very few people have escaped some of these tooth troubles, despite the daily brushing. The ordinary tooth paste does not dissolve film, so the tooth brush has left much of it intact.

Dental research has for many years sought a way to fight this film, and the way has now been found. Many clinical tests have amply proved its efficiency. And now leading dentists everywhere are urging its adoption.

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Send the coupon for a 10-Day Tube. Note how clean the teeth feel after using. Mark the absence of the viscous film. See how the teeth whiten as the film-coat disappears.

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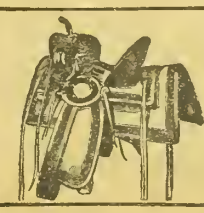

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and through the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Concerning Fusarium in Potatoes.

In a recent answer to a question concerning seed potato treatment, fusarium disease was included in the list of diseases that could be prevented by the corrosive sublimate treatment. This was an error. Fusarium disease is internal and cannot be reached by any remedy. Planting seed free from indications of this disease, crop rotation and good cultural methods are the preventives recommended.

Ex-Soldier Wants a Loan.

Could you tell me how an ex-soldier can borrow money on a homestead for the purpose of improving the same? I proved up on my homestead last year, but have not yet got my deeds.—E. A. C., New Mexico.

Sorry to inform you that there is no special provision made for loans to ex-soldiers on homestead lands. After you have final papers you can make application for a loan to the Federal Land Bank, which serves the state of New Mexico and is located at Wichita, Kan. There may be a local Farm Loan Association at Roy. If not, write to the Federal Land Bank at Wichita and ask them the name and address of the secretary of the nearest Farm Loan Association to whom you should make application.

Regarding Irrigation Water.

Ans. to J. L., Archuleta County, Colo.

Statement of Case: A. has a filing, made three years ago, on water wasting onto B.s land, bought by him from an Indian owner. The water naturally wastes through two or three water courses traversing B.'s land. The waste water comes from the irrigated land of a third party, adjoining B.'s land. A. used the water, however, before B. acquired the land. A. first takes a part of his water from a point beyond B.'s land, running his ditch across and taking all of the water from the water courses on B.'s land. B. gave permission for the construction of the ditch but did not consent to the taking of all of the water from the water courses.

A. had the ditch finished in 1919 while B. was away at work, though B.'s wife tried to prevent the intercepting of the water courses, but A.'s man put in the dam in spite of her protest, claiming that no water belonged to the water course, but that she could have what she needed for her garden.

Questions: 1. Had B. any right to give his consent to the cutting off of the water from the water course?

2. Can B. now take the water and use it?

3. Has A. the right to the water?

Ans.—The writer believes that under the conditions stated, A. has a right to take the water to the extent of his needs, but of course, not more than he needs, and limited, possibly, by the agreement made with B.'s wife. If he or his authorized agent promised her water as a consideration for allowing the diversion to be made, he must continue to supply that amount in accordance with the agreement. A. had the right, however, to divert all of the water if he needed it, and B.'s only claim would be for damages caused through the construction of the ditch across his land, and if he gave free consent to such construction, he is estopped from even claiming damages. B. can not require a part of the water be turned down the water course excepting as agreed by A. Indeed neither A. nor B. in all probability, could compel the original user of the water to continue indefinitely to waste the water as he is now doing. He may so use it that there will be no waste or that the waste water shall return to the stream from which it was originally taken, as the law theoretically requires.—A. Lincoln Fellows, Senior Irrigation Engineer, Denver.

Not Responsible for Fire.

On Monday, March 22, there was a heavy windstorm; during the day a fire broke out in a field, or a small meadow near a field where I was drilling some rye. Shortly before the fire a man walked across this meadow to where I was drilling to ask the distance and route to a public sale that was being held in the neighborhood. After leaving each other, and I had gotten between ½ and 2-5 across the field, I noticed the fire. By the time I could get back the wind had carried the fire across the road to the adjoining pasture with such speed that it was far beyond my reach or control. I fought out the fire near me and started towards the other end to join with others who were fighting about two miles away. Before I could get there they had the fire conquered. Now one man threatens to sue me for letting the fire get across the road, which he claims damaged his pasture to the amount of $400. He is willing to settle if I will give him $20, one-half of which the rent of the pasture cost him. I had nothing to do with the fire, was not burning any trash or smoking, and cannot swear the cause of the fire. Can the party hold me responsible?—C. H. J., El Paso County, Colo.

In my opinion, you are not responsible in any way for damages in the case. It will be just as well to let the gentleman bring his suit.—Hamlet J. Barry, 724 Equitable building, Denver, Colo.

Spraying Apples and Cherries.

I would like to ask you for advice, what is best to use for spraying apple and cherry trees? I have 60 acres in orchard and they are mixed and I would like to know how to mix the spray so I can use it for cherry and apple trees at the same time. State the name of the stuff and when proper time to spray first time.—F. K., Boulder County, Colo.

It is impossible to give definite advice without knowing the pests that are troubling the trees. I presume you wish to spray your apple trees for the codling moth and your cherry trees for slugs, which injure the foliage. If so when you apply the first spray for the codling moth just after the blossoms fall, a thorough spraying of the cherry trees will be fairly efficient in the control of slugs. It will be better, however, to spray your cherry trees when you make a second spraying of your apple trees about three weeks after the calyx spray. For fuller information concerning the control of insect pests in the orchard, I will refer you to Bulletin 210 of the Colorado Experiment Station.—C. P. Gillette, State Entomologist.

How to Obtain a Patent.

I have a small device on which I want a patent, and I don't know how and what to do. Could you tell me what I should do?—E. P. A., Boulder County, Colo.

Write to the United States Patent Office at Washington, D. C., stating what sort of a device you have on which you want patent, and ask them to send you full instructions regarding registration of same.

Books on Livestock Diseases.

Will you please advise me where I can get some good book on diseases of stock, and cures for same, also advise price of such books.—L. W. G., Moffat County, Colo.

The only thing authentic that we know of is the literature issued by the Department of Agriculture on this subject. Write to the Government Printing Office, Washington, D. C., for prices on the following: Special Report, Bureau of Animal Industry, on "Diseases of Cattle." Special Report, Bureau of Animal Industry, on "Diseases of the Horse." These books are sold by the government to farmers at a nominal figure. There are many books published on livestock diseases, but we do not know of any particular one that we can recommend, outside of the official government publications.

Can Both Hold Homesteads?

Can a man and woman each hold and prove up on a homestead providing they have both filed and put buildings and other improvements on claims before they were married?—Reader, Colorado.

The regulations governing filing on homestead lands provide that the marriage of an entrywoman will not defeat her right to acquire title to the land if she continues to reside thereon and otherwise complies with the law. However, husband and wife cannot maintain separate residences on their respective homestead entries, the regulations providing that in such cases the husband may elect on which of the entries the home shall be made. However, such arrangement is only possible where each party has complied with the homestead laws in every respect for one year next before.

Child Takes Mother's Name.

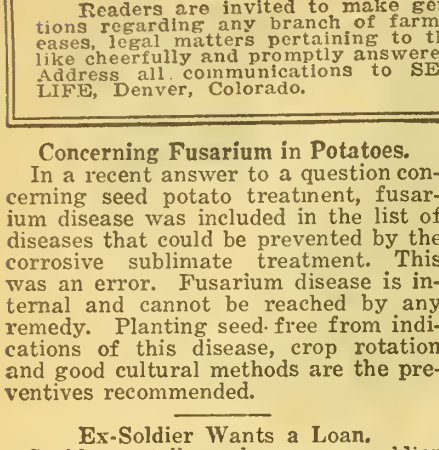
Can an illegitimate child be given its father's name legally when the father is dead and never knew of the child; and if so, how does one proceed? Can an illegitimate child receive any of the father's estate where the father has never been married and his father and mother naturally fall heir to the estate?—Subscriber, Colorado.

The illegitimate child takes the mother's name. The child could, if old enough, apply to have his name changed to any name he wishes. The illegitimate child inherits from the mother, but not from the father in Colorado.—Hamlet J. Barry, 724 Equitable building, Denver, Colo.

A Second Wife's Share.

What is a second wife's share in a husband's property? What is a husbands share in any property the wife might have? There are no children by the marriage, but each has children by a former marriage?—Subscriber, Colorado.

Neither the wife nor the husband has any interest in the property of the



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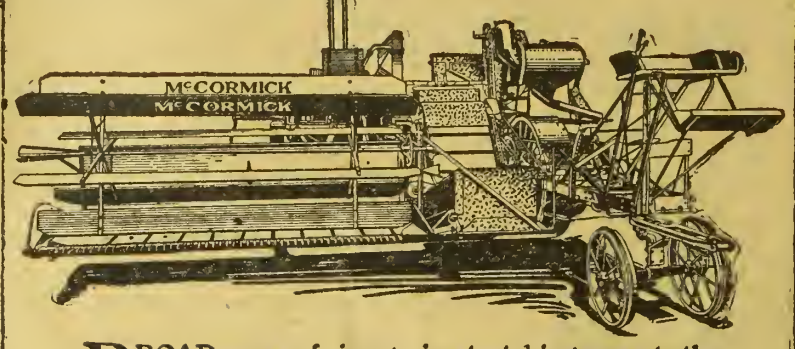
No Slip Between Sickle and Sack



BROAD acres of ripe grain stretching away to the horizon; hot, stifling winds fanning the fields; a scorching sun beating down from cloudless skies, drying the heavily laden heads of grain and splitting the enclosing husks of the prime, fat kernels. Grain must be cut in a hurry!

A flock of binders rushed into the fields! An army of fly-by-night harvesthands summoned to support the binders and feed the waiting thresher. Old Sol trying his durndest to beat you to it—shelling a few kernels of grain from every head of grain at each toss of a bundle between binder and thresher. (There's many a slip between binder sickle and thresher cylinder!)

Just a little word picture *but*—

That's the kind of an experience that gives the farmer of the West a full and complete appreciation of the light combines—Deering and McCormick Harvester-Threshers. They are the dry-weather crop savers—harvest, thresh, clean and sack the grain as a one-unit operation. There is no slip between sickle and sack!

Write your name and address along the margin of this advertisement and mail to one of the branch houses listed below. A complete descriptive harvester-thresher pamphlet will be mailed to you in return for your trouble.

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other. But neither spouse may will away from the other more than half his property, without the consent of the survivor, said consent to be made after the death of the decedent. Upon death in the absence of a will the wife gets one-half and the children of the decedent one-half.—Hamlet J. Barry, 724 Equitable building, Denver, Colo.

Handling Hogs on Pasture.

I am starting in the hog business, having 25 head. Fifteen of them are Durocs and the rest "scrub stock." Kindly give me your advice as to how to care for them to get the best results in the most economical way. I have in mind to fence about five acres. Half of it in alfalfa and the rest is an apple orchard. I am feeding them now nine ears of corn apiece a day and pasture them on green alfalfa one hour each day. Also let me know about the care of pigs at weaning time.—Subscriber, New Mexico.

There is no more economical way of handling hogs than to make use of your alfalfa pasture. The 2½ acres you mention besides your orchard should be ample for the entire 25 head if the stand is anywhere near what it should be. It would be advisable for you to keep them on pasture the entire time rather than to just leave them an hour each day. I would suggest that you weigh the corn you give them while they are running on alfalfa pasture until you get an idea of just how much to give. The proper amount would be from 2 to 3 pounds per day for every 100 pounds of pork. You can estimate the weight of your hogs and get a fairly good idea of how much corn to give them by weighing it for one or two feeds. I am inclined to think that nine ears of corn is just a little bit heavy for economical returns. What you are after is to make as good use of the alfalfa pasture as possible. If you feed too much corn you will not get the worth of your alfalfa, and as that is the cheapest feed you should exercise care to get as much out of it as possible. In handling your hogs on the pasture it is advisable to divide it into at least two lots, so that you can shift from one lot to the other at intervals of ten days to two weeks. That gives the hogs the change of range which is beneficial to them. It might be advisable for you from time to time to run a mower over the field and clip the old stalks. This will induce a young growth to start up which the hogs are very fond of and will give you the best results.

In regard to the orchard, would say that that plan is an ideal one. If you have a crop of apples, or whatever fruit you may have, there is always more or less waste, which the hogs will make good use of. You should watch your trees if you plan on keeping up your orcharding,as the hogs are sometimes apt to injure the trees by rooting and barking them.

You ask about the care of your pigs at weaning time: One of the best provisions for the young pigs is a creep somewhere near your pens, where the small pigs can get in and the larger pigs will be kept out. In this creep keep a supply of grain of some sort at all times, so they can take advantage of it. I would then let them range on the alfalfa pasture the same as the older hogs until they are able to shift as the others do. You will find the creep a paying proposition, as the small pig has never a chance with the older ones at a trough. It would be advisable for you to start this creep before the pigs are weaned and give them a good start on grain before they are taken from the sow.—H. A. L.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Calves Born With Goiter.

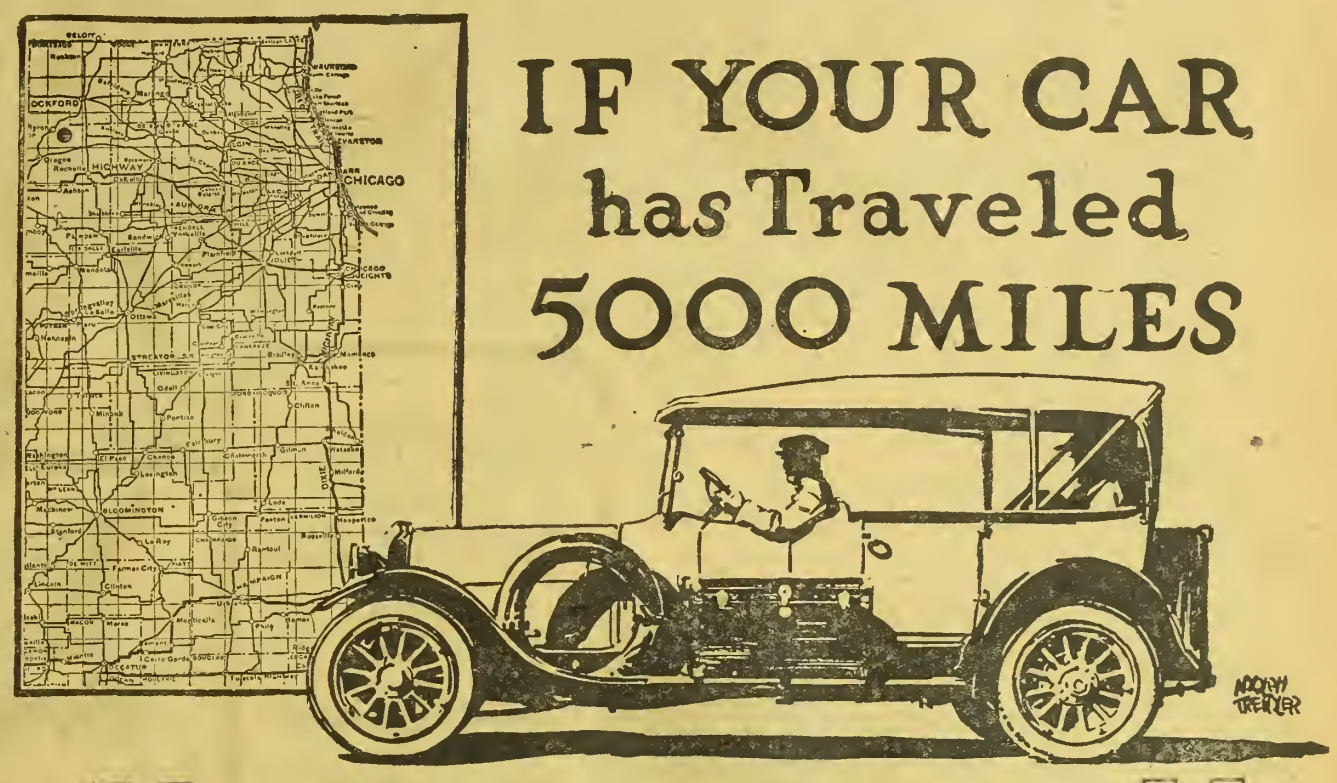
This spring all my bull calves have been born with an enlarged neck; looks like goiter in a human. The older ones are now approximately six weeks old and while the enlargement has greatly reduced, there still remains a lump probably 2½ inches in diameter. I can't see that it interferes with their drinking. Kindly give me your opinion as to its cause and the probability of its finally disappearing. I have eight calves born and every one of the five bulls have the enlargement; the three heifers are all normal. None of my cows are over three years old and five of them are grade Holsteins. My bull is a purebred Holstein and 2½ years old, a very fine growthy fellow and weighs about 1,700 pounds. All my cows are in good flesh although their winter's feed has been almost entirely alfalfa.—S. M., Idaho.

This condition has not been specifically investigated, but it is no doubt similar to that of hairless pigs. According to a bulletin issued by the University of Montana, the loss of pigs annually in that state approximates $100,000. Other states have reported losses but probably not as heavy as Montana. Pigs fully matured are born hairless and with goiter. Goiter is an affection of the thyroid glands in the neck. The head and neck are larger than normal and the skin from the shoulders forward is thick and wrinkled. Calves born with goiter no doubt have a similar etiology. It is presumed to pertain to the complex metabolism of the ductless glands in which the thyroid is especially involved. In pigs it has been quite fully determined that the cause is associated with an unbalanced ration, or in other words that there has been a deficiency of some essential element in the food given the pregnant sow. The ingredient that is deficient in the food is presumed to be iodine. Experiments thus far seem to indicate that this condition may be reduced to the minimum by giving potassium iodide in the food and providing a ration which shall contain at least 25 per cent bulk material. A concentrated ration containing a high percentage of protein must be avoided. Since the cause of goiter in calves is presumed to be the same as in pigs, the same preventive measures should be adopted. The fact that only the bull calves were affected in this instance is probably a mere coincidence.—G. H. G.

Probably Malignant Edema.

Can you tell me what is the matter with my colt? He came in the other morning with a little swelled place on his throat. I have some uncleared land that is being used for pasture. It is covered with a sage brush and this brush has ticks on it that get on the stock. There were a great many ticks around this swelling. He was very thirsty and drank every little while during the day, but the next day he could not eat and his head was so swelled that he could not open his mouth more than two or three inches and he could hardly drink. I then made a tea of alfalfa leaves for him and I put liniment on the swelling and bathed his head in hot water, and he seemed to be soothed and go to sleep. Finally, however, the swelling became very hard and just above his eyes there were lumps the size of a tea cup. As long as he could stand he would put his nose down almost to the ground. On the third day he was unable to get up and that night he died. (Further description indicated the presence of a yellow serum under the skin.)—A. B., Idaho.

The case is most unusual. It has some indications of a snake bite, but it is too early in the season for snakes. The absence of pus indicates that it was not from wound infection. The presence of yellow serum indicates edema or dropsy. It is hard to conceive of it having been caused by ticks, but we must not forget that ticks sometimes transmit spotted fever to men. The acute attack precluded the possibility of "brisket disease." Further, this disease never occurs at an altitude lower than 8,000 feet. Purpura hemorrhagica, which is presumably an intoxication following strangles or some other infectious disease, never attacks a colt under 2 years of age. The best guess is that it was malignant edema, caused by the specific germ of this disease. This condition sometimes follows very trivial wounds, castration, etc. This colt probably could not have been saved and there is very little danger of the disease spreading to other animals.—G. H. G.



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Stop at the Sign of SINCLAIR OILS *Sinclair Service*

The Farmers Position.

Here is another letter from The Lady of Cedar View discussing live problems of the day, and it has the punch and the viewpoint. All over the world women are becoming aroused. They are openly and aggressively fighting injustice, evil and sham. Let us not give way to discouragement over the seemingly long drawn out rehabilitation of the earth after the five-year cataclysm. The cauldron is seething; it is throwing off the dross and the scum. The gold will survive. In these times of unrest it is good to note here and there men and women on the farms raising their voices not alone in protest over injustice, but with constructive suggestions for a better understanding between all of us of the one great human family. —Editor.

HELEN HARBALL.

It seems that the statement from the Postoffice Department about the 40,000 farmers who told the truth about their business, has stirred up the daily papers as nothing has done before. It is true that the farm papers have, for years, been pointing out and proving just what these 40,000 farmers stated, but the city papers have been concerned with other things. In many states they have been fighting over the kind of drink they can get, without regard to the fact that they may find themselves without food if the present conditions prevail. The daily papers are now trying to size up the situation and, not knowing anything about it, they make a sorry showing.

A few daily papers have the vision to see what is coming, and they talk freely and sensibly about the situation. It is quite essential in these times that the farmers should stand by and encourage their friends among the daily papers. These papers influence the thought of consumers, and we need that thought on our side.

Of course, there is no denying the truth of the farmers' complaint, and the better that is appreciated by the consuming public the sooner agricultural production will receive the attention due it by the American people. The plain fact is that in the case of the manufacturer the public has been willing to pay the bill and has been willing to sustain a giddy spiral of higher wages, higher prices and still higher wages. The public has consented to play the goat with everyone except the farmer. The postoffice questionnaires have given the agriculturist an opportunity to register his complaint, and apparently he has done it with considerable effect.

The farmer climbed out of bed Sunday morning (sweet day of rest for practically every man in every industry which the farmer has to patronize) to greet the 5 o'clock temperature of 20 degrees below zero. He spent at least five hours attending to the needs of his livestock, working most of the time under conditions which would involve a strike in any organized factory in the country—a strike which the public would pay for in the end. When everything was done about the barn, the wood and water provided for the house, the chances are that the farmer glanced over the Sunday edition of some popular newspaper to read there a smug editorial upon the results of the postoffice questionnaire. The paper admits that the farmers' complaint is based on justice and goes so far as to say that similar answers might have been obtained "for a hundred years." "Nevertheless," writes the metropolitan editor, "somehow we have lived through it." Then follows that old stuff about the farmer being "the very bone and sinew of good citizenship, of good Americanism." We are told that the farmers know they are "going to get good prices," that they "believe in the doctrine of production, always more production. They are willing to work, they have a pride in their work."

Now who ever heard of a carpenter, a bricklayer, a shoemaker, a coal miner, or a steel worker, tolerating anything because of a pride in his work? True, the farmer is "the very bone and sinew of good citizenship, of good Americanism," but is it fair for the American public to trade on those qualities? Take a glance about any farming community and see how many farms are passing out of the hands of the men who have carried them on for generations. The New England states are dotted with ancestral homesteads which men, whose fathers and grandfathers did comprise the "sinew of good citizenship," have abandoned to ruin or to those who have not been in this country long enough to know the language.

The American farmer has been patted on the back by every sleek-pated politician who ever hungered for a vote. He has been made the idol of fiction and no biography is complete whose hero was not at one time a "poor boy on the farm." But all the while the farmer has been forced to buy in a protected market and sell in a free trade market. He has been forced to employ men who were not good enough to get a job at higher wages in the cities. During the war the farmers of some of the eastern states even went so far as to hire men from the jails, paying them free-labor wages, transporting them to and from the jails, accepting responsibility for their safe keeping and feeding them all the wholesome food they could eat. What was the result? The authorities withdrew this needed labor from agricultural production at a time when the world was begging for food, because of a contract with a chair-making concern which paid the men a few cents a day, leaving them to be fed and watched at the state's expense.

Yet the products of the farm are under the strictest supervision by the local and national authorities.

What woman can buy wool cloth today of the quality which pertained five years ago, no matter what the price? Yet the milk which that woman buys is protected from adulteration by the strictest laws, and the farmers themselves are taxed to pay for the enforcemen of those laws.

What man can buy a pair of gloves of old-time quality, even at 50 per cent more than they used to cost? Yet the farmer who shaved a little from each pound of butter would soon find himself in court being prosecuted by the agent of outraged society.

Who is able to purchase flour which is able to measure up to former standards, though paying anywhere from 75 to 100 per cent more a barrel? But with what promptness do we pounce upon the farmer who mixes his wheat with some cheaper seed to make it heavier or more bulky!

Who has not seen spools of thread which appear to the eye to be the same as those of several years ago, but which actually measure from 30 to 50 yards shorter, selling today for more than the full-measure ones? But what would happen to the farmer seen using a basket smaller than the standard size from which to sell potatoes?

The American people are not buying a manufactured article, from an automobile to a paper of pins, which is not cheaper in quality and higher in price than it was five years ago, but the farmer is required by law to meet higher and higher standards every year and the increase in price of his products is not commensurate with the increasing costs of production. The farmer has a real grievance against the manufacturer and the middleman, who have, economically speaking, ridden rough shod over him for years. What is needed is a real understanding on the part of the public of the difficulties which attend agricultural production today, and the elimination of those industrial parasites known as the middlemen. This may sound like a simple solution, but if it were to be practically applied it would mean an economic revolution.

Dollar for dollar, the consumer gets more in labor value today from the American farmer than from any other industrial worker with whom he does business. The farmer is trading his labor and his soil production for a dollar which will not buy back the same amount of factory labor or mill production. He is working under a handicap which in the end works hardship on the ultimate consumer, but the ultimate consumer is alone responsible. Some day we hope to see the public educated up to an appreciation of the farmer.

Form State Federation of Co-Operative Shipping Assns.

A state federation of co-operative livestock shippers has been formed. Its main office will be at Denver. The object is to stimulate interest in forming new associations for the handling of livestock shipments in sections where there is need for them. It will also support measures of every kind that tend to make co-operative shippers more efficient in handling stock and to co-operate with the other livestock associations in the improvement of conditions affecting the shipper. The officers of the newly formed association are: President, Paul Mead, Berthoud, Colo.; vice president, P. A. Bauer, Holly, Colo.; secretary-treasurer, H. A. Lindgren, who can be reached care of Western Farm Life.

If in need of advice, ask Western Farm Life Service Bureau.

The Mother Cow.

BY WHITE EAGLE.

This story is not imaginative, but is of an actual occurrence. It tells of a battle between a cow and a wild animal. The cow, inspired by mother love fought for her offspring, a little calf. The wild animal fought for one of the strongest desires of a wild beast's nature—a meal of live, tender flesh.

She was a large cow; red, with a white face and three white feet. Her horns were medium short and the keen points were black-tipped. Her disposition was kindly and she was a good milker and presented her owner with a healthy young calf regularly each season. She now had a new calf, a very pretty one; white-faced, white feet and a white-tipped little tail.

The cow and calf usually ran in a pasture near the home of the owner,

White Eagle.

White Eagle, the writer of this story, is, as his name indicates, an Indian. His home is at Gillette, Wyo., and he was formerly rural mail carrier on a route in that section. He devotes his time to literary work and most of his stories and sketches are leaves from his own experiences on the plains and in the mountains. He has just returned to Gillette after a year's absence in California and Mexico. While in the latter country he witnessed a bull fight and he has promised Western Farm Life to write a story about it. White Eagle interprets the life of the West with an understanding heart and the precision and directness of truth.

but this particular morning some one had carelessly left the gate open and the two had wandered away till they were near a thicket bordering a creek. A few miles from this thicket we had our camp.

We were up the creek fishing that day and had carried no gun.

The cow had taken her calf to the edge of the thicket and, cow fashion, put it to bed, while she grazed a ways off.

Suddenly from the thicket there came the most terrific bawling expressive of such fright and imminent deathly peril that my companion and I sprang to our feet in consternation and alarm, and faced in the direction of the sound.

What we saw was the mother cow racing toward that thicket with a speed we had thought no cow capable of—a speed we had seen no cow travel before nor since.

When she reached the thicket the frightened bawling of the little calf was drowned by her hoarse, angry bellows and by the growls of some wild animal. We started for that thicket too, with a speed that took us there in time to witness a battle few are permitted to see.

The cow and a large black bear were engaged in mortal combat and fought with a ferociousness that was most exciting to behold.

Had the bear not had hold of the calf and thus been unprepared to meet the cow's first wild rush the fight might not have gone against him. But at the first rush he was struck and knocked over, rolling out of the thicket into the open, the cow right after him, and we had a clear, close view of the fight. The old cow took the fight right to him, bellowing ferociously.

Only once was the bear able to get to his feet. Then with wide open mouth he charged, growling terribly. The cow met him half way, her head down, coming at him like a thunderbolt. One of her sharp horns struck the roof of the bear's open mouth and brought blood in a stream. He fell again, the cow right on top of him, butting and goring. Each time her head struck him the hair flew from his hide in patches.

When the bear finally was able to get to his feet he beat it with all haste into the thicket.

We had got a blanket wet in the creek that morning and had hung it on the bushes to dry. The bear, in his haste, ran into the blanket, and just like some people, in his fury at losing a warm meal and getting a whipping on top of it, he tore our poor inoffensive blanket into shreds with a quickness that amazed us.

The calf had watched the fight. Standing wild-eyed, legs wide apart and his small sides heaving.

When it was all over the mother cow went off across the open; one horn gone, badly clawed about the neck, and with the little calf trotting confidently by the side of his noble mother.

Too Many Shiftless Farmers.

A few years ago when a person who was not a farmer talked about "dry farming" here in southern Colorado, it was in a joking manner, giving the layman to understand that if he wished to work and starve, all one had to do was to move onto a dry farm. At that time we were at a loss to understand the reason for this pessimistic view of people who were not farmers and of people who had lived on dry farms but who never farmed.

However, during our residence in this part of the state on our dry claim we have, we believe, found the solution. Along the Gulf to Colorado highway from Trinidad north you will find adjoining this highway only a few up to date farms in the first twenty miles; farms that are operated in a business like manner. The rest of the farms fronting on this road are "farmed at" by foreigners who do not seem to know how and by Americans who are too shiftless to make a success at any undertaking. This highway is the main artery of travel north and south through the state and during the tourist season, thousands of persons from nearly every state in the Union traverse it as well as the people who live in nearby towns and coal camps, and what they see along the road in the way of farming causes a smile when "dry farming" is mentioned. Most of the would-be farmers scratch the ground in the spring, plant the seed and leave it with no further attention and have a nice crop of weeds which is always as high or higher than any of the grains.

Thus this section and dry farming in general gets a black eye, not only locally but nationally as well, for the tourists see these things and form their own opinions. There is happily another view of this picture. If one would go back one mile and further from this road he will find a great many well kept farms; well tilled fields from which good crops are gathered annually. One would find farmers who have made a success on dry farms and nearly all of east, mostly men who were farmers back east and who have proven they are farmers out west on a dry claim. them homesteaded by men from the A locality is usually judged by what the traveler sees, but in this case it is a false impression and gives this part of the state a reputation not deserved.

Another thing which looked bad was during the period of the war, when all farmers were urged to increase their acreage, these would-be farmers made no more effort than before. Of course, these farmers (?) own their land and there is no remedy we know of unless an educational campaign is waged with these men as special students.—D. B. G., Las Animas county, Colorado.

In renewing subscription to Western Farm Life, Reverend J. J. Davis, Loma, Colo., writes: "I like Western Farm Life fine; it is a good paper, clean and interesting as well as educational."

Take a Real Ride in the Cleveland and You'll Know What a Car It Is

The Cleveland Six, the sensation of the year among light sixes, is selling itself to thousands who use discrimination in picking out the car they want.

To attempt to describe the qualities of the Cleveland Six is no easy task. You must ride in it to know it. Take a real ride and you begin to understand that here is a better light six, very much better. It has an enclosed overhead valve motor, of exclusive Cleveland design and manufacture and tested in road work for three years before being offered the public, that gives performance unsurpassed.

A real ride will show you, better than can be told you, that the Cleveland has power and pick-up and flexibility and ease of driving that do not come with many other cars. Low-hung spring suspension and splendidly upholstered cushions wipe out the road-bumps. Beautiful body lines place the Cleveland above the usual plane in appearance. Upholstery is of genuine hand-buffed leather.

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Colorado State Farm Bureau News

Matter appearing in this department relates to the activities of the State and National Farm Bureaus, including official communications from the Colorado State organization and general reports, calculated to keep farmers informed regarding progress of this great educational movement.

The American Farm Bureau Federation, having a membership of nearly a million farmers, has mapped out a legislative program which promises to be very effective.

An effort is being made to aid in securing needed legislation and to prevent the enactment of vicious measures. The officers of the federation are now giving their attention to one bill of each kind.

The Capper-Hersman bill is one legalizing co-operative marketing. A recent court decision threatens to disrupt or at least seriously handicap every co-operative organization of farmers in Colorado and in America. If this measure fails to be passed managers and directors of various co-operative associations for marketing grain, livestock, milk, cream, potatoes, fruit and other farm produce are in danger of arrest and being subject to criminal prosecution. The one basic principle which underlies the entire farm bureau movement is co-operation. If this foundation work is undermined the whole structure will necessarily collapse. The Capper-Hersman bill seems absolutely necessary at this time to prevent the danger of its becoming a crime to co-operate. Every farm bureau member in America is vitally concerned in the passage of this bill. Every farm organization in the entire country should co-operate without delay as this bill is now in danger of being smothered in committee if farmers neglect to make their wishes known.—E. J. Leonard, Secretary Colorado State Farm Bureau, Fort Morgan.

Farmer C. L. Hover.

Charles L. Hover of Longmont is another of the leading figures in the Colorado State Farm Bureau and chairman of the standing committee on state wide problems. Like his fellow committeemen and officers, Mr. Hover is a farmer, living on his own farm, although leaving the operation of it to a renter. His arrangement with the tenant is in itself evidence of the owner's advanced views in relation to the problem of farm tenancy. The lease is a demonstration of the fact that the interests of owner and tenant are mutual and that the only successful plan is one which provides for upkeep of fertility and a fair deal for both owner and tenant.

Mr. Hover bought the farm on which he is living in 1902, and operated it himself for ten years. Since 1912 he has leased it out under a five-year contract. He has other interests that take up so much of his time that personal operation of the farm is not convenient. The lease gives the owner control of general farming methods and of the crop rotation. This plan has worked out satisfactorily, as renter and owner have been been willing to give and take. In winter they feed the amount of stock necessary to consume the alfalfa grown on one-third of the acreage—it being a 160-acre farm. The manure is put back on the land. Wheat, barley, alfalfa and beets are the crops grown, and only as much beet acreage is handled as can be fairly heavily manured and properly cultivated. A great deal of the wheat and barley is sold for seed, the wheat being pure Marquis and the barley Wisconsin Pedigree. Kanred wheat has been taken up as a winter variety, in addition to the Marquis spring wheat, and it is hoped to have some Kanred seed on the market in another year.

In the feeding operations the renter puts his time against the owner's capital and the two divide the net profits. The renter is given the option of feeding on a salary, if he prefers, but year in, year out, the partnership arrangement has proved better for him. In the event of a loss the renter's losses are limited to the labor he contributes.

Mr. Hover states that the profits on the livestock feeding—which he calls his fertility factory—average about 50 per cent of the profits of cropping operations. This, of course, is not taking into account the upkeep of the soil, through the constant use of manure, which is a factor in the profits from crops grown and sold for cash.

Nothing phenomenal is claimed in the way of results, but the returns are sufficient to make owner and tenant willing to continue under the plan, which has for its ultimate a steady and sure income.

Mr. Hover was not born on a farm and never lived on a farm until 1902. He was reared in a small town where fanning mills were made and in its adjoining wheat fields the twine binder was tested out and perfected. The knotter on the binder was invented by an Englishman who lived across the road from the Hover home. The force behind Applebee, the inventor of the twine binder, was Dr. E. D. Bishop, whose faith in the invention when other townspeople lost interest, did much to make it a commercial success.

Naturally in such surroundings a youth hears much of agriculture and it was so in Mr. Hover's case. Rotation and maintaining the fertility were household topics and when Mr. Hover decided, in 1902, to take up farming, these fundamental ideas had been impressed upon his consciousness. He started with these ideas in mind and he has never given an inch in the conviction that the farm owner is responsible to the nation for preserving the heritage of the soil. This idea is carried out in practice on the Hover farm near Longmont. When Mr. Hover, therefore, arises in the councils of the State Farm Bureau and discusses agricultural problems his words command attention. He knows whereof he speaks and his course of action on the farm coincides with his words.

We did desire to publish a photograph of the subject of this sketch, but he declined to furnish it for the very good reason that he had been a stranger to the camera for many years—which is a sufficient excuse.

Farm Bureau in Michigan.

The great interest of the farmers here, as it is in practically every other state, is the Farm Bureau. The membership fee is $10 per year and in many counties 90 per cent of the farmers are members. The work of the bureau is so well known that the carrying on of membership campaigns is a pleasure. I believe the farmers here join for a period of two or three years. Their chief interests are along co-operative marketing lines—the potato growers being speciallly well organized. The fruit men have their organizations, which are proving successful, many of them having been in existence for ten to fifteen years. Another farmers' organization which is quite influential here and which we never heard of in Colorado is the "Gleaners." Their chief interest seems to be co-operative marketing. They own and control many of the large grain elevators in this state. Of course the Grange work is also strong.—R. R. Jeffries, East Lansing, Mich. (Formerly County Agent in Fremont county) in letter to Fremont County Bulletin.

It is time for the Colorado State Farm Bureau to take up the question of wages for harvest hands. Kansas is considering the matter, a conference having been called for May 3rd at Hutchinson, at which time it is hoped to work out a schedule to be adhered to for the summer in the wheat districts. Last year the standard wage for the Kansas wheat fields was 50 cents an hour for a ten-hour day. This was not strictly adhered to, the records showing that as high as $7.50 per day was the average wage in a few counties, while others paid as low as $3.50. In one community the high mark of $15 a day was reached. Employment bureaus which are preparing to furnish harvest labor are talking of an increase of 5 to 7 cents an hour over last year's schedule.

The West's Advantages.

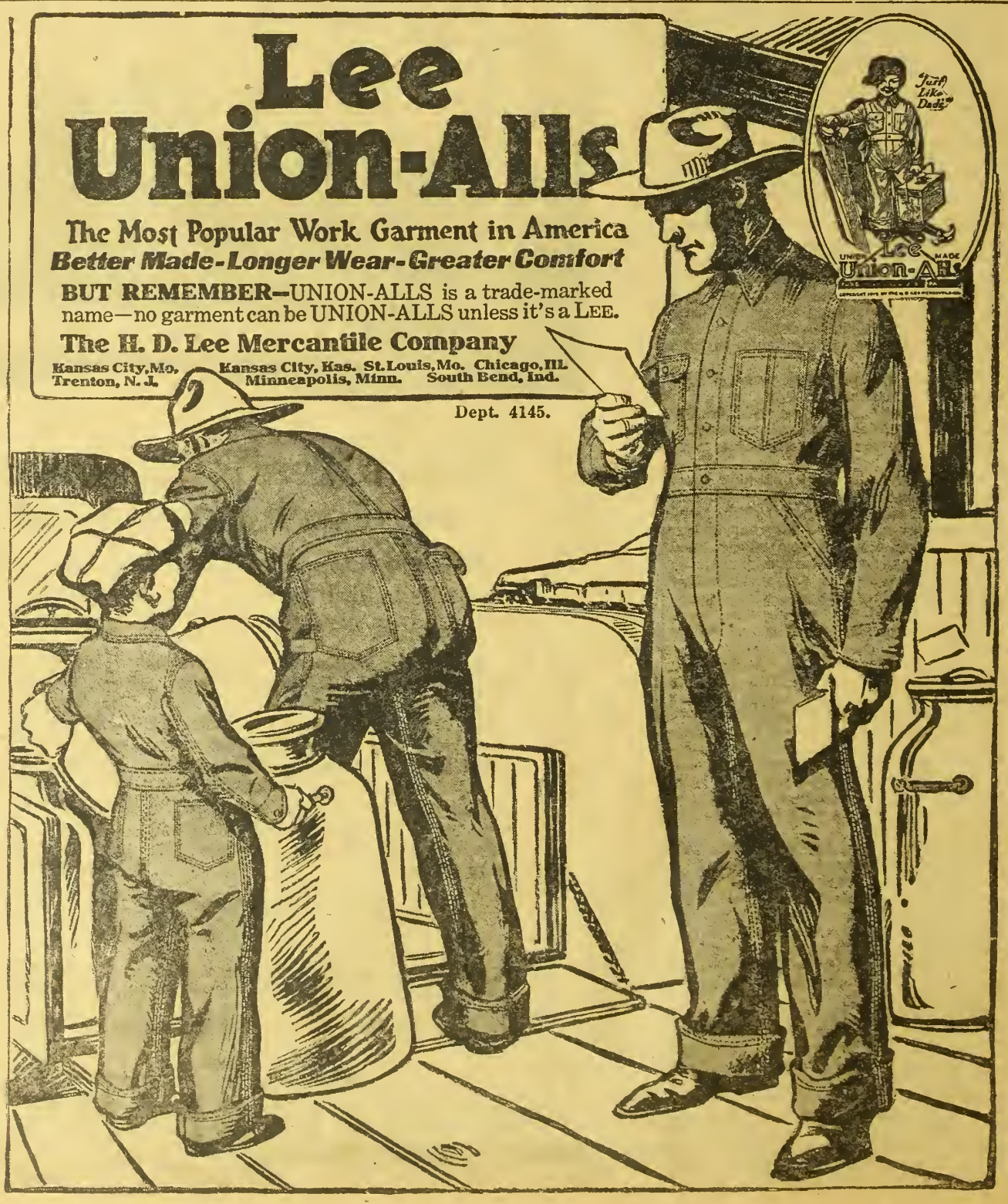
There is an old saying that one-half of the world don't know what the other half is doing, and there must be some truth in the old adage even if we do have daily papers, telephones and other means to hurry up communication with all parts of the country.

If the people of the eastern states who are farming high priced land and those who are renting and paying the landlord enough to buy a farm in Colorado every year, to say nothing of the land hungry wage earner in the large cities, if these could only realize that there are thousands of idle acres here in the west that will produce crops equal to land that is selling for $100 to $300 per acre. This western land can be had at a price that suits the poor man's pocketbook and the crop raised on it the first year will pay for the land and then some.

The low price is not all the advantage to be found here in the land of sunshine, for we have a climate that brings health and vigor to man and beast and the absence of many of the ills and pests that beset the eastern farmer, such as insects and contagious stock diseases, all of which makes for profit and satisfaction.

This country has no bad storms of lightning, hail or wind. In fact, we have a most even temperature both winter and summer. We are within easy reach of the mountain scenery that the rich people of the east come to visit for health and recreation. In fact, we are in on the ground floor, but would like to see others enjoy some of the blessings that the Creator has lavished so bountifully on the valleys and plateaus of this western country.

This was an old Indian reservation and has not been settled long, but almost every one who has come here has stayed, which is quite different from the experience of most new countries that settle up three or four times before they stick.—R. H. Bane, Ackmen, Colo.



Sudan Grass as Pasture.

L. E. CALL and J. B. FITCH, Kansas Experiment Station.

Sudan grass is the best annual pasture crop for Kansas now known. It can be grown in any part of the state but is especiallly valuable in central and western Kansas. It makes its greatest growth and produces the most feed during July, August and September, when other tame grasses and native grass pastures are the least productive. It can therefore be used to the best advantage to supplement these pastures. Many dairymen find that milk production declines very noticeably during July, when they depend upon native pastures alone. If the cows can be turned upon Sudan grass during the summer months, milk production will not only be maintained but the native pastures will be rested and improved, so that much better feed will be available during the late fall months than if they had been used continuously. Many farmers in Kansas have used Sudan grass successfullly for pasture for dairy cows, and its use for this purpose is rapidly increasing. There is good reason to believe that it should be used more extensively.

A Pasture Test at Dodge City.

One of the first tests with Sudan grass for pasture was conducted at the Dodge City Branch Experiment Station in 1914. On May 20 of that year three acres of Sudan grass were planted at the rate of 23 pounds of seed per acre, using an ordinary grain drill for seeding. A good stand was secured and stock was turned into the pasture on June 24. More stock was used than the pasture would carry continuously, so that at times it was necessary to run the cows on good native buffalo sod. During the season the three acres of Sudan grass produced the equivalent of 375 days' pasture for one mature animal. The records show that the milk flow increased an average of 3.2 pounds daily per head each time the cows were turned upon the Sudan grass pasture.

Experiments in Eastern Kansas.

In order to obtain information under eastern Kansas conditions an experiment was conducted by the Department of Agronomy and Dairy Husbandry of the Kansas State Agricultural College at Manhattan during the summer of 1919. On May 21, 1919, a 5.4-acre upland field was seeded to Sudan grass at the rate of 17 pounds per acre. On account of cold weather and heavy rains it was necessary to reseed the field on June 6. The growth was very satisfactory and on July 10, six Holstein cows were turned into the field. At this time the Sudan grass was three to four feet high. The cows should have been turned on about two weeks earlier, difficulty in getting help accounting for the delay.

The cows had previously been fed on alfalfa hay, silage, and grain. They showed no hesitancy in eating the Sudan grass from the start. They had free access to salt and water. A shelter was made for them were they were fed and milked.

In addition to the pasture the cows were fed a grain mixture of 400 pounds of corn, 200 pounds of bran, and 100 pounds of oil meal. This was fed in the proportion of one pound of grain daily to each four pounds of milk produced. An exact record was kept of the grain fed and the milk produced. The cows were weighed before being turned on the pasture and again each ten days thereafter. Composite samples of the milk were taken every ten days and tested for butterfat by the Babcock method.

On account of its rank growth much of the tall grass was not eaten, and it was thought advisable to mow half of the field. Two weeks later the other half was mowed. Altogether 7.33 tons of field-cured hay were harvested. After the first of August, the cows had no difficulty in keeping the grass eaten down. The rainfall for July, August and September was very light, but in spite of this fact the grass was able to support the cows until frost. The cows were taken off the pasture on October 11.

Considering the hay that was taken off, it may be concluded that the 5.4 acres of pasture were more than enough to support the six cows during the dry summer of 1919.

The following table gives in detail the weights of the cows at the beginning and end of the experiment, the milk and butterfat produced, the value of the fat and skimmed milk, the value of the grain fed, and the value of the pasture above the cost of feed:

Table Showing Results of Pasturing Sudan Grass With Dairy Cattle.

Cow No.	Wt. at Start Pounds	Wt. at Close Pounds	Gain or Loss Pounds	Milk Produced Pounds	But'rfat Produced Pounds	Val. of Butterfat and skimmed Milk	Grain fed Pounds	Value of grain	Value of pasture above cost of feed
19	1343	1302	—41	2658.5	82.08	$60.54	684.00	$20.52	$40.03
16	1325	1267	—58	2473.9	92.19	65.82	656.50	19.69	46.14
102	1175	1200	25	1104.3	37.92	27.44	366.25	10.98	16.46
114	1248	1185	—63	334.5	93.87	70.49	870.75	26.12	44.37
106	1375	1397	22	2104.8	64.01	47.35	595.00	17.85	29.51
112	1391	1380	—11	587.2	19.11	14.46	263.25	7.89	6.58
Total..	7857	7731	—126	12263.2	389.18	$286.14	3435.75	$103.05	$183.09

These data show that the six cows lost 126 pounds during the three months. This is an average of 21 pounds per head for the lot. This loss is not as great as generally occurs when cows are on pasture during dry summers.

The average production of butterfat and milk was low, due to cows Nos. 102 and No. 112, which did not hold up their production as did the others. This fact is not attributed so much to the feed as to their lack of persistency.

In order to estimate the value of the pasture under average farm conditions, the amount of butterfat produced has been estimated at 60 cents per pound, and to this has been added the value of the skimmed milk at 50 cents per hundred, assuming that each 100 pounds of milk would make 85 pounds of skimmed milk. The six cows, on this basis, produced $183.09 worth of butterfat and skimmed milk above the cost of grain. Crediting the pasture with 7.33 tons of Sudan hay at $10 per ton, gives a total credit of $256.39, or $47.47 per acre of the Sudan grass pasture. Calculated on the basis of whole milk at 30 cents per gallon, each acre of pasture returned $73.55 above the cost of grain.

Seeding Sudan Grass for Pasture.

Sudan grass should be seeded on ground that has been plowed and worked into good condition. It is a good practice, when possible, to plow in the fall. When this cannot be done the ground should be plowed as early in the spring as weather and labor will permit. It may then be worked into good condition, but the seed should not be sown until the ground is warm. The middle of May is sufficiently early to seed in southern Kansas. In northern Kansas it is often advisable to wait until the first of June before seeding. Nothing is gained by earlier seeding. The grass will not grow until the weather is warm. If it is sown too early and the weather turns damp and cold the seed often rots and a poor stand is secured.

In the eastern part of the state, Sudan grass for pasture should be seeded at the rate of 20 to 25 pounds to the acre. In western Kansas, 15 to 20 pounds is better. If insufficient seed is used weeds may give trouble.

The seed can be planted to the best advantage with a grain drill. A wheat drill set to sow two pecks of wheat to the acre will ordinarily sow about 30 pounds of Sudan grass seed to the acre.

The crop should be ready to pasture in about one month after seeding if the weather is favorable.

Danger of Poisoning.

It should be remembered that Sudan grass belongs to the sorghum family. On certain occasions hydrocyanic acid, one of the most dangerous poisons, has been found in almost all the sorghums. Sudan grass is no exception. This poison is most likely to be present in an immature crop after a period of drouth or after the growth of the plant has been arrested in some manner. It is not advisable to turn cattle upon Sudan grass when the crop has been stunted by dry weather. When the crop is growing normally there is very little danger in pasturing.—Circular No. 30, Kansas Agricultural Experiment Station.

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An Arden Farms Trade With Loesch Brothers.

One of the important transactions among Holstein breeders of Colorado was the recent trade between Arden Farms of St. Paul, Minn., and Pahgre Valley Ranch owned by Loesch Brothers of Montrose, Colo. In 1917, Loesch Brothers purchased from Arden Farms the bull Sir Johanna Bess Segis, then a yearling. This bull, it will be remembered, was sired by Piebe Laura Ollie Homestead King, who is now making strides in the way of siring high record daughters. The dam of Sir Johanna Bess Segis is a near 1,100 pound daughter of King Segis Pontiac Count, which bull has more 1,000 pound daughters to his credit than any other bull of the breed at his age.

Since their purchase of Sir Johanna Bess Segis his dam made her yearly record mentioned above of nearly 1,100 pounds. Mr. Hackney of Arden Farms suggested an exchange that should be beneficial to both the Pahgre Valley Ranch people and Arden Farms. For a half interest in Sir Johanna Bess Segis, Arden Farms gave a half interest in King Bess Abbekerk Pontiac Segis, who is out of King Abbekerk Pontiac Segis, a son of King Segis Pontiac Count and a 1,227 pound yearly record cow. The dam of King Bess Abbekirk Pontiac Segis is the noted foundation cow Wisconsin Bess Piebe Laura. She is also the dam of the sire of Sir Johanna Bess Segis. This bull offers a most unusual opportunity for constructive line breeding on the Pahgre Valley ranch at Montrose, where there are a number of daughters of Sir Johanna Bess Segis. Wisconsin Bess Piebe Laura appears in the pedigree as the dam of Piebe Laura Ollie Homestead King, grand dam of Sir Johanna Bess Segis and dam of King Bess Abbekirk Pontiac Segis.

This exchange brings to Colorado some of the best known breeding among Holsteins. The Loesch Brothers are building right and will be heard from in the future as breeders of high class cattle. They are nicely situated for feed and climate so that they have much in their favor.

Both Arden Farms and Pahgre Valley Ranch are taking advantage of the government accredited herd plan and are keeping their herds free from tuberculosis. This fact will mean much to them in the future, as it is safe to predict that the time will soon come when accredited rating with the government will be considered next to the records of production made by the cows, when it comes to the sale of stock.—H. A. L.

Feed and Production Record Of Government Test Holsteins.

Feed and production records, which should be of interest on account of the accuracy with which the nutrients fed could be calculated, were obtained during the past year on seven Holstein-Friesian cows at the Beltsville (Md.) experiment farm of the Dairy Division, United States Department of Agriculture. These cows, which are a part of the foundation herd used in a line-breeding and inbreeding project in charge of R. R. Graves, have now completed their first semi-official yearly test as heifers, and in accordance with the plan of the breeding work they will be tested later on as mature cows.

The cows are fed in such manner as to show their producing capacity, though no attempt was made to force them to extremes. The animals were not run on pasture, and did not receive any green feed during their lactation period. Consequently full and accurate records of all nutrients consumed are available. All of these cows were milked three times a day throughout the year's work. All test animals are handled under as uniform conditions as possible, in order that the records of the next generation, when made under the same conditions, may be comparable. The names and herd numbers of the animals that completed their records are:

No. 228. Gerben Queen Segis Cornucopia 294761.

No. 227. Beauty Korndyke Gerben 288919.

No. 229. Mercedes Laura Ollie 307236.

No. 230. Watson Segis Pontiac Homestead 316969.

No. 231. Lone Star Pontiac Segis 2d 323757.

No. 214. Lady Colantha Walker 365573.

No. 225. Lone Star Pontiac Segis 239068.

Cows 228 and 227 are daughters of Hazelwood Korndyke Gerben 98063. Cows 229, 230 and 231 are daughters of Piebe Laura Ollie Homestead King 110474. No. 214 is a daughter of Johan Woodcrest Lad 11th 103987, and was bred at Beltsville. No. 225 is a daughter of King Segis Pontiac Count 93909.

All the animals in this list, with the exception of No. 214, were shipped from Minneapolis on March 22, 1918, arriving at Beltsville on April 1. With the exception of No. 229, there was no time for any special fitting, and in fact all were in ordinary condition at time of calving. No. 228 freshened April 4; No. 231 freshened April 10; Nos. 230 and 227 freshened April 18; No. 225 freshened April 29, and No. 229 freshned May 28. The accompanying table gives a summary of the production and feed consumption, also the age of the animals at the time the test was started:

Herd No.	Age test Started	Pounds Milk Produced	Per cent Fat	Pounds Fat Produced
230	2 yrs. 1 mo.	20,352.1	3.29	671.505
229	2 yrs. 6 mo.	20,063.7	3.11	625.9
228	2 yrs. 7 mo.	15,001.1	3.24	486.133
227	2 yrs. 8 mo.	17,753.0	3.49	619.37
225	4 yrs. 2 mo.	21,455.3	3.16	679.99
231	2 yrs. 26 dys.	16,670.7	2.98	498.33
214	2 yrs. 2 mo.	17,843.7	3.06	546.85

Herd No.	Digestible Nutrients per 1,000 Lbs. Milk	Digestbile Nutrients per 100 Lbs. Fat	Digestible Nutrients per 100 lbs. T'l Solids	T't'l Digestible Nutrients Consumed
230	502.8	1,525.0	422.5	10,233.1
229	477.5	1,532.6	396.4	9,578.9
228	621.1	1,917.0	517.6	9,316.7
227	539.4	1,547.0	435.0	9,576.03
225	490.8	1,548.4	427.1	10,529.1
231	546.3	1,828.9	479.3	9,108.3
214	543.9	1,777.2	460.9	9,703.6

Composition of Grain Ration.

The grain mixture that was fed to these cows was made up of the following feeds, by weight:

Cornmeal .....2 parts
Gluten feed .....2 parts
Wheat bran .....2 parts
Oats .....3 parts
Dried brewers' grains..2 parts
Cottonseed meal .....2 parts
Linseed oil meal .....3 parts

Molasses was fed at the rate of 0.6 pound per day after December 1, 1918. The dried beet pulp was fed after being soaked in water. It should be borne in mind that these cows were not fed from the viewpoint of economy of production, but rather to ascertain their producing capacity.

Herd No.	Feed Consumed: Grain. Lbs.	Beet Pulp. Lbs.	Alfalfa Hay. Lbs.	Molasses Lbs.	Corn Silage. Lbs	Nutritive Ratio of Rat'n
230	6,468	2,033	4,462	146	8,902	1:4.2
229	5,581	2,251	4,336	182	8,196	1:4.3
228	5,543	1,692	4,344	132	9,394	1:4.2
227	5,803	1,912	4,340	143	8,822	1:4.2
225	6,613	2,410	4,466	159	8,315	1:4:2
231	5,399	1,781	4,374	136	8,333	1:4.2
214	5,991	1,886	4,336	182	8,758	1:4.2

It will be noted that there is a considerable difference in the amount of total digestible nutrients consumed per 1,000 pounds of milk produced; per 100 pounds of fat produced, and per 100 pounds of solids produced.

There was very little difference in the size of cows 231 and 214, yet No. 214 produced 1,173 pounds more milk and

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48 pounds more fat than did No. 231, and consumed slightly less digestible nutrients per 1,000 pounds milk and per 100 pounds fat produced.

Troubles Suffered by Cows.

All the cows shipped from Minneapolis suffered severely from heat during the first summer at Beltsville, Md. No. 228 was troubled some with foot rot, and was also used in a water experiment from November 5 to March 28. No. 227 was troubled for some six weeks following the freshening by an obstruction in one teat. No. 231 was off feed at two different times as a result of bloating from alfalfa hay. No. 229 was very sick in December of her test from compaction followed by a slight case of pneumonia, and lost considerable weight during her illness.

All of these animals made considerable gains in weight during their tests. Undoubtedly a part of the surplus digestible nutrients consumed over the amounts required for production and maintenance were used for this growth and gain in weight. The surplus of digistible protein consumed was much greater than the surplus of total digestible protein consumed was much tle for large production have long thought that the narrower ration acted as a stimulus to greater production. From the standpoint of economy the narrower ration is no more costly than a wider ration, at present prices of feeds.

Feeding Forage to Pigs.

During the summer of 1917 the Pennsylvania State College conducted an experiment comparing self-feeding and hand-feeding methods of fattening swine on forage crops. Fifty spring pigs were divided into two lots of 25, and each lot was given one acre of range. The forage consisted of ½ acre on which had been sown 15 pounds of oats, 15 pounds field peas and 4 pounds of medium red clover. The other half-acre was sown to 4 pounds of rape and 4 pounds of medium red clover. No fence was used in dividing the two half-acre plots, so that the pigs had access to all the forages mentioned at all times.

The self-fed pigs had access to cornmeal, middlings and tankage at all times. The hand-fed pigs received cornmeal 14 parts, middlings 3 parts, and tankage 1 part. Near the middle of the fattening period the mixture for the hand-fed lot was changed to 14:2:1, and near the end to 14:1:1. This was done in order to provide the feeds in about the same proportion as they were being taken by the self-fed lot. The hand-fed pigs received their feed three times daily in the form of a thick slop. The feed was given wet because it is generally conceded that wet hand-feeding gives better results than dry hand-feeding. Particular attention was given to providing water frequently and regularly to both lots.

The experiment was commenced June 15 and ended September 28, covering 105 days. The pigs varied a great deal in weight at the beginning, so that a few animals in each lot were of marketable weight sooner than the others. Accordingly the heaviest pigs were removed from both lots and marketed August 10. At this time the number of animals in each lot was reduced to 18. Previously to that date two pigs had been lost in the self-fed lot, and another unthrifty pig in the same lot was lost September 15, leaving 17 animals in the self-fed lot and 18 in the hand-fed lot at the close of the experiment.

Table 1 shows the gains, cost of gains and feed consumed. Corn was charged at $2 per bushel, with the addition of 10 cents per hundred for shelling and grinding, middlings at $58, and tankage at $80 per ton.

It will be noted that the total gain per pig is greater in lot 1 than in lot 2, although the average daily gain is the reverse. This is because of the loss of the three animals in lot 2, which decreased the average final weight of the pigs in this lot, thus decreasing the total gain per pig. In other words, if these three animals had not been lost the average final weight and the corresponding average gain per pig would have been slightly greater in lot 2 than lot 1.

The average daily gain for the two lots is nearly equal, the self-fed lot being slightly ahead. The notable difference brought out by this table is in the amount of grain required per 100 pounds gain, being 352.4 pounds for the hand-fed lot and 413.7 pounds for the self-fed lot. This shows that the hand-fed pigs made better use of their forage than the self-fed pigs. This point was borne out by examining the two lots at different times. The difference in the amount of forage consumed was especially noticeable on the oats and field peas, as these disappeared in the hand-fed lot about four weeks before they did inthe self-fed lot. The difference was not so noticeable in the amount of rape consumed, for the rape was about the same at the close of the experiment in both lots. The growth of rape was luxuriant in both lots at the last, the animals gradually losing their appetite for forage as the fattening period progressed.

Table 1.

	Lot 1. Hand-fed.	Lot 2. Self-fed.
Average initial weight	57.97	58.74
Average final weight	192.2	192.8
Average gain	134.24	134.06
Average daily gain	1.47	1.52
Grain per 100 lbs. gain	352.4	413.7
Average daily feed	5.15	6.15
Cost per 100 lbs. gain	$13.06	$15.06

Table 2.

	Lot 1. Hand-fed.	Lot 2. Self-fed.
Pork produced	3,356	3,351.5
Cost	$438.35	$504.99
Sellingprice	604.08	603.27
Profit	165.73	98.26

Table 2 shows the pork produced per acre, the cost, selling price and the profit per lot. In calculating the total cost the following were taken into consideration: Preparing the ground and seeding it, cost of seed, interest on investment and the cost of grain consumed. The same figures were used for both lots. The labor required for feeding and care was approximately the same in each case, the self-feeders requiring attention several times each day to prevent the feed from clogging.

The hogs were sold at the close of the experiment for $18 per cwt. over the college scales. Deducting shipping expenses this would be approximately the equivalent of $19 per cwt. at the nearest central market.

From Table 2 it is seen that the total pork produced in each lot is nearly the same, being 3,356 pounds for the hand-fed lot, and 3,351.5 pounds for the self-fed lot. The fact that the self-fed lot lost three animals during the course of the experiment gives it a slight disadvantage in total gain. Since the first two were lost just a short time before reducing the number in the lots, and the last one shortly before the close of the experiment, the effect is not great, as the gains which the pigs had previously made are included in the total.

In this table the outstanding feature is the increased cost of production of self-feeding as compared with hand-feeding. The greater cost resulted entirely from the increased amount of grain required to produce 100 pounds of gain in the self-fed lot. The profit on the pork produced per lot was $165.73 for the hand-fed pigs, and $98.26 for the self-fed pigs, showing that in this case self-feeding for growing and fattening young pigs on forage crops did not prove so profitable as hand-feeding.

In regard to the value of the forage crop mixture mentioned, it is deemed advisable to eliminate the clover, as it failed to get a start after the pigs were turned in. The oats, field peas and rape should be sown over the entire acre instead of limiting the oats and peas to one-half of the acre and the rape to the other half.—L. P. McCann, Mesa Co., Colo., in the Breeders Gazette.

Selling Silage Too Cheap.

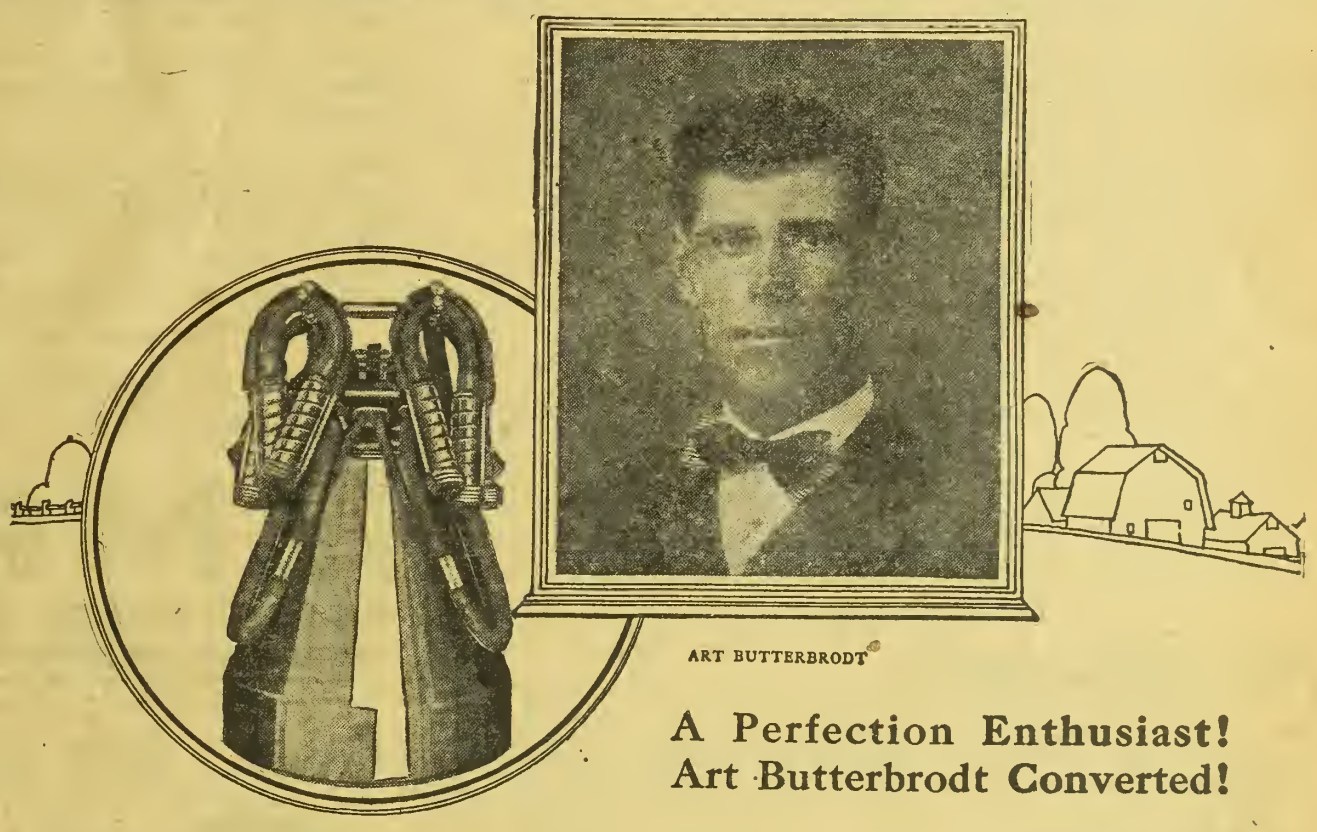
The following letter was written by Prof. R. W. Clark, Livestock Extension Specialist of Colorado Agricultural College upon inquiry concerning the price of silage in the Arkansas Valley:

"Word has come to me from the southern part of the state that certain cattle feeders are trying to convince the farmers that silage has a low food value and are buying silage from the farmers at a greatly reduced price. The Arkansas Valley produces as good silage as can be produced anywhere and if anything, it has a higher food value than silage in many parts of the state because it carries a large amount of corn.

"Corn yielding as high as 100 bushels to the acre has been put in the silos in the Arkansas Valley, and any farmer who will sell silage as low as $7 per ton certainly has little knowledge of its food valuation. Silage in nearly every section of the state has been selling for about $12 per ton for the last two years.

"Any farmer desiring information on the feeding value of silage should write to the Agricultural College at Fort Collins.—(Signed) R. W. Clark."

If in need of advice, ask Western Farm Life Service Bureau.



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For Irrigated Pastures.

The following suggestions on pasture issued by B. M. Reed, tester of the Arkansas Valley Cow Testing assocation at Lamar, are applicable to practically all irrigated sections of the west:

It is well to remember that a pasture of native grass is not good for dairy stock when it is not supplemented with a legume grass such as alfalfa. However, when alfalfa is fed, the combination does very well. It is also to be understood that grain is to be fed, for without it the cow cannot obtain food enough to produce her best. When pasturing sweet clover, care must be taken to keep the cows off of it when it is wet or damp, for it will cause bloat. It is not so bad as alfalfa, but numerous cases of bloat have been reported from Rocky Ford. The age of plant does not seem to have any effect, for it seems to bloat as bad when young as when old. The State Agricultural College is recommending that the "Morton Mixture" be tried out in this district. This is as follows:

Orchard grass	14 lbs.
Awnless brome	12 lbs.
Meadow fescue	8 lbs.
Tall meadow oat	4 lbs.
Timothy	6 lbs.
Alsike clover	1 lb.
White (Dutch) clover	1 lb.
Yellow sweet clover	4 lbs.
Total	50 lbs.

On low-lying wet soils reduce the orchard grass and brome grass, adding some timothy and red top. Heavy seeding is necessary to get an early sod. In order to get a first-class pasture a perfect stand must be obtained, so take pains with it. Sow with a light cover crop and remove the crop as soon as cut. Take a crop of hay the second season to allow the grasses to become well rooted before pasturing. For horses or hogs use alfalfa pasture, or in high altitudes a mixture of alsike clover and timothy.—B M. Reed, tester.

Saguache Buys Holsteins.

Saguache county, Colorado, in the San Luis valley, is going in for dairy farming. A carload of Holsteins has just been brought in from Wisconsin by County Agent W. O. Sauder. He learned the value of a breeder's association when he came in contact with the dairy farmers of Waukesha county. This association employes two paid secretaries and a clerk to handle the business of the breeders in disposing of their stock. Farmers join the association on payment of a fixed fee and for every animal belonging to them sold through the association they pay a commission, which goes into the fund for keeping up the sales organization. Advertising is done by the association jointly; in fact, all sales expense comes out of the treasury. The results are two-fold: wider advertising is possible by reason of the funds available, and the sales expense to the individual breeder is cut down. For the buyer the plan offers many advantages, not the least of which is the service rendered by the paid officers of the association, who can take the buyer to the farms that have the kind of stock he is after. No long hunt is necessary; the secretaries know what the association has to offer and no time is wasted by the buyer.

County Agent Sauder's report on the purchase, as given to the farmers of his county through their official bulletin, is as follows:

Those interested in good dairy stock may be wondering what kind of stuff was brought from Wisconsin. It is only fair that the public should know about the records and breeding of it. When talking of a 30 pound bull for example we mean that the bulls mother produced 30 pounds of butter fat in seven days. The eight purebreds brought in have good records. These follow:

Three heifers sired by 22 lb. bull. Dams all over 40 lbs. milk daily.

One heifer sired by 30.54 lb. bull. Dam 50 lbs. milk daily.

One bull calf sired by 20 lb. bull. Dam over 40 lbs. milk daily.

One bull calf sired by 27 lb. bull. Dam 50 lbs. milk daily.

One bull, 1 year, sired by 27 lb. bull. Dam 50 lbs. milk daily.

One aged bull sired by 25 lb. bull. Dam 47 lbs. milk daily.

The farmers do not as a rule keep records on grade cattle. But in all cases we were able to get what the dams were milking at the time we bought the stuff. The records of the sires of course are known since they are all pure breds.

Grades.

Two bred heifers sired by 33 lb. bull. Dams over 40 lbs. milk daily.

Two bred heifers sired by 25 lb. bull. Dams over 40 lbs. milk daily.

One bred heifer sired by 22 lb. bull. Dam over 40 lbs. milk daily.

One bred heifer sired by 20 lb. bull. Dam over 40 lbs. milk daily.

Three open heifers sired by 22 lbs. bull. Dams about 40 lbs. milk daily.

One bred heifer sired by 25 lb. bull. Dam over 40 lbs. milk daily.

Two calves sired by 20 lb. bull. Dam over 50 lbs. milk daily.

One calf sired by 12 lb. bull. Dam aver 40 lbs. milk daily.

One calf sired by 22 lb. bull. Dam over 40 lbs. milk daily.

One calf sired by 25 lb. bull. Dam about 45 lbs. milk daily.

One calf sired by 20 lb. bull. Dam about 40 lbs. milk daily.

All of the cattle were fed on corn ensilage in their home barns. In addition to ensilage they received bran in some cases, oats chop in others, brewers' sprouted barley and some received molasses on the feed. Only two farms in the whole country were noted where no silo existed. It is needless to say that these farmers were back-numbers in their community. Without silage the dairy industry in Wisconsin would not amount to a row of beans. The cost of feed without silage would be prohibitive. As it is the farmers are getting 8c per quart for milk at their front door. Many farmers figured out that they fed the calves more milk than the price of the animal would bring. All calves are bucket fed with oats and alfalfa hay always before them. None of the cattle imported have been out of the barn since last November owing to the severe winter in that section. It was necessary to go about buying this stuff in a bob-sled which is slow business. Indications are that when the weather opens up there will be a rush for Waukesha county to buy dairy stuff. But we beat the rush and got the pick of the good stuff. Owing to the extreme gentleness of the cattle it was possible to feed and water them in the car, thus avoiding the cold weather.

Paralysis of Pregnancy.

Ans. to G. H. B., Kiowa County, Colo.

Paralysis of pregnancy (paraplegia) is not uncommon with cows. The disease generally appears two or more weeks prior to the normal time for parturition. Paralysis of the hind limbs comes on more or less suddenly while the cow otherwise appears to be in the best of health. The fetus is alive and apparently normal. The paralysis persists, should the animal survive, until parturition, after which it invariably disappears. This condition must not be confused with milk fever, which usually appears after parturition and is accompanied with very severe symptoms. The cause of parturition paralysis has not been fully determined. It is most likely due to the weight of the fetus affecting the motor nerves which control the hind limbs. Bulky food would tend to aggravate the condition. The thing that is hard to account for is the fact that the disease sometimes becomes enzootic. In some cases as high as 10 per cent of pregnant cows are affected. The tendency for the paralysis to disappear after calving may be accounted for by the decreased load as well as the release of the drain upon the maternal system from the nutritive demands of the fetus. There is of course no way of relieving the mechanical weight of the fetus. Animals in perfect health, if kept for long in a recumbent position, will die. Bulky food during late pregnancy should be avoided. When the first symptoms appear it will be well to give a physic of salts; feed grain, roots, ensilage, and sparingly of hay. Nux vomica in dram doses might be given, mixed with the feed. The animal should be given a comfortable, well-bedded, dry stall, and be turned several times daily. Hastening parturition is sometimes successful but on the whole is dangerous. This procedure would be warranted in cases where the paralysis appeared several weeks in advance of the end of the period of gestation. Only a competent veterinarian should undertake to perform the necessary operation. This must not be undertaken unless conditions are such that the strictest aseptic precautions are possible. The care, and especially the feeding of pregnant cows, is important. They should be kept in good condition, with opportunity for exercise, and provided with abundant nutritious food that is not too bulky. The matter of a balanced ration should not be overlooked.—G. H. G.

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Noted Milking Shorthorn Sire.

The Pine Valley Dairy and Farms Co. of Colorado Springs, have recently purchased a herd sire for their Milking Shorthorns. Seeley G. Rose, manager of the farm, reports that the bull was purchased from William Hartnett of Chicago. The record of the bull's dam is of interest. She produced 10,970 lbs. of milk in 42 weeks during her last lactation period. During her present milking she has produced 12,390 lbs. during the first 37 weeks. The bull is known as Master Sam. He was sired by Garbity Lord Mayor. The Pine Valley Dairy and Farms Co. have some very good records of production on the cows in their herd. With the addition of this bull to cross on these cows something exceptionally good can be expected in the way of production from the offspring.—H. A. L.

Garmesa Farms Holstein Sale.

The dispersal sale of Holsteins held recently at the Garmesa Farms at Fruita, Colo., was very satisfactory from every point of view. The great big point in its favor was the fact that everything staid in the vicinity, showing that the people are becoming interested in purebred stock. The Holsteins developed on this farm were extremely well bred and they represent some of the noted families of the breed. It is to be regretted that we are to lose from Colorado so live a breeder as Robert Lazear, who has been in charge of the Garmesa Farms. The average price received for all cows and bred heifers was $443. The sale average for bulls and females, both young and old, was $285.—H. A. L.

A Good Fly Repellant.

With warm weather comes the fly and the fly is no friend of the horse. Humane drivers try to protect horses from insects. Here is a recipe for an inexpensive wash that is very effective:

Oil of bay berries..... 5 parts
Napthalene ....10 parts
Ether ....16 parts
Methylated spirit .....60 parts

These are common chemicals found in all well stocked drug stores, so there is no difficulty about getting the mixture whenever it is needed.

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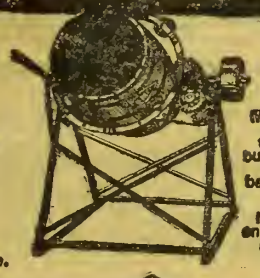

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Practical Suggestions for Organizing Wool Pool.

(Continued from Page 4).

co-operative sale on one day of each week and that anyone interested might consign his wool there with the understanding that it would be sold through a committee elected from the consignors, that all expense in connection with the storage, insurance and sale of the wool would be prorated by weight against all wool consigned, that each consignor in the pool would have but one vote in the transaction of any business connected with the pool, and that all wool would be insured against loss by fire on the day it was delivered to the warehouse.

Due to strong opposition to the pool on the part of local buyers and the fact that these buyers at once began offering as high as 45c and 50c per pound for the larger clips, which they represented as being more than the market would justify, coupled with the newness of the idea, most growers sold. However, some thirty growers delivered their wool at the warehouse in lots ranging from 50 pounds to 1,500 pounds. Each consignment was marked with the weight and the owner's initials and a receipt for the same was issued by the weigher. Something over a carload was taken in and the pool was sold to the highest bidder for 63c straight, a saving to the producer of probably $2,500 or $3,000 above what they would have realized for the same wool without the pool. The total cost of handling amounted to about ½c per pound. The following year co-operative selling extended into several counties in that part of the state and in 1919 the movement had become still stronger, with a prospect for a further extension this year.

Reports from all available sources indicate that the 1920 wool market is uncertain with an apparent tendency toward a slight decline as compared with 1919 prices. In view of this tendency co-operative pools become more imperative for the sake of stabilizing the market and insuring a fair price to the small grower.

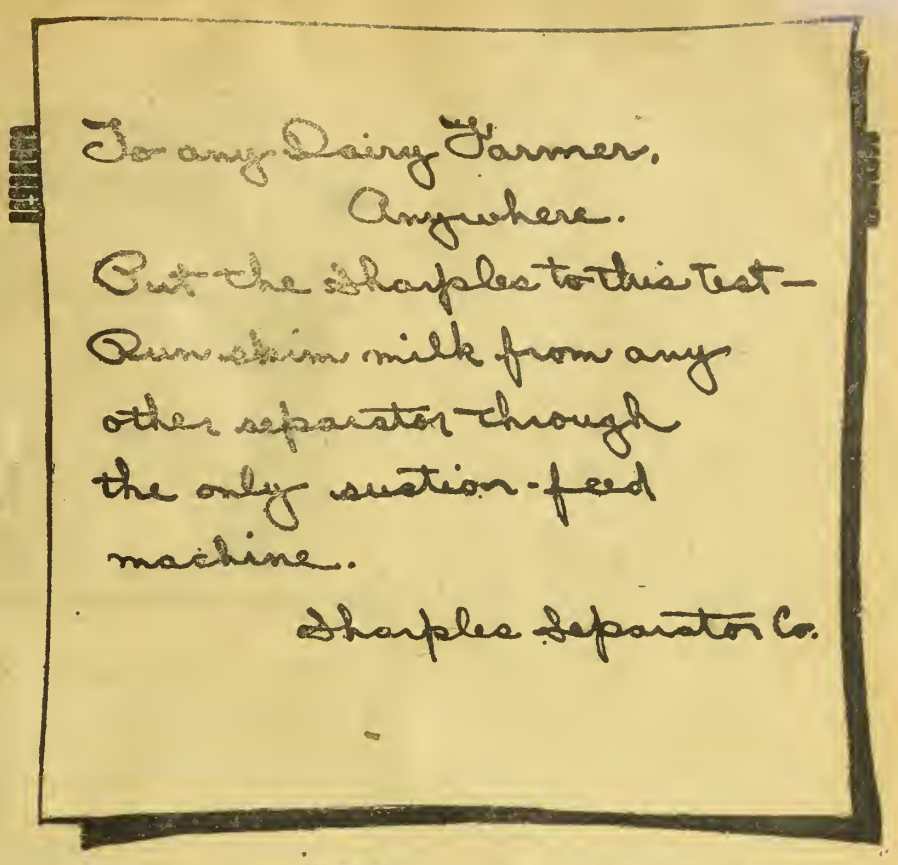
While wool pools have proved a decided advantage to the producers of small clips in enabling them to dispose of their product which is often lacking in quality and uniformity, they should not lose sight of the importance of these factors as price getters. The wool pool is, or should be, an educational as well as a commercial institution, and has not fulfilled its purpose until its adherents have done their part in offering to the market a high-class product for which the market is willing to pay them a premium. In this connection, not only the proper handling of the wool in shearing, tagging, folding and tying the fleeces and the use of suitable twine and sacks, but also the growing of the wool by proper breeding, feeding and general care of the sheep, become deserving of the grower's careful attention. Each consignor should be made to realize that the quality and condition of his wool as well as the appearance of his packages will, to some extent, affect the whole pool.

Taking farm sheep as we find them, the observation of a few simple rules which have been often repeated, will bring the wool to the warehouse in the most presentable shape for the buyer's inspection.

Shear the sheep on a clean floor to prevent unnecessary dirt or trash in the wool. Shear closely, making but one cut. Remove the tags and sack them separately. Fold each fleece separately with the flesh side out and tie with paper twine or other hard-twist twine. Pack fleeces tightly into neat, strong sacks, trying to have each sack full. If the clip is large and consists or two or more distinctly different kinds of wool, sack each kind separately, labeling the sacks. Breed consistently so as to standardize the product and don't forget that the best purebred ram you can buy is not too good and that it takes good feed and care to make good wool as well as good sheep.

A Hint to Elevator Men.

Elevator men are urged to get busy now, while the slack time is on, and prepare themselves for handling grain delivered by trucks. Last fall there was much complaint from truck using farmers because elevators are not properly equipped to facilitate the unloading of trucks. The farm truck has come to stay and farmers are acquiring trucks in increasing numbers. The elevators and grain and produce buying establishments should make the necessary changes in their platforms and unloading devices to accommodate the trucks.



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Don't feed two cows to make butterfat when one is capable of making the same amount. Not more cows but better cows should be the plan of the American dairyman today.
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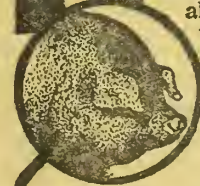

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What a Live County Agent Did for His Community.

(Continued from Page 5).

of the first year's work merchants were already recognizing the fact that development of the farm lands meant greater prosperity for the city. Today it can be safely said that no town or city in the west has a better understanding of the rural problems in its surrounding country, nor a more sympathetic viewpoint than that found among the merchants of Colorado Springs. They realize that tourist trade is a matter of three summer months, while the farm trade is an all-year-round proposition. They have learned this not altogether from the increased business which comes through greater production, but more directly through agricultural tours which have been an annual feature of the county agent's work. These tours have brought farmers and merchants together in a social way. They have caused the farmers especially those living along the route of any special tour, to take particular pains in sprucing up the place when they knew business men were coming out to look them over. The two groups have met at country picnics, speakers from town and country have appeared together on the same improvised platform and have exchanged ideas. One often hears the expression that there is a gulf between the city dweller and his country cousin. In El Paso county this gulf has been bridged in a most practical and permanent way, and it has come about through the activity of the county agent, backed up with the Farm Bureaus in the country and the agricultural committee of the Chamber of Commerce in town.

In El Paso county no farmer doubts the value of county agent work; but if there were some that wanted to be convinced all they needed to do would be to ask: What would El Paso be today without the organized work of agricultural development? How many of the 400 silos would have been built? How many purebred herds would there be in the county? How many farmers would be growing improved strains of corn, wheat, rye and oats? How many carloads of potatoes would the Divide section be shipping out each year? Would that section be noted as a Shorthorn breeding center, or would it have been ready for the certified potato seed project?

Would there be that splendid spirit of co-operation so manifest in the rural and urban districts if the farmers and townspeople had never been brought together? We are not saying that Mr. Lauck is personally responsible for these results. He has had splendid aid in community work from Miss Mary Collopy, the home demonstration agent, and has had the unstinted and unselfish co-operation of the Colorado Springs Chamber of Commerce, the farmers' community clubs and the Farm Bureau. A connecting link was needed to keep these forces working harmoniously and actively and the county agent supplied this connection. He kept the farmers in touch with their agricultural college and with the Department of Agriculture and saw to it that organized effort along all lines of rural development was effective and sustained. In other words, he was a good county agent.

During an absence of five years from the state of Colorado from the fall of 1910 to midsummer of 1916, I was in constant touch with county agents and frequently wrote of their work in Arkansas, Louisiana, Oklahoma and Texas. While this was founded on the farm demonstration plan, the principles were the same as those now applied to the work in the west, namely, the development of agriculture along safe, conservative and paying lines. It was my privilege to witness tremendous changes in the southern states due to the activity of the county agents, and coming back to Colorado soon after the work was started here, I have seen similar progress made in many counties.

Hinman on Dual Purpose Type.

(Continued from Page 7.)

are of less value than the failures which are "low set, broad-backed and blocky" and contain a large amount of the sacred Scotch blood but yield no milk, not even enough to raise her own calves, is the greater failure, is a matter of opinion. We are inclined to think that the man who is to make his living by milking these cows will prefer our failures to his.

When we both succeed, as we both hope to do, we will combine the desirable qualities of milk and beef production and produce such a cow as Matchless Queen, and if one may be permitted to claim any excellence in any cow not belonging to the Kansas Experiment Station, we would also call attention to Oxford Annie.

With regard to the deception which is being practiced at the sales of so-called Milking Shorthorns, we are entirely in accord with Prof. McCampbell. It is the greatest drawback which the legitimate breeder of Milking Shorthorns has to encounter, but I submit that in our experience this has been a practice of breeders of beef Shorthorns, who have unloaded their "misfits" upon people under the plea that they were of milk type, and have indeed sometimes cited the Kansas Experiment Station herd as proving that any Shorthorn would milk if given opportunity, which is of course as unfair to the Kansas Experiment Station as it is to the breeders of Milking Shorthorns that do actually milk. People who wish Milking Shorthorns should insist that milk production be evidenced by actual records and not by some one's say so that this animal is of milk type or Bates breeding, or that its mother was a six-gallon cow.

Poison for Prairie Dogs.

Answer to Subscriber:

Colorado formula No. 28 for the destruction of prairie dogs and ground squirrels. Both prairie dogs and ground squirrels can be successfully poisoned with it at any season of the year, no matter how abundant the green food.

Part 1—Oats, 14 quarts; strychnine, alkaloid powdered, 1 ounce; starch, ½ pint; water, 1 quart.

Part 2—Knox gelatine, No. 1, plain, 1 box, 2 envelopes; baking soda, 1 ounce; dark brown sugar, ½ pound; water, 1 quart.

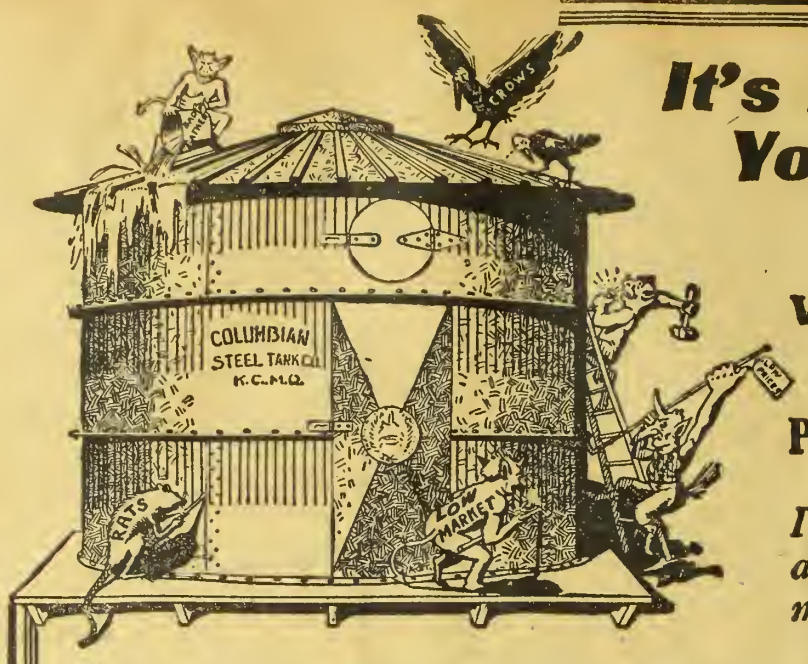
Directions: Treat the grain first with Part 1, as follows: Dissolve the strychnine in the quart of water, add the starch and stir until it is all dissolved; put over fire and heat until starch begins to thicken, stirring constantly

Pour the poisoned solution over the grain, thoroughly mix until each grain is evenly coated; let stand for five or six hours.

Retreat the poisoned grain with Part 2, as follows: Dissolve gelatine in warm water (not boiling), add soda and stir until it stops foaming, then add sugar and when dissolved, pour over the poisoned grain and again mix thoroughly; spread and dry.

One teaspoonful of the poisoned grain is sufficient for each burrow It should be placed on dry, hard surface outside the burrow.

If in need of advice, ask Western Farm Life Service Bureau.



It's Like Putting Your Grain in the Bank

When You Put It in a Columbian Portable Steel Grain Bin

It is a positive assurance against all hazards which mean losses in grain.

THOUSANDS of dollars worth of wheat was lost last year because of the shortage of freight cars and the impossibility of securing proper storage facilities. The same shortage of freight cars will probably occur again this year, but there is a way for the wheat grower to protect himself against such conditions—*buy a Columbian Steel Grain Bin.* Thousands of these bins were sold last year and more than paid for themselves in the grain saved.

The **Columbian Galvanized Metal Grain Bin** is constructed of best grade of rust-resisting, galvanized sheet steel, sides of 20 gauge, bottom of 24 gauge and the roof of 26 gauge material. It is proof against fire, water, lightning, birds, rats and all such hazards. It is sectional in construction, each section being joined by our patented joint which gives additional strength and rigidity to the walls of the bin. The upper half of each sheet is corrugated to add strength to the bin. It is shipped knocked down and its erection is so simple that any one can set it up in a few hours time. It may be set up on a platform provided with skids and hauled to any part of the field, wherever you may be threshing, thus permitting you to thresh directly into the bin and saving the cost of sacks, twine, labor and waste of transporting the threshed grain.

Each bin has a hinged metal door, five feet by two feet, and is provided with a hasp for locking. A collapsible shoveling board is furnished with every bin which prevents the grain from running down faster than it is shoveled away. There is also a sacking spout provided by means of which more than half the contents of the bin may be removed without shoveling.

Do not delay in ordering. The ever increasing difficulty in obtaining sufficient steel for manufacturing makes delay dangerous. Protect your grain and your interests by placing your order with your dealer NOW for later delivery. Do not fail to insist on the **"COLUMBIAN"** Grain Bin—the original and genuine Steel Grain Bin. Our Trade Mark is your protection. If your dealer cannot take care of your needs, write us direct for our illustrated descriptive folder No. 300.

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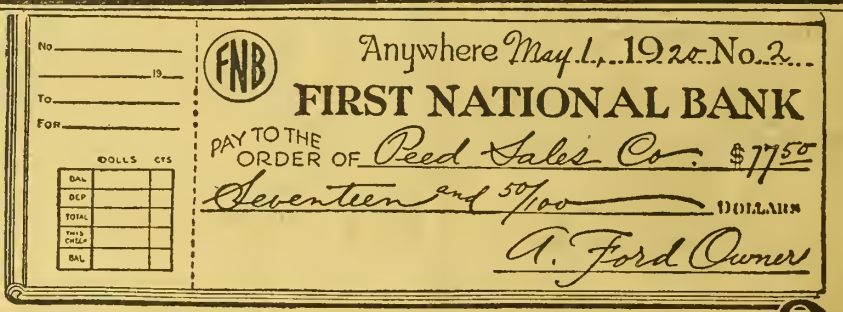

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Certainly! Then, isn't it worth $17.50 to make your Ford last *twice as long* as Fords usually do—actually *double* its value to you?

You can do more than that for $17.50. You can do away with that confounded chattering, bouncing, grinding, tire and gear destroying strain every time you use the brake. You can cut your upkeep away down and make your Ford easier to handle and a whole lot safer for you and your family.

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are the one absolutely necessary Ford improvement. They do all these things for you because they transfer the braking strain from the transmission to the rear wheel drums, **where it ought to be.** 25,000 Ford owners will tell you that **Peed Brakes** end chattering, grinding and skidding and insure a smooth, vibrationless, strainless stop when and where you want it without damage to tires or mechanism.

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WRITE TODAY for illustrated folder that tells all about Peed Brakes and how they save you actual dollars in upkeep.

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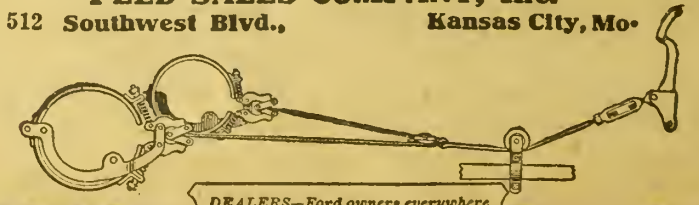


DEALERS—Ford owners everywhere are buying Peed Brakes. Write or wire for exclusive agency offer.

(2)

Hays Shows Beef Men How to Make Money.

(Continued from Page 3).

forms needed in the system employed. This is a most excellent provision. He is paid by the State Livestock Association and is in position to do a great deal toward improvement of livestock handling in marketing. The man doing this work in Kansas is W. P. Lambertson. He addressed the meeting and told of his work and invited the livestock shippers to call on him for service.

	Lot 1.	Lot 2.	Lot 15.	Lot 16.
Average winter feed cost per cow per day until three years of age, 1915-16-17	$ .156	$ .083	$ .083	$ .156
	Pounds.	Pounds.	Pounds.	Pounds.
Average weight of these cows as weanlings. Nov. 1, 1915, when test began	446.25	445.72	445.72	446.25
Average weight of these cows after their calves were weaned in fall of 1919	1167.	1102.6	1055.5	1093.9
Average growth of each cow	720.75	656.88	599.78	647.65
Cow's age when first calf was dropped	3 yrs.	3 yrs.	2 yrs.	2 yrs.
Average weight at weaning time of calves produced in 1917	.....	.....	353	366
Average weight at weaning time of calves produced in 1918	420	423	353	367
Average weight at weaning time of calves produced in 1919	375	389	338	350
Average weight of calves produced to date	397.5	405.5	348.0	361.0

The cows in this test all came from a herd that has been in the process of development for over thirty years, and since being placed in this experiment all four groups have run the range together with the same bulls. These factors have eliminated to a large extent the possibility of a difference in development of both cow and calf, due to a difference in inheritance.

The results secured thus far seem to indicate that the cow that drops her first calf at two years of age will probably recover sufficiently from the shock of such early calving, providing she has been fed liberally on grain during the first three winters of her life, to develop into practically as large a cow as one that has never received grain and does not drop her first calf until three years of age, but apparently the calves will never be as large from cows dropping their first calves at two years of age as from cows dropping their first calves at three years of age, regardless of method of feeding and development.

It would have cost from $30 to $40 a head more (depending upon winter feeding period) to have developed cows by methods used in Lot 16 than by methods used in Lot 2. This, aside from the fact that indications point to smaller calves when cows are developed by methods used in Lot 16, is considerably more than the profit resulting from the extra calf where the cow drops her first calf at two years of age. The cows in Lot 1 can be eliminated because of excessive cost of development and those in Lot 15 because of lack of development in both cows and calves.

One of the enjoyable events was held in the evening, when some fifty men gathered at a banquet given by Mr. and Mrs. Weeks and Mr. and Mrs. Alexander Phillips. It was an affair that did much to cement the friendship of the stockmen and the college men present. This closed a very successful day and those who attended are already looking forward to the next round-up.

Kane County Wool Pool.

That farmers can handle their wool clip through a pool was again demonstrated in 1919, when the farmers of Kane county, Utah, pooled a large part of their clip. When the sheep were being shorn the commission buyers were present attempting to purchase, but all they would offer was 35 cents per pound. The farmers felt this offer was too low, so at the suggestion of County Agriculturist Hugh Hurst they formed a wool pool through the Kane county farm bureau. A total of 317,216 pounds of wool was consigned to the pool, all of which was marketed as a unit by a committee selected.

When the wool was sold it was found that it netted the owners 49 to 51 cents per pound at the railroad, or on the basis of 5 cents more per pound than was offered by the buyers. The total saving to the farmers through this pooling was $55,000. That the farmers have confidence in the plan is evidenced by the fact that 700,000 pounds of the 1920 clip is being consigned to the pool.

These wool pools are doing as much for the wool producer as the co-operative shipping associations are doing for the small livestock owner. The producer is able through them to get in direct touch with the market. The usual expense of handling the wool in this way is less than 1 cent per pound. Buyers will not be able to pay as much for the 50 to 500 pounds of wool of the small flock owner as can be obtained in the pool. A large quantity cannot always be brought together. If 5,000 or 10,000 pounds would be consigned it will be worth while to form the pool. It is a form of marketing that is proving worth while.

A copy of the Kane county farm bureau agreement follows:

"We, the undersigned, wool growers of Kane county combined together and pool our 1920 wool clip as set opposite our names. We therefore authorize a committee selected by us to sell said wool to the highest bidder, or in case a satisfactory price cannot be obtained at a cash sale to ship to the National Wool Warehouse and Storage Company, provided said storage house will give terms equal to last year's, or better.

"In case said committee cannot satisfactorily dispose of said wool before the 15th of June, 1920, either by sale or by shipping, this agreement is null and void. Should any individual signed hereto feel to withdraw at any time committee selected by us to sell said he is at liberty to do so by giving written notice to said committee, provided said wool is not disposed of before the committee received said notice.

"I further agree to be assessed according to the number of sheep owned by me to defray the expense incurred in selling or negotiating said wool."

Precipitation Reports.

Complete reports are now available concerning the precipitation of moisture in the big snowstorm of April 17, 18 and 19, along the eastern slope of the Rockies in northern Colorado and southern Wyoming. Local weather observers report as follows:

	Inches.
Longmont (37 inches of snow)	3.70
Greeley	2.85
Fort Collins	2.12
Fort Morgan	1.34
Akron (17th, 18th, 19th and 20th)	1.63
Sterling (20 inches of snow)	2.72
Julesburg	3.25
Sedgwick	3.02
Wray	2.27
Burlington (storm on 18th and 19th)	.93
Cheyenne Wells	.50
Flagler	.61
Limon	1.00
Calhan	1.57
Denver (17th, 18th and 19th)	1.42
Cheyenne, Wyo. (17th and 18th)	1.98

At Colorado Springs the precipitation was very light and southwest El Paso county got no snow.

The watersheds of the Platte, Big Thompson and Poudre are well provided with snow and the ground has been put in excellent condition for seeding, although the repeated storms have delayed planting of early crops.

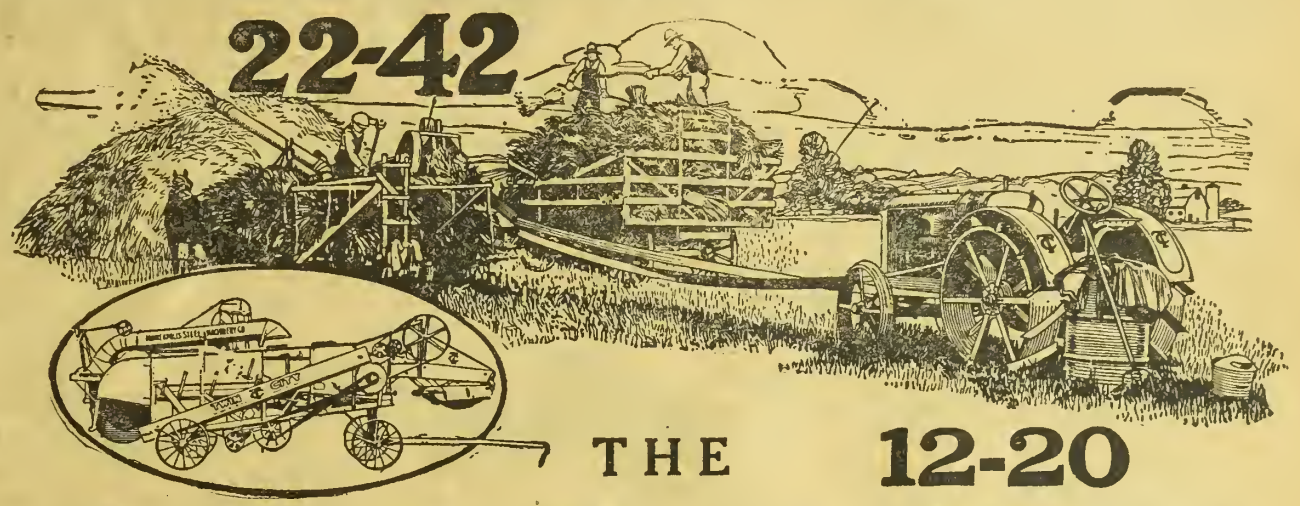
While all sections of the state report excellent moisture conditions, the situation in reference to livestock is serious in some counties. This is particularly true of northwest Colorado. In Grand, Routt and Moffat counties there have been large losses of livestock due to the heavy snows and the fact that the Moffat railroad was tied up for thirty days. Many cars of hay were sidetracked on the east side of the Divide, while the cattle have been starving on the other side. Present conditions are another argument in favor of prompt building of the James Peak tunnel. If the state fails to take action it will mean a considerable exit of settlers from northwest Colorado and cessation of development.

There were also reports of considerable losses to settlers in northeast Colorado, some of whom were not provided with sufficient feed to carry through small herds and were unable to reach either hay or grain on account of the deep drifts that blocked roads everywhere.

Moisture conditions throughout the intermountain region are good and prospects for crops on both irrigated and dry lands, have never been better at this season of the year.

Ringing the Sow's Nose.

In answer to R. H. B., Montezuma county, Colo.: I will tell you how I ring a bred sow or any other large hog. Take a small rope (clothes line size), make a running loop in one end, put slop in the trough and stand back of the sow and drop the loop down over her face or nose. She will soon pick it up in her mouth, then draw the rope tight and tie to the fence. She will pull back and keep the rope tight. Now walk up in front and snap your ring in her nose. She will squeal until the neighbors will think you are butchering and if you have any small boy standing around asking Dad hard questions, they will take a sudden notion that they want to see mother. But when you untie the rope the hog will soon shake the rope free and go off none the worse for the operation.—J. A. Corkill, Goodland, Kan.



THE 12-20

Twin City "Team of Steel"

With this individual or "community" outfit you are ready to go into the field when you want to; it will handle the threshing steadily, thoroughly and quickly without the bother of a crew, and more than that, *it saves all the grain.*

The TWIN CITY Thresher keeps six teams busy, it cannot choke or slug, and it delivers the full crop of grain cleaned, weighed, and tallied ready for the bin or flour mill.

With the crops stored and fields clear, TWIN CITY farmers are ready with the dependable power of their "12-20" tractor for the fall plowing—for the success of another season.

And the TWIN CITY "team of steel" will give the same service year after year, because they are built for lifetime service.

Special Features of the All-Steel Twin City 22-42 Threshers

Auxiliary Tailings Cylinder (with delivery direct to grain pan) where tailings are rethreshed; adjustable sieves; cylinder and windstacker mounted on Hyatt Roller Bearings; all bearings outside, and accessible with thresher in motion; all steel construction; Skewed Disc Spreader; Pickering Governor on low-set feeder; larger separating area than any thresher of equal size.

3 Sizes
22-42, 28-48 and 36-60

Special Features of the Twin City 12-20 Tractor

Sixteen - valve-in-head Engine, burns kerosene perfectly; removable cylinder head and walls; crankshaft counter-balanced and drilled for force-feed lubrication; accessible clutch; transmission direct on both forward speeds, and mounted on Hyatt Roller Bearings; gears drop forged, steel cut, heat treated and running in dust-proof oil bath.

4 Sizes—12-20, 25-45, 40-65 and 60-90

TWIN CITY COMPANY, Minneapolis, Minn.
Selling Products of MINNEAPOLIS STEEL & MACHINERY COMPANY

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TWIN CITY
12-20 Kerosene Tractor with 16-valve engine

Sugar Beets and Fertility.

One would infer from some of the articles written on the growing of sugar beets that the sugar beet is a crop which builds up the soil and takes out nothing in the way of soil fertility. Such statements as "unlike a grain crop, the sugar beet crop lends itself to a feeding program, in which the soil fertility is not depleted," made by W. W. Robbins in his article "Beet Plant a Living Sugar Factory," gives the wrong impression on the growing of sugar beets. It is very true that sugar beets make a good culitivated crop to work into a rotation, but there must be some means of putting back the fertility taken out by the beets, also the organic matter. Sugar beets draw very heavily on the plant food element potassium; therefore, it is quite important that the grower shall not grow beets on one field more than two or three years.

Take such a statement as "wheat shipped from our shores takes an enormous amount of fertility out of the country. The same amount of sugar contains no fertility plant food elements." This is very true, but how about the plant food elements removed from the soil to grow the beets from which that sugar was manufactured?

In the western soils where sugar beets are being grown there are only four plant food elements that are in any danger of being exhausted. These are nitrogen, phosphorous, potassium and sulphur. The following table shows in pounds the proportion of these four fertility elements removed by beets as compared with proportions removed by the average yields of other crops:

Pounds of Plant Foods Removed by Crops.

Crop.	Yield Bu.	Nitro-gen.	Phos-phorous.	Potas-sium.	Sul-phur.
Wheat	30	48	7.2	7.8	2.58
Corn	50	50	8.5	9.5	4.25
Oats	70	46.2	7.7	11.2	4.76
Potatoes ...	300	63	13.	90.	24.30
Sugar Beets.	15*	75	13.5	117.7	49.05
Alfalfa	4*	200	36.	96.	27.9
Clover	2*	80	10.	60.	6.55

*Tons.

Considering such average crop yields as are shown in the table, sugar beets make the heaviest demands on the plant food element potassium and next to the heaviest on the plant food element phosphorous. Therefore, it is important from a fertility standpoint for the farmer to recognize that it is well not to grow sugar beets continually on one field, but to use them in a carefully worked out rotation.—E. B. Hitchcock, Soil Specialist, University of Idaho.

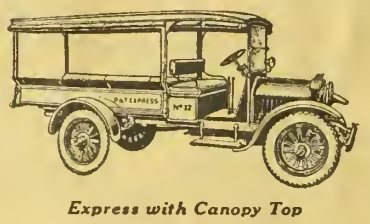
Concerning the Western Slope.

Ans. to J. R., Pueblo County.

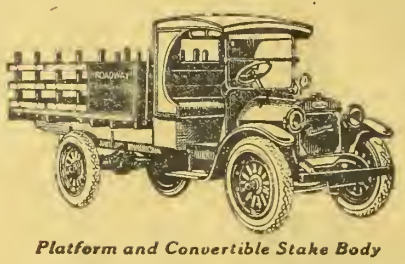
Montrose, Delta and Mesa counties have considerable irrigated land and also a great deal of outside range where one could get good summer pasture. Probably Montrose and Delta would have a little more in proportion to the land in the counties than Mesa. The Uncompahgre forest furnishes range for the settlers in Montrose county and for some of the Delta county farmers. The greater part of the Delta farmers send their stock to the Battlement Reserve on Grand Mesa. I have been over this range during the summer months and found it exceptionally good. The range I have just mentioned, however, is all under the forest boundaries and is therefore under its control. In the Cimarron section of Montrose county there is a great deal of range that has been settled by stockmen and farmers in tracts of 640 acres. This is most excellent summer range, but one would have to buy out the present holders in order to get anything of value there. There are similar sections in Delta county where good grass can be had for summer range. In regard to raising corn or fodder or alfalfa, will say that the valley lands offer a most excellent opportunity for this. The water supply in the valley has been ample to insure good crops for the last four years. This water, of course, is at the present time controlled by the United States government and the water users' association of the Uncompahgre. Good corn has been raised all over that section and the average yield of alfalfa is in the neighborhood of three tons. The altitude of these three counties ranges from 5,000 to 6,000 feet. Of course, on the summer ranges the altitude runs considerable higher than this. The Western Slope usually has considerably less snow than the eastern slope of Colorado, and it is usually possible to get at the spring work a little bit earlier in that section than on this side of the range. I do not think there is any great difference between either of the two counties mentioned so far as preference for location is concerned. Each county offers good opportunities for the live-stock men and the best thing to do in case you are interested is to plan on spending some time in that section any time after the first of June, as at that time one can see more readily what the conditions are for both the raising of winter feed and the summer range conditions.—H. A. L.

Commerce TRUCKS

HAVE MADE GOOD ON THE FARM



Express with Canopy Top



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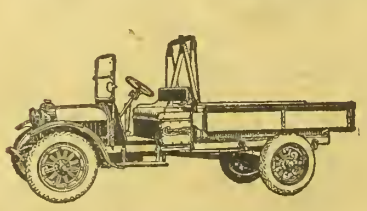

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A Commerce Truck opens the way to saving costs and increased production on farms. **Your farm can be motorized to make you more money.**

Commerce trucks answer every hauling need of the farm. They get what you have to sell to market in condition to bring top market prices. **Sixty per cent of the Commerce Truck output for the past two years is working today on the farms of America.**

Low first cost—economical in operation—dependable service recommends them to every farmer.

The Commerce chassis is sold fully equipped with Electric Lights, Impulse Starter, Spotlight, Bumper, Windshield, Horn, Tools, Front Fenders, etc.

Every vital part of the Commerce Truck is made by a specialist with a national reputation for a high grade product.

Check this list of units possessing unquestionable performance records—more than can be found in any other make of truck built:

Continental Red Seal Motor
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Largest Manufacturers of 1 to 2 Ton Trucks in America.

10th Year Exclusively Mfgrs. Motor Trucks

National Ship by Truck-Good Roads Week, May 17 to 22, Inclusive

60,000 Shorthorn Applications.

The number of applications for pedigree registration received at the office of the American Shorthorn Breeders' Association up to the close of March reached 60,000, approximately half of the total of the previous year, which was a record year. The number sent in during this three-month period was increased, naturally, by those desiring to get in before the new rate went into effect. With this large volume of applications on hand, the work of delivery is necessarily delayed. While the office space has been enlarged and the office force increased to the limit permitted by the space, there will be a delay in returns on applications until the accumulation has been taken care of. Once this is out of the way there will be a reasonably prompt service assured. However, the regular business continues to grow in volume more rapidly than even the most optimistic predictions forecasted and will involve, evidently, a steady increase of office space, a problem that is not solved on a day's notice, and a proportionate increase of the office force. Ninety clerks are now regularly employed in the office. Unfortunately labor conditions have delayed the plans decided on for the enlargement of the office. A little patience on the part of the Shorthorn people until the present congested condition is taken care of will help materially in the improvement of the situation.

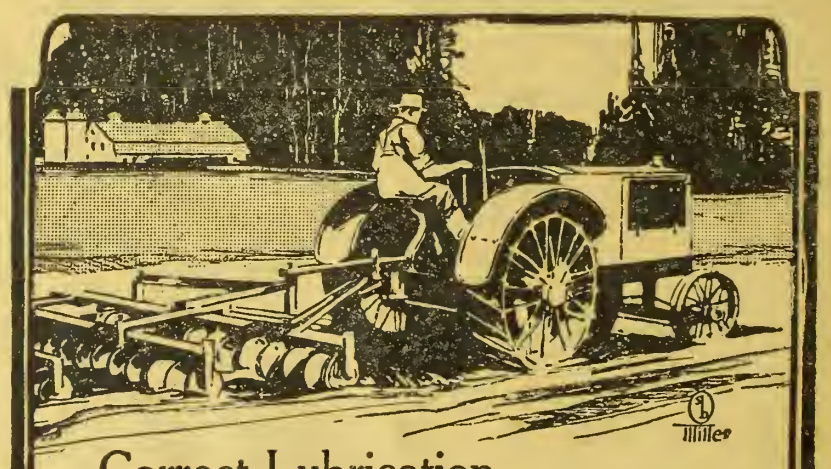
No Escape.

Diner—You charged me more for this steak than you used to.

Restaurant Manager—I have to pay more for it. The price of meat has gone up.

And the steak is smaller than it used to be.

That, of course, is on account of the scarcity of beef.—Buffalo Commercial.



Correct Lubrication and Margin of Profit

Are you getting 100% power out of your tractor? No matter what type of machine you use—what fuel—engine performance depends on correct lubrication. The tractor oil which will stand the highest cylinder heat—especially when kerosene is used for fuel—is the lubricant that keeps the engine smooth and powerful through the steady grind of farm production. And continuous production is what spells margin of profit.

Stanolind Tractor Oil keeps its body under blistering heat. It keeps working parts smooth and active—cushions bearings against the tearing piston blows—keeps compression tight—holds the tractor on the job.

If your dealer can't supply you, write us.

THE CONTINENTAL OIL COMPANY
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Till Without Plowing?

W. M. PETERSON.

Soil is a place for plants to grow. It serves as a support for them, and most of the food they absorb comes from it. But the greater part of the plant food contained in the soil is not in such form as the plant can use. It is the business of the farmer to make this plant food available in such quantity that his growing crops shall have an ample supply on which to draw when they are hungry, which is all the time.

The principal method of accomplishing this result is through cultivation of the soil. Most farm crops occupy, with their roots. not much more than the top six or eight inches of soil, and preparation for a crop is usually confined to about that depth. As a matter of fact, the greater part of the available plant food, in new soil, is found in that space. It has been learned that, in many new soils, going below that depth for material for a seed bed brings up something that does not feed the plant. Experience has taught that this lower soil has to be mixed with the upper before satisfactory results can be obtained. In other words, it is the problem of rendering available the plant food that lies deeper in the soils.

Plants absorb much of their food in liquid form, and it must be dissolved from the soil by water before it can be digested. When the soil is loosened up, the water that goes down through it carries plant food which is retained by the water clinging to the soil particles, and is then taken up by the root hairs which force themselves into the minute spaces among those particles.

In the early history of cultivation, the surface of the soil was . merely scratched. Later it was scratched a little deeper. Then the surface was turned under Until very recent years, no particular effort was made to extend the feeding area of crops beyond the depth to be reached by the plow. Of late, however, it has come to be realized that it may, and will pay to leave the upper part of the field without turning deep down the plant food it contains and the plant food material which may be left upon its surface after harvest, and to open up the soil more deeply and let these foods be carried down farther than they can be when only a plow is used.

The benefits derived from a system of tillage which accomplishes this result are numerous. The soil is not turned over and exposed to the leaching of rains, but is thoroughly stirred to a much greater depth than it could be by a plow and is left in narrow ridges with few air pockets underneath. These ridges catch all the moisture that falls, and this moisture carries down the plant food from the decaying stubble and other vegetable matter that is mixed with the soil close to the surface, so that little of it fails to be assimilated. A small portion of the plant growth remains on the surface, but this is of great value in a country where the wind blows, for it provides a protection for the soil and prevents drifting. It assists, also, in forming a mulch to preserve the moisture that has gone into the soil, and most of it will decay and be ultimately carried down by the descending water.

The tools with which this kind of work is done are called "chisels," "deep tillers," 'Swedish harrows," or other names, depending upon the locality in which they are used. They all operate on the same principles, but differ in weight and strength according to the soil to be tilled and the depth it is desired to reach. Some are made so that just one cutting tooth may be used at a time, if so desired, and the ground penetrated to the depth of two or three feet. Others have numerous teeth—usually spring—and go down from four to eight inches and cut from four to fifteen feed in width. The first kind plows up new soil, or very hard soil, with from one to five teeth; the second tills older fields, and when these are put into proper condition, each stirring can be made deeper until the top eighteen inches, or two feet, are put into perfect tilth and the plant food is thoroughly intermingled by working from the top down, gradually and as needed. There is no plowsole to present an almost impenetrable barrier to the percolating water and the descending root, and yet the seed bed is left in sufficiently firm condition that much less working down is required to get into proper shape.

Wherever these tools and this system have been intelligently used in the preparation of seed beds, the invariable result has been the improvement of the soil conditions, and material increases in crop yields. The question is whether it will take the next six thousand years for this principle to be fully recognized, or whether it will be one of the first changes made in the coming period of rapid evolution in agricultural processes which is unquestionably at hand. We have had such periods of great and rapid change in religion, in learning, in discovery and invention. Agriculture alone has remained largely unchanged, except with regard to the tools it has used. It is now agriculture's turn to move rapidly; and increased yields and cheaper production will follow just as the farmer will approach the study with an open mind and a determination to adopt such changes in his system of farming as appear reasonable to him.

Stem-Blight of Alfalfa.

In southern Colorado and adjacent states alfalfa yields are often very greatly reduced by a disease known as stem-blight. Losses from this disease may be greatly reduced if the nature of the disease is understood and the proper remedial measures are used.

The disease is easily recognized. Affected plants are shorter than healthy ones and if the infection is heavy the entire field will have a poor color and a general unthrifty appearance. A closer examination of the infected plants will reveal the true nature of the disease. The juicy, succulent appearance of healthy stems is absent. The rich, dark color of the leaves is lacking. In earlier stages the stems will show watery, yellowish green streaks along one or both sides. A careful examination will show on the surface of these streaks, numerous bead-like drops of sticky ooze. In later stages this ooze will have dried, giving the stem a slick glossy appearance very much as if a coat of varnish had been applied. Often little yellowish scabs are formed where the ooze drops have dried. As the stems become older the disease areas may become dark brown or black. Stems in this condition are rather brittle and the leaves fall very readily.

If the stem is cut open the browned, diseased tissue will be seen to extend to the center of the stem. Such stems may struggle along in this weakened condition until harvest, or they may shrivel and die within a few days. Leaves attached to diseased portions of stems are at first yellow and water-soaked, but later become dry and brittle, falling off at the slighest touch.

The disease as a rule is confined to the parts of the plant above ground, but very often the browned tissue will extend into the crown and roots, finally killing the entire plant.

Stem-blight is caused by bacteria which infect the growing plant and produce the symptoms described above. The bacteria gain entrance into the plant through cracks and bruises resulting from frost injury. Since the bacteria depend upon frost injury for infection the disease is prevalent only on the first crop of alfalfa and is most severe just following a heavy frost.

With the above facts in mind it is obvious that varieties of alfalfa that resist frost will be less heavily infected with stem-blight. For this reason in regions where the disease is common the more hardy strains of alfalfa should be grown.

In order to reduce the losses which may result from this disease to a minimum, it is recommended that frosted alfalfa be clipped as soon as possible. By this means the frost-cracked stems, through which the bacteria enter the plant, are gotten rid of, making it possible for a new growth to arise which will be free of the disease. This will not only reduce the immediate loss to a negligible quantity, but it will also do away with the heavy infection that frequently kills the entire plant. It is also reasonable to suppose that where the disease has been checked in this way, there will be less danger of a severe outbreak the following year.—J. G. LEACH, Associate Professor of Botany, Colorado Agricultural College.

Wanted the Real Thing.

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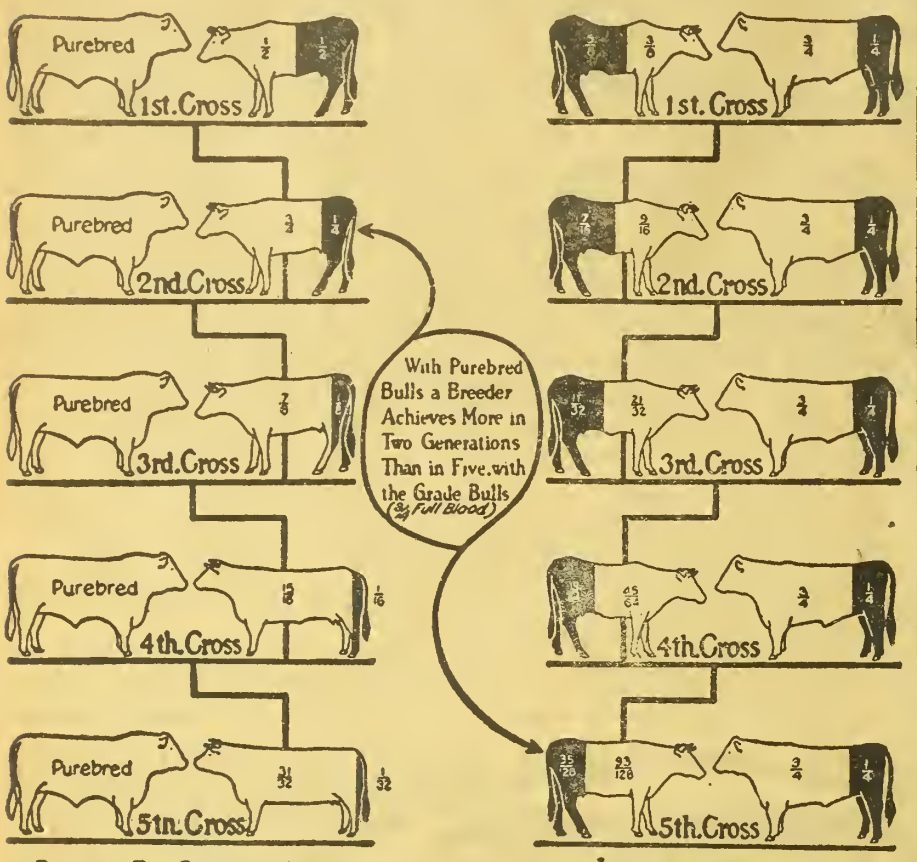
FROM THE FARMER.



Progress in Five Generations Using Purebred Bulls and Native Cows

Progress in Five Generations Using Grade Bulls and Native Cows

TOM JONES and John Brown live on adjoining farms. Each of them owns a scrub cow. The county agent gave them a bulletin on grading up by the use of better sires, and they decided to try it. Joe Smith, who lives a mile down the road, owns a three-quarters grade Shorthorn bull. The nearest purebred Shorthorn bull is a herd-header at the Ellendale Farm, seven miles away.

There isn't a great deal of difference on the outside—between a three-quarters blood and a purebred. Tom Jones, being busy, patronizes Joe Smith's three-quarters Shorthorn bull. John Brown, remembering a copybook maxim that whatever is worth doing is worth doing well, takes the trouble and the time to patronize the purebred bull at the Ellendale Farm.

There would not seem to be very much difference in the offspring. But, in actual fact, John Brown accomplishes in two crosses a result that is a little better than Tom Jones gets in five crosses. In about four years John Brown has an animal of a fraction higher grade than Tom Jones can get in about 15 years.

There may be no way to show it mathematically, but every reasonable man knows that the difference between four years and fifteen years is greater than the difference between a mile and seven miles.

Or, to put it in somewhat different form: Say that both Tom Jones and John Brown own a number of scrub cows and desire to buy bulls. Jones, being penny-wise, buys a three-quarters Shorthorn for $150. Brown pays $400 for a purebred Shorthorn. Most men will agree that the difference between 4 years and 15 years is greater than the difference between $150 and $400.

The thing needs a little diagraming to make the difference stand out. Here is what John Brown did by breeding his scrub cow to the purebred bull: 1 plus 0 equals 1; divided by 2, equals ½. John Brown's calf was half Shorthorn and half scrub.

Here is what Tom Jones did by breeding his scrub cow to the three-quarters bull: ¾ plus 0 equals ¾; divided by 2, equals ⅜. Tom Jones' calf was three-eights Shorthorn and five-eighths scrub.

Not much difference in the first generation—but wait. Using those heifer calves as breeding stock and mating them with the same kind of bulls, here is what happens:

John Brown gets 1 plus ½, which equals 1½; divided by 2, equals ¾.

Tom Jones gets ¾ plus ⅜, equals 9-8; divided by 2, equals 9-16.

John Brown's calf in the second generation outgrades Tom Jones' calf in the second generation by ⅜ Shorthorn blood.

And Tom Jones has to breed three other generations of cattle (using the same kind of sire) to bring his cattle up to approximately the same grade as John Brown's second generation of offspring. In the meantime, using the same kind of bull, John Brown has graded his cattle up till the offspring of the original scrub cow contains 31-32 Shorthorn blood and only 1-32 scrub blood. Tom Jones's cattle, in the same generation, contain 93-128 Shorthorn blood and 35-129 scrub blood.

Jones's herd, after 15 years of work, still retains 35 times as much scrub blood as John Brown's cattle—all because, fifteen years ago, John Brown took the time and the trouble to travel seven miles instead of half a mile, or saw his way clear to spend $400 instead of $150.

The cost of bulls varies greatly, of course, according to quality of breeding, age, and other features. The moral of the story is to use purebred sires for herd improvement. Replace the scrub sires and the grade sires with good purebreds.

Big Draft Horses in Demand.

The highest price ever paid for draft horses bought in the open market at Chicago have just been placed on record. Messrs. Richards & Slipp of Fort Fairfield, Maine, spent two weeks at the Union Stock Yards, Chicago, purchasing a consignment for shipment to the potato fields of Maine. Their selections were deep-bodied, powerfully built drafters, averaging over 1,800 pounds each in weight and costing more than $450 each, f. o. b. Chicago. One pair sold for considerably over $1,000. Good judges consider this to be the best carload of draft horses ever bought on the Chicago market.

The United States census for 1910 revealed 19,833,000 horses and 4,210,000 mules on farms; and the Department of Agriculture estimates for January 1, 1920, show 21,109,000 horses and 4,995,000 mules on farms, or an increase of 1,276,000 horses and 785,000 mules in the last decade. Besides this, we exported during the nine years ending June 30, 1919, 1,149,763 horses and 376,836 mules.

The rise in prices for good draft horses and mules in spite of the existence of more than 21,000,000 horses and almost 5,000,000 mules on farms indicates how agricultural and transportation needs are growing. Good authorities predict a steady rise in prices of horses and mules for the next three years.—WAYNE DINSMORE, Secretary Horse Association of America.

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500 ft. ¾ inch used Standard Black Pipe at 6c per foot.
500 ft. 1 inch used Standard Black Pipe at 9c per foot.
1,000 ft. 1¼ in. used Standard Black Pipe at 12c per foot.
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360 ft. 5 inch New Standard Black Pipe at $1.00 per foot.
All of above pipe in excellent condition, threaded and with couplings furnished.
1,250 ft. 9 inch 14-gauge new riveted pipe at 50c per foot.
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2,500 ft. 10 inch 14-gauge used spiral riveted pipe at 60c to $1.00 per foot.
3,000 ft. 16 inch 16-gauge used riveted pipe at 50c per foot.
Prices as quoted F. O. B. Colorado Springs.
Pumps and Engines for pumping plants.
Write for prices.

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THIS $12 OFFICER SHOE

Hand sewed, First Grade. The factory price -- direct to you at only.... **$6.98**

The retail price of this shoe is 12.00. It is made of the best waterproof mahogany calf leather. Guaranteed to give the best wear. If these shoes are not just as we say, send them back. You don't lose a cent. — If you are sending money order or check, do not include postage. Pay only $6.98 for shoes. We pay postage. State size.

These shoes are built to be good for work and dress at the same time.

U. S. NATIONAL ARMY SHOE CO.,
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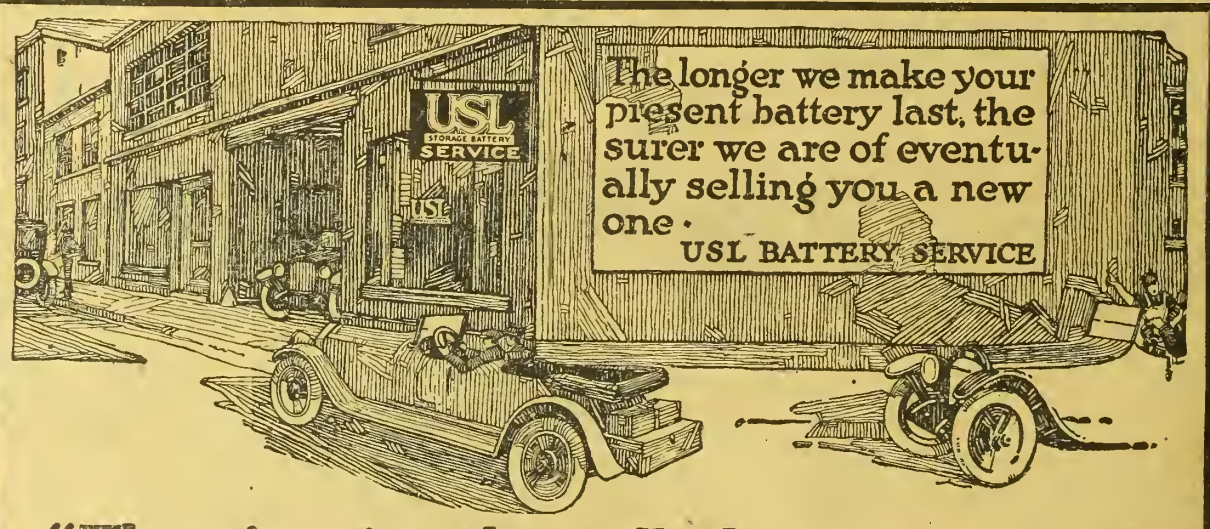

"There's a sign that tells the *truth*, John!"

"HOW do I know? Well, you saw how quick my starter got us going back there? The battery supplied the speed of course. Engine stiff, too, so it needed a *live* battery to do the job."

"You wouldn't think my battery was in bad shape four months ago — wouldn't start at all. I guessed I'd have to buy a new one. But I thought I'd see what those USL fellows would say. Had an idea they'd agree my battery was done for and offer to sell me a USL."

"But they wouldn't sell me a battery at all. Just took a few minutes to open up my old one, and showed me its plates were still too sound to justify the deal. Said they'd repair it and guarantee it for eight months."

"And that repaired battery has been as lively as a colt ever since. I can see it's going to last a lot longer than the guarantee period, too."

"And you can bet these USL fellows *will* sell me a USL when I *do* need a new battery. No wonder they're succeeding when they give people the kind of service they gave me."

Whatever your battery's brand, better drive in to the nearest USL Service Station and see what USL Golden Rule Service can do for you.

And when you *need* a new battery, your size of USL is ready for you. It has extra wear Machine-Pasted Plates. It comes "Dry-Charged," so you get it—not partly worn out—but *fresh*. It is guaranteed.

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U.S. Light & Heat Corporation, Niagara Falls, N.Y.

Likely there's one of our fifteen hundred service stations in your town. If there isn't, for the address of the handiest, just drop a post card to the nearest of the following distributors:

THE AUTO STORAGE BATTERY CO., Denver, Colo.
THE MOTOR CAR EQUIPMENT CO., Salt Lake City, Utah.
EL PASO BATTERY & IGNITION CO., El Paso, Texas.

Favors Rural Libraries.

The communication which follows comes from Mrs. E. C Etheridge, Greeley, Colo., who speaks with authority on the subject of rural libraries. Mrs. Etheridge was born and brought up on a Weld county farm and is living on the old home place at present. She has also lived on a dry land homestead in Wyoming, therefore has the rural viewpoint and the experience both in a well settled, highly developed community and in a pioneering district. She is a college graduate with special library school training at Simmons College in Boston, and held a position for over three years in the library of the Colorado State Teachers' College; she also served two years in the famous Newberry Library at Chicago, and for four years was a county library organizer in Wyoming. Because of this close connection with library work in the rural districts, her opinion on the subject of county libraries is of unusual value.

In reply to the request for an expression of opinion from farm women regarding libraries for rural communities, permit me to present the following reasons for the establishment and patronage of libraries.

Libraries of the modern up-to-date type are a necessity for each and every community. They constitute the "Peoples' University" along informational, educational, and recreational lines for all ages, classes and types of individuals.

The average rural child receives nothing higher than an eighth grade schooling on account of inadequate facilities for High school or college work in his immediate neighborhood. The eighth grade, while allright as far as it goes perhaps, is merely the beginning of real education, most of which must be obtained from sources other than the schoolroom. How then may the library increase the opportunities of an individual after he is through school?

For rural and small town communities the county library is undoubtedly the best type, as any other library would be too severely handicapped for lack of adequate support. While successful in most cases, the county library movement is still in its infancy. In cases where it is unsuccessful, the failure is due to lack of an efficient trained librarian who must know her community as well or better than she knows her books and library business, or, to an ignorant, penurious board of library directors—perhaps to both.

With the successful county libraries, the main library is at the county seat, with distributing centers in the smaller towns, villages, and hamlets, and rural schools. The distributing centers are in the form of branch reading rooms and libraries, deposit libraries, traveling library boxes, etc. Some of our more progressive states, for instance Maryland, Oregon and perhaps California, go a step further by having motor book trucks which make the rounds of the farm houses at stated intervals, loaded with books on all conceivable subjects, from which the various members may make selections to be kept until the return of the book wagon, or returned by parcel post as the case may be. In the more thinly populated districts the book wagon is still a dream. In these districts, the residents are reached through the medium of packages sent by parcel post, the county paying transportation one way, the borrower paying the return charges.

County libraries are supported by a county-wide tax, with a minimum and maximum rate determined by law. Each and every resident of the county able to read is entitled to the use of the library material as long as he obeys the few rules of his particular institution. In the majority of cases the library tax rarely amounts to one dollar in the more prosperous families, and usually is under 25 cents. Our library tax for 1919 in Wyoming on 320 acres of dry land amounted to 2½ cents, and gave us unlimited use of a $20,000 building and a $25,000 collection of well selected reference books on all subjects, together with a fine assortment of non-fiction, fiction and children's literature, all this in a town of less than 1,200 inhabitants, and a total county population of less than 10,000! What tax other than the school tax gives any visible return, and what other tax than the library tax brings any immediate visible return to each and every resident, in proportion to the amount invested?

In the successful county library there are well selected, readable books by first-class authorities on all phases of all subjects of possible interest to the farmer and each member of his family. Of course, there are well selected collections of really worthwhile, interesting books for the children. All books are, or should be, selected by the best experts available in the lines represented, or, at least from up-todate lists compiled by experts. In the past, too many have considered a library as a place for the distribution of worthless fiction only, to frivolous women. Fortunately such is not the case.

Think what it means to the rural school, especially in isolated districts, whose board of directors have not the means, or perhaps the inclination, to supply necessary supplementary reference books for the use of the children from the school funds, to be able to secure everything necessary in all subjects taught, nicely packed ready for use in a neat traveling library box for any length of time desired, with the privilege of exchanging as often as necessary. In the schools where plenty of supplementary material is available the children do a much higher grade of work. This alone would make a county library worth while.

To the average isolated farm woman to have access to plenty of good books means mental rest and recreation and an impetus to carry on her routine work with greater ease and efficiency. It gives her something better to think about than the current bits of gossip and slander floating all too freely about the neighborhood. It gives her plenty of new ideas which may be applied in her home in a practical, inexpensive way to lighten her labor and shorten her hours, leaving more time for rest, recreation and self-improvement, and incidentally the pleasure of her family. Not only the woman in the isolated districts, but the woman in the more thickly populated irrigated districts where there are more recreational and educational opportunities are benefited by, and enjoy the privileges of the library, though perhaps not as much as our sisters in the outlying districts. And the men—I personally know of a case where a man drove forty miles with a team and buggy through a raging Wyoming blizzard to get a copy of "The Care and Feeding of Children," by Holt, which he had seen listed in the county library items of the weekly paper that week. Another rode horseback and faced the same blizzard thirty miles for the sake of getting some of the new books on geology which he had seen listed in his copy of the same paper.—Does it pay?—When you stop to think that two years before there were but three individuals in the entire county who were not opposed in some way or other to the very idea of a county library, and that in that two years their interest was aroused and stimulated to the extent that one out of every three inhabitants of the entire county was patronizing that same county library and boosting for it, and perfectly willing to pay even the maximum library tax for county library purposes without question, and that in that time a fine new building costing in the near neighborhood of $20,000 was erected, it speaks for itself, does it not?

The American Library Association is doing a great work in its effort to secure adequate county library laws and facilities for every state. Sooner or later it must succeed. In order for that to come about it is necessary for the American public to know and understand the value to them personally and collectively of such facilities. Then, and not before, we will stand ready to co-operate with and utilize the most wonderful educational opportunity of the age—the American County Library, by the people and for the people.—Mrs. E. C. E., Greeley, Colo.

Disease in a Flock.

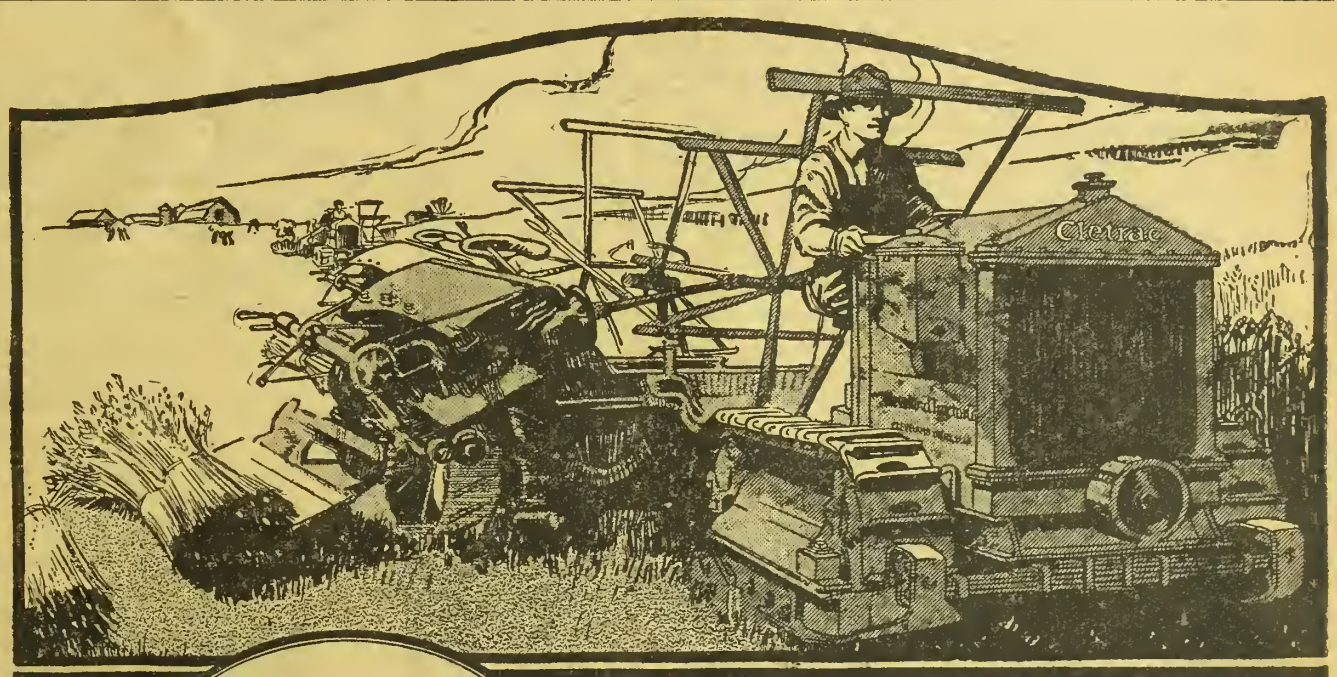
We have a flock of hens of about 150, 130 Leghorns and 20 Plymouth Rocks. The rocks seem to be healthy but there is a disease among the Leghorns. They look healthy today and tomorrow there might be one or two sick. They drop their wings and do hardly move unless you chase them. They do not eat or drink anything, they have a kind of pale yellowish diarrhea, though not bad. They last from 8 to 18 hours and die. We feed our flocks in the morning wheat, oats and barley mixed. At noon potatoes and bran mash, at night wheat, oats and barley again, with all the sweet milk and water they want. Could you tell me what is the matter with them? We lost about thirty already. We have done all that we could to check that disease and cannot do it. We clean their coop often and disinfect it with dip.—A. M., Boulder County, Colo.

I would advise you to send by express one or two dead or very sick birds to the Veterinary Department, Colorado Agricultural College, Fort Collins, for examination. They do not charge for this service. It is impossible to tell without examination what is causing the trouble in your flock.—W. E. V.

"Boy or girl, doctor?"

"One of each."

"That's too bad. My wife and I never see things in the same light, and I was hoping to break the deadlock."—Washington Star.



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When the grain's ripe, the fast-working Cletrac fleet pitches right in. It hustles every job from heading and binding to hauling bundle wagons over soft fields—gets *all* the wheat quickly and safely.

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Put a Cletrac fleet on your ranch and make a short job of your harvest rush. See the Cletrac dealer near you or write for the helpful booklet, "Selecting Your Tractor"

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The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Song of the Poppies.

We come when Spring is young and fresh
And winds are sweet and mellow,
O'er rain-drenched fields of tender green
We march in suits of yellow,
A fairy horde of merry men,
Our golden helmets gleaming,
Bright as the stars in midnight sky
Across the heavens streaming.

Our manual of arms was taught
By genii of the wildwood,
Our laughing faces caught the mirth
From heart of merry childhood,
Our banners bright from joyland came,
The work of fairy fingers,
Weaving with color from the sun
Whose glory in them lingers.

This is the song we poppies sing
All through the bright spring weather;
Out in the sunshine come with us,
We'll dance and play together,
And cover you with gleaming dust
From rarest of all metals,
From out our saucy, laughing hearts,
And from our burnished petals.
—Sarah Pulver McLean.

Whose Community Is This?

If there are two stock phrases among modern social writers which are overworked, they are "community spirit" and "efficiency." But most of us are just waking to the fact of what "community spirit" really means. Somebody defined co-operation as "conducting your work so that someone else might work with you." And that's a pretty good definition, for co-operation is your part of community spirit, the sort of spirit that makes it possible for numbers of us to dwell together.

It seems now that many of our schools were more than successful in bringing about a spirit which makes it possible to dwell in a community with as much as we should have of pride and more than we deserve of enjoyment. This means they are using what are called in most cases "Community days."

One of these we had the privilege of visiting not so very long ago was in the the Wheatridge district of Jefferson county. It was one of those very few perfect spring days we have had this year, and not only were the people of Wheatridge invited and present, but the county superintendent, Miss Songern, had arranged a county spelling match, and pupils from many communities over the county were there, and that meant that fathers and mothers were present also. We didn't ask Miss Songern about numbers; but in the big assembly room upstairs after dinner there must have been between five and six hundred people.

They have a beautiful building at Wheatridge and they love to show it, but that isn't the only thing they do with it, for community spirit only begins with pride in a splendid common possession and the personal enjoyment to be derived therefrom. They used it for their enjoyment and that of the surrounding communities too. That day everyone gathered for a program in the auditorium in the morning and then we were all served a wonderful dinner in the basement dining room and kitchen. The women of the Parent Teachers' Association had prepared and served the chicken and raspberry pie, and all the other good things, and the funds are to be used in fitting up the auditorium.

After the dinner we went upstairs again. The spelling match had to be finished in a separate room while the program was still going on, and Mr. Sargent had to take his moving picture machine into a room which could be darkened, but with these exceptions all of the singing, speeches, and contests were in the big, well lighted, airy auditorium. The speakers had caught the spirit which is in that community and did not waste time boasting of what had been done, but brought out the possibilities toward which to work as well.

The program included a talk from Mary C. C. Bradford, State Superintendent, on consolidation, the good effect it had had in Jefferson county, and the Smith-Townsend educational bill. Miss Sheridan talked especiallly interestingly on boys' and girls' club work in Colorado and cited instances of good work done in the Wheatridge community. Mr. Sargent had his moving pictures of other schools as community centers, especially those fine ones in the San Luis valley, the one at Center and the Sargent school at Monte Vista. We enjoyed the songs, the program and the dinner of course, but they didn't make up all the community day, nor all the community spirit of Wheatridge. Each person who realized that the community of Wheatridge belonged to him or to her and helped to share it with someone else made up the real success of the day, for it is only as a community is shared that it becomes really ours, and if the spirit isn't good, it's because we are lacking in some of it.—E. D.

Economy In Sweetening Fruits.

It is often noticed that some fruits like plums taste stronger or sourer after they have been sweetened. The strong bitter or sour flavor noticed in these fruits comes from cooking the fruit and sugar together for too long a time. It is more noticable in very acid fruits than in those which are milder. But there is some lessening of the fine sweet flavor in all cases when fruit and sugar are cooked together too long.

To have the finest flavor in sweetened fruit sauces, cook the fruit first, if a hard fruit until soft, and add the sugar and remove from the stove. The heat in the fruit is sufficient to thoroughly dissolve the sugar without further cooking.

Very soft fruits like strawberries, need the sugar added before they are put on to cook, but these fruits need only be brought to the boiling temperature to be cooked ready for use as sauce. The sugar therefore is not cooked with them any longer than it is with the hard fruit which are sweetened at the last moment they are on the stove.

If fruit is too juicy and must be boiled down to have a desirable consistency, boil it down to a thick paste before adding the sugar, or drain off the juice and boil that down then add it and the sugar to the fruit. When much sugar is added to fruit and cooked for a long time, instead of becoming jellylike it becomes dark and stringy like partly cooked molasses candy. If a sweetened fruit does not jelly and has begun to turn dark no amount of cooking will make it jelly. Continued cooking will give it a worse and stronger flavor. The only way to preserve the natural flavor of sweetened fruit is to let the fruit and sugar cook together but a few minutes.—Edith Allen.

What Women Want to Know.

Here are a few of the questions that were asked home demonstration agents in Illionis during December. They indicate the kind of service which these extension workers from the United States Department of Agriculture and the State agricultural colleges give (and are willing to give to a still greater extent) to the people in their territories. They may not know the answers to all the questions asked them, but they are in touch with sources of information, both State and Federal, and can obtain the knowledge from an authority on the subject. Demonstration agents in any State doubtless could give as diversified a list as this one from Illinois.

"Please plan a sample menu for a middle-aged man and woman who have but $7 a week for food."

"I cooked lye hominy in an aluminum kettle and it turned quite black. What was the trouble?"

"Can you suggest suitable food for an old man with a weak stomach?"

"What points should be observed in the selection of a pressure cooker, wheeled tray, and vacuum cleaner."

"Is there a possibility of putting a satisfactory indoor toilet in a house that has neither furnace nor water system?"

"I want to make soap of cracklings and lye. The recipe says to use an iron kettle. Will it do to use my copper, apple-butter kettle?"

"Where can I get a good glass table top?"

"I would appreciate information about any practical electrical dishwasher."

"Can you tell me if the Elberta peach is a good variety to plant in northern Illinois?"

"The women in our unit want to beautify their yards. Can you send us material on landscape gardening?"

"Please send me suggestions for

Lasting Qualities

Victor Hosiery will give unusual service. Manufactured of finest yarns, colored with purest dyes, and strengthened by special reinforcements, insures long life.

Wear *Victor Hosiery* for all occasions—dress, play and ordinary wear. Ask for *Victor* by name. If your dealer cannot supply you, write Byrne & Hammer Dry Goods Co., Dept. Victor Mills, Omaha.

Victor Hosiery

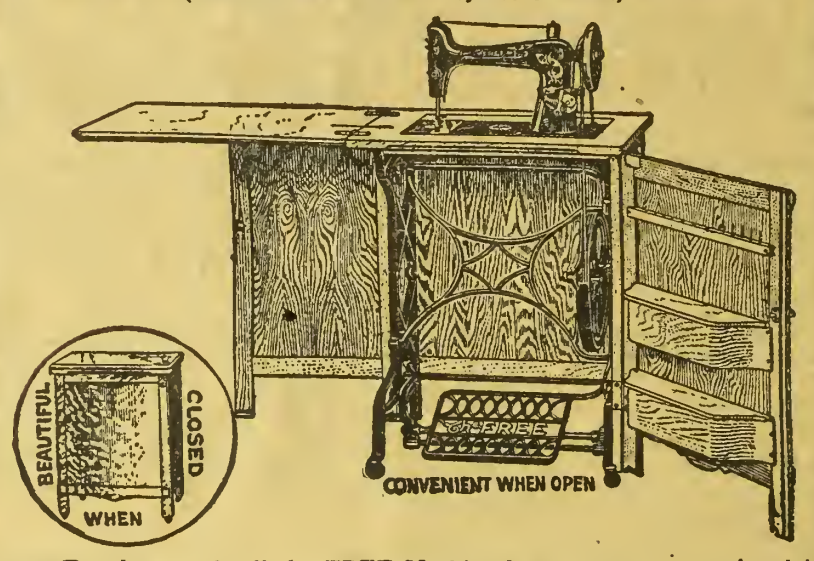
For Women Children & Men

Good News for Women

Here Is A New, Different, Better Sewing Machine

The FREE

(Invented and Patented by W. C. Free.)



WE endorse and sell the FREE Machine because we are convinced it is the most perfect of all machines so far invented.

Mr. Free's Rotoscillo and Toggle-link movements are conceded by sewing machine experts to be the most valuable improvements in sewing machines in the last forty years.

We will allow you $12.00 for your old machine—the amount to apply on your purchase of the FREE Machine.

This, together with a cash payment of $10.00, will place in your home any of the beautiful FREE models, and you may make payments thereafter at the rate of $5.00 a month until all is paid.

Send for Complete FREE Catalog

Out-of-Town Customers

You may take advantage of this offer also; write us for shipping instructions regarding your old machine—we pay the freight charges on your old machine as well as the new.

We Employ no Agents, so there is only one modest profit between you and the big factory. Send for the Catalog today.

THE DENVER DRY GOODS CO.

50 Pansy Plants $1.00 Prepaid

Long's Super-Giants, mixed colors. Well rooted, ice-proof plants, wintered out doors. Best size for setting out. Will bloom soon. Satisfaction or money back.

J. D. LONG, Seedsman, Boulder, Colorado

home bureau exhibits at county fairs."

"I have some chickens I do not care to keep on feeding. Please send me directions for canning them."

"Can you tell me if———malted milk contains the necessary vitamins?"

"Will you please suggest a program for our women's club this year?"

"Will you please send to us a simple play for children which will emphasize the need of milk?"

"Please send us budgets for an $1,800 income. There are four in the family."

Book of Fashions for Our Women Readers.

Five cents will bring to any woman reader of Western Farm Life a copy of our monthly Book of Fashions, a thirty-two page magazine containing the latest styles, besides much other material of interest. Three cents will bring a copy of the current number, if you order a pattern at the same time; or five cents, if you wish the Book of Fashions only. Address all orders Pattern Department, Western Farm Life, 1518 Court Place, Denver, Colo., and enclose coin or stamps.

Special Pattern Notice.

Subscribers are hereby notified that no orders for patterns from lists published before the issue of February 15, 1920, will be filled. Our arrangement with the firm furnishing the patterns before that date has been cancelled, so please order from lists published on and after February 15. This notice also applies to the old catalogues. The new catalogue is known as Western Farm Life Book of Fashions, as per notice appearing above.

Unsigned Pattern Orders.

We are holding two pattern orders which came unsigned. One under date of April 28, is from Lehi, Utah, ordering pattern No. 9600, an apron. There is no signature on the letter and no return notice on the envelope, so we are at a loss to know from whom the order came. If the party will write again we will be glad to send the pattern.

The other unsigned order is from Lamar, Colo., ordering pattern No. 2679, little girl's dress, two-year-old size. This came during January and has been held in the hope that a complaint of nondelivery would come in and disclose the name of the person ordering.

Many mistakes are made by our readers in ordering patterns. Very often they fail to specify size. At other times, they fail to give complete address. Please give regular postoffice address, including route and box number, if these are a part of the address. We are anxious to give prompt service, but can do so only if those ordering patterns exercise care in writing their letters.

New Fashion Service.

All Patterns Now 12 cents Each: Address WESTERN FARM LIFE, Pattern Department, 1518 Court Place, Denver, Colo.

9628. Ladies' Blouse.—Cut in sizes 36, 38, 40 and 42 inches bust measure. A novel sash arrangement on the sides adjusts the fullness.

9615. Boys' Blouse.—Cut in sizes 2, 4, 6, 8 and 10 years. The collar may be made detachable or it can be stitched to the neckband.

9633. Ladies' Dress.—Cut in sizes 36, 38, 40 and 42 inches bust measure. The wide girdle is cut in one with the front waistpanel which is trimmed with tiny buttons.

9635. Ladies' Dress.—Cut in sizes 36, 38, 40 and 42 inches bust measure. Pockets in the skirt are achieved in an attractive way to give the new wide hip silhouette.

9607. Child's One-Piece Dress.—Cut in sizes 2, 4, 6 and 8 years. Short panels of contrasting material grace this little frock of Dotted Swiss.

9627. Girls' Dress.—Cut in sizes 6, 8, 10, 12 and 14 years. Bloused is the waist and wide are the sleeves of this new design for junior girls.

9630. Ladies' Two-Piece Skirt.—Cut in sizes 26, 28, 30 and 32 inches waist measure. A soft plait at each side of the front and back gives a straight panel effect.

9621. Ladies' Two-Piece Skirt.—Cut in sizes 26, 28, 30 and 32 inches waist measure. The sides are cut out and neatly stitched to form trimming pieces.

Farm bureau meetings in Idaho last year had a total attendance of 57,180. There were 2,173 such meetings reported by county agents. Total farm membership in 1919 was 12,276.

Dyed Her Faded Skirt, Also a Coat

"Diamond Dyes" Make Shabby Apparel Just Like New—So Easy!

Don't worry about perfect results. Use "Diamond Dyes," guaranteed to give a new, rich, fadeless color to any fabric, whether wool, silk, linen, cotton or mixed goods,—dresses, blouses, stockings, skirts, children's coats, draperies,—everything!

A Direction Book is in package.

To match any material, have dealer show you *"Diamond Dye"* Color Card.

ESTABLISHED 1879 Stark JEWELERS

BRACELET WATCHES for Ladies are most practical as well as ornamental.

709-711 Sixteenth St., Denver.

BRILLIANTINE

The Great Discovery for Washing Clothes

Positively makes clothes snow white without rubbing. Does not injure fabric, nor fade any color. Package of six tablets, enough for three ordinary washings, 15 cents postpaid. Money back is dissatisfied. Agents wanted.

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KODAKS—FILMS and Professional Photo Supplies

FORD'S, 1029 16th Street Denver

Develops Films. Print Pictures. Mail Orders Solicited. Catalog Free on Request.

NEW WAY of Heating cellarless Houses

Complete outfit of Hot Water Heat $131

The outfit consists of an IDEAL-Arcola Radiator-Boiler and 4, 5, or 6 AMERICAN Radiators and Special Expansion Tank—everything except labor, pipe and fittings, which any local dealer will supply. See prices below for various sizes of outfits.

Here is the greatest comfort for farm life offered to you at pre-war price. The IDEAL-Arcola heating outfit will never wear out. It will outlast the building itself. There is no other contrivance which will heat your home with as much economy in the use of fuel. Nothing else is as safe or as easy to run. It is the solution of the farm-house-heating-problem.

IDEAL-Arcola Radiator-Boiler Farm Home Heating Outfits

Any Dealer will furnish in sizes to suit rooms and climatic conditions.

For Soft Coal	No. 1-B Size IDEAL-Arcola with 100 sq. ft. of Radiation	$131
	" 2-B " " " " 150 " " "	163
	" 3-B " " " " 200 " " "	198
	" 4-B " " " " 250 " " "	234
	" 5-B " " " " 300 " " "	270
For Hard Coal	No. 1-A Size IDEAL-Arcola with 135 sq. ft. of Radiation	$150
	" 2-A " " " " 200 " " "	191
	" 3-A " " " " 265 " " "	234
	" 4-A " " " " 380 " " "	279
	" 5-A " " " " 400 " " "	327

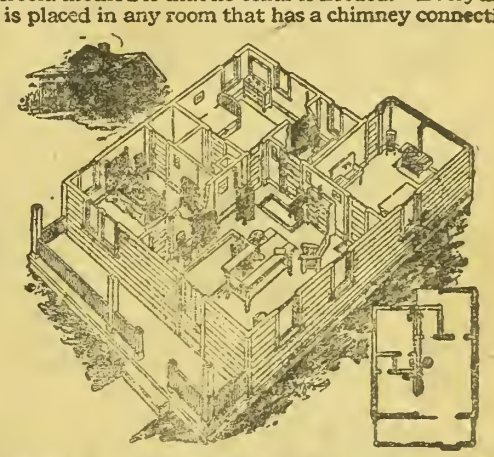
Prices include Expansion Tank and Drain Valve. Prices do not include labor, pipe and fittings. Radiation is of regular 38-in. height 3-column AMERICAN Peerless, in sizes as needed to suit your rooms. EASY PAYMENTS, if desired. Outfits shipped complete f. o. b. our nearest warehouse—at Boston, Providence, Worcester, Springfield (Mass.), Albany, New York, Philadelphia, Harrisburg, Pittsburgh, Baltimore, Washington, Richmond, Buffalo, Cincinnati, Indianapolis, Birmingham, Detroit, Chicago, Milwaukee, Minneapolis, St. Paul, Des Moines, or St. Louis.

Shipped complete for immediate installation

The beauty of the IDEAL-Arcola method is that no cellar is needed. Everything is on one floor. The Arcola is placed in any room that has a chimney connection. No running to cellar. Same water is used over and over again for years. No fire risk.

Buy now at present attractive prices for outfits complete!

IDEAL-Arcola outfits consist of the boiler and radiators to heat various size houses. Write us your requirements! Unlike stoves, there are no coal-gas leaks into the living-rooms. The IDEAL-Arcola delivers the soft, radiant warmth of hot water—not the dry burnt-out atmosphere of stove heating. There is no fire risk to building—no danger to children—fire lasts for hours! The Arcola burns hard or soft coal.



Simple way of heating a 5-room cellarless cottage by IDEAL-Arcola Radiator-Boiler and 4 AMERICAN Radiators. Ask for catalog (free) showing open views of heating layouts of 4-, 5-, 6-, and 7-room.

Catalog showing open views of houses, with the IDEAL-Arcola Boiler in position will be mailed (free). Write today

Sold by all dealers. No exclusive agents.

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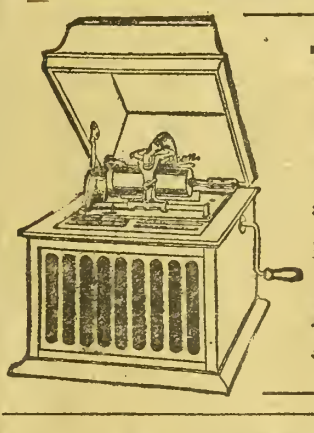

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and 12 Selected Records, Prepaid $48.20

A. L. ARVIDSON PIANO CO.

523 Sixteenth Street *Denver, Colo.*

1,000 Onion Sets $1.00 Prepaid

Long's special hazel size golden yellow bottom sets. Fine for growing green onions. Best of all for early crop dry onions for fall and winter. Satisfaction guaranteed.

J. D. LONG, Seedsman, Boulder, Colorado

Profitable Farm Poultry

W. E. VAPLON.

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, Western Farm Life, Denver, Colorado.

Avoid Chick Losses.

Very often the determining factor between success and failure with poultry is the equipment which one has; especially is this true with growing chicks. It is not necessary that this equipment be elaborate or expensive. The important conditions are, rat proof, water proof, proper size and ventilation.

With both old and young poultry, the roosting place must be rain and draft proof. It does not do for poultry to roost where small openings allow the air to suck across their backs, neither must the rain and weather be allowed to beat on them. Such conditions cause them to become uncomfortable, in which case they neither lay nor grow well.

Where young chickens are shut up at night the coops should be so constructed that rats and other rodents cannot gain an entrance. There is nothing more discouraging than when visiting the coops in the morning to find that rats or skunks have destroyed part or all of a brood.

Very often coops are constructed which are ample in size for the hen and her brood for the first few weeks, but as the chicks grow, they become crowded. Many chicks are, because of this lack of room, trampled to death or become stunted and never recover. The coops should be made large enough to accommodate the brood placed in it until they are 12 to 16 weeks old, when the cockerels and inferior pullets may be marketed. If coops of such size are out of the question, then move to larger quarters as soon as the chicks fill their original roosting place.

All brood coops should be so constructed that the hen can be kept in and the chicks allowed to range at will, unless cats are numerous, when it may be necessary to have closed-in runs in which the hen and chicks can exercise and the cats cannot gain admittance.

The hens should not be allowed to run at will until the chicks are at least six weeks old. Thousands of chicks are lost annually by being taken where the hogs, rats or hawks get them, or are led through the wet grass, or into a rainstorm and drowned. If the hen is kept confined where she can be watched, enemies are not as likely to appear and if a sudden storm comes up the chicks will scoot to shelter instantly.

Rat proof coops must also afford sufficient ventilation. In many cases, the coops are closed by placing a board over the opening and a rock or a piece of wood propped against it to keep it in place. In the morning when the chicks are turned out, a gust of over-heated, stench-laden air greets the nostrils. Using such methods results in sleepy, dull-eyed chicks. They usually, also, early develop chronic colds denoted by constant running at the nostrils, which develops later into roup or kindred diseases. In place of the solid board being used, a light frame should be provided on which is tacked either wire mosquito netting or hardware cloth, which will provide ample ventilation and keep out all intruders. Any dry goods box covered with two-ply prepared roofing paper makes a cheap and serviceable coop for a small brood of chicks.

As soon as the hen weans her chicks, make a frame of 6-inch boards set on edge, then nail 2-inch strips across the top of this frame. Place the strips 1 inch apart; slide this frame into the coop; it should entirely cover the floor so that no chicks can crowd in at the ends or down behind. If it is properly made the chicks cannot get underneath the strips and will be compelled to roost on top. This arrangement prevents crowding in the corners of the box and keeps them up out of the droppings. Coal or wood ashes can be placed underneath these roosts on the floor and when it is desired to clean the coop all that is necessary is to draw out the roosting frame and shovel up the droppings which are kept dry by the ashes. Where such frames are used the chicks early learn to roost and much trouble is later avoided when the pullets are moved to the winter quarters.

An ample supply of clean water may be provided in a home-made drinking fountain. Secure a No. 10 tin fruit can; punch several holes in the side about one-half inch from the top with a 20-penny spike; fill the can with water and invert it in a small sized cake pan. From such a fountain, little chicks can drink freely but cannot get in the water and chill or drown. If the larger drinking fountains are desired for old hens, use in the same way an 8 or 10 gallon galvanized pail and a small milk pan.

A convenient and serviceable feed hopper in which to keep mash or grain can be made of a soap box.

Based on the present price of eggs, oil, feed and labor it costs about 11 cents to produce a day-old chick whether it be hen or incubator hatched. If 50 per cent of the chicks hatched are lost because of poor equipment, which it not at all uncommon, the original cost for chick is doubled, plus the amount of feed consumed.

Good equipment provided now before the chicks are hatched is wise economy. It is not how many chicks are hatched each spring, but how many are raised to maturity that determines success.—Norton L. Harris, Kansas State Agricultural College.

Freak Eggs And Their Cause.

B. W. FAIRBANKS.

In raising chickens one often observes a great many peculiarities in the eggs produced. Quite frequently the Experiment Station receives a letter from a poultryman in the state in which he asks concerning these abnormalities. The first thought which comes to his mind is that there is something seriously wrong. Generally speaking, there is nothing of any great moment the matter and the cause is either that of an accident rather than a disease, or a cause easily rectified.

An abnormality which sometimes makes itself evident is that of soft-shelled eggs. There may be cited several causes for these, but the immediate cause is an improper functioning of the uterus. One of the chief causes of this improper functioning is that the birds are being over-fed upon a ration which is high in carbohydrates—the fat forming nutrient of a feed. This over-fat condition causes an absence of muscular tonicity in the uterus, and a forming egg goes through so rapidly that it is not covered with an excretion of shell forming material.

Investigations have also shown that the next most frequent cause of soft-shelled eggs is over-stimulation. The over-feeding of animal feed; constant use of certain condiments, or the addition of spices may be reasons for an over-stimulation which would result in soft-shelled aggs. A few small doses of epsom salts, or jalap, and the immediate withdrawal of any stimulants will result in normal conditions again.

These are perhaps the two most frequent causes of soft-shelled eggs. Experience has taught us that if a shell former, such as pounded raw oyster shells, is not added in the ration, the shell of the egg will be soft. Then, too, in very rare cases we find a bird that will not eat the shell-forming material when it is added. I know of one case when soft-shelled eggs were caused by an unusual fright. These causes, as well as a disease of the oviduct, which prevents lime secretion in proper amounts, are not numerous, and we may conclude that most soft-shelled eggs are the result of over-feeding or over-stimulation.

Perhaps one of the most interesting, and the most freakish, abnormalities is the formation of a perfect egg within another. This is more accidental than anything else. For some reason, not fully determined, the oviduct contracts and forces the egg backwards instead of in the opposite direction. The egg goes back into that part of the duct in which the albumin is secreted. One of the two things may occur;—the egg receives another coating of albumin and passes on, or it remains here until another yoke comes down and incorporates itself with the egg which has been pushed back. In either case, there will be a movement forward into the uterus, in which another shell will be excreted and then pass on as a normal egg.

Another form of oddity which is often seen may be classed as mis-shapen eggs. They are best described as "elongated," "constricted," and "tapering." From an economic point of view there is no need for a discussion of these, for such a discussion has no practical consequence. When the shell material is applied to the egg it is plastic, and the resulting shape of the egg will depend upon the form of the oviduct. If, for any reason, the oviduct becomes contracted as the egg is making its way from the oviduct to the cloaca, the form of the egg will be changed, in accordance with this contraction. If the flock is given proper care and attention as well as being fed upon a well balanced ration, mis-shapen eggs will be very rare, if they ever occur.

Occasionally a small yokeless egg appears which poultrymen regard, in some instances, as an evil sign. One will see them or hear them called "wind eggs," "cock eggs," "witch eggs," "luck eggs," and many other names. Some regard them as an indication of the end of the laying period. This is erroneous and the statement cannot be proven. Upon a superficial examination there is nothing evident, except a small egg, with a shell filled with white. On a more thorough examination there will be found a clot of blood, a piece of membrane, a piece of hardened albumin,

(Turn to Page 30.)

—"and from there we went to Japan"

Talk about adventures!

Men in the Navy come home with the kind of experiences that most chaps read of only in the books.

Here's your chance!

Uncle Sam has, as you know, a big Navy and gives red-blooded young fellows like you an opportunity to step aboard and "shove off".

What will you get out of it?

Just this:

A chance to rub elbows with foreign folks in strange parts of the world.

The chance for good honest work on shipboard—the kind of work that teaches you something real: the kind of work that puts beef on your shoulders and hair on your chest.

You will get 30 care-free vacation days a year, not counting shore leave in home or foreign ports.

You will have the kind of comradeship in travel that sailors know.

You will have regular pay, over and above your meals, lodging and your first uniform outfit—good stuff all of it.

You can join for two years. When you get through you'll be physically and mentally "tuned up" for the rest of your life. You'll be ready through and through for SUCCESS.

There's a Recruiting Station right near you. If you don't know where it is, your Postmaster will be glad to tell you.

To any Father and Mother:—
In the Navy your boy's food, health, work and play, and moral welfare are looked after by responsible experts.

Shove off!-Join the

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New and Used Auto Parts for Any Make of Car. Tires, Tubes and Accessories. We have a good line of Trailers.

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Beautiful, Bountiful, Brittle Beans
String Beans, Without Strings. Some Say, "As Brittle as Ice."
Genuine Brittle Wax, grown specially for me on a mountain ranch at elevation of 6,700. Extra early and will make good wherever beans grow. Finest hand picked seed. Beautiful stock. Pkt., 10c; lb., 35c; 3 lbs., $1.00, Prepaid.
J. D. LONG, Seedsman BOULDER, COLO.

Farmers' and Stockmens' Exchange

Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LEGHORNS.

SINGLE COMB WHITE LEGHORNS—EGGS, $1.75 for 15 prepaid parcel post, $6 per 100, express. Baby chicks, 18c. Mrs. C. C. Cole, Levant, Kansas.

PUREBRED SINGLE COMB BROWN LEGHORNS, exclusively. Eggs $1.50 per setting. Incubator lots, 8 cents per egg prepaid. Jacob P. Miller, Fowler, Colo.

FARMERS IF YOU WERE BETTER ACQUAINTed with the Buff Leghorn you would have more eggs. Baby chix and hatching eggs now ready. Champney, 2057 So. Broadway, Denver.

BABY CHIX—BUFF LEGHORNS MARCH 10TH, weekly hatches after this. Other breeds in any quantity. Book your orders early to avoid disappointment. Champney, 2057 So. Broadway, Denver.

SINGLE COMB WHITE LEGHORN HATCHING eggs from my Nebraska and Iowa State Show Champions. Eggs from special matings, $2 per 15; $12 per 100; heavy laying flock, $8 per 100. Mating list. C. G. Gould, Alma, Nebr.

BLAKELAND EVERLAYERS, SINGLE COMB White Leghorns. The famous Tancred high-laying strain. Breeding birds, hatching eggs and baby chicks. Place orders now. Quality the best only. Satisfaction guaranteed. Blakeland Farm, Littleton, Colo.

EXTRA GOOD SINGLE COMB WHITE LEGHORNS. Our flock is mated to produce results. Pure white heavy layers mated to sons of high record hens. (272 to 307 eggs per year at Oregon station). Eggs $7 per 100, setting, $1.50; order now. E. D. Allen, Route 1, Hastings, Nebr.

PLYMOUTH ROCKS

CHOICE BUFF ROCKS—EGGS, 15, $2; DELIVered. J. W. Ragan, Medicine Lodge, Kansas.

PURERED BUFF ROCK EGGS, $3 PER 15; PER 30, $5. Barbara Clinkenbeard, Wetmore, Kan.

PUREBRED WHITE ROCK EGGS $2 PER 15; $7 per 100. Mrs. Elsie Holderness, Dillwyn, Kansas.

BUFF ROCK EGGS, QUALITY, SIZE AND LAYers; $8 per bundred. W. K. Stillings, Cummings, Kansas.

BARRED PLYMOUTH ROCK EGGS FOR SALE, $1.25 per setting of 15; $6.00 per 100. John M. Mischke, R. F. D. 3, Loveland, Colo.

PURE BARRED ROCK EGGS FOR HATCHING—Prize winners; $5.00 for 15. Winter laying strain. E. Plessinger, Cheyenne Wells, Colo.

BARRED ROCK EGGS FOR HATCHING, FROM pens, either light or dark, $3 for 15; from range flock, $6 for 100. Send for mating list. Chester Blunt, Route 1, Greeley, Colo.

LAYMORE BARRED ROCKS—Eggs $5.00 for 15. Baby chicks 50 cents each. Nebraska State Fair and Missouri first prize winners. First in Colorado in profit with over $70 each in 1918. Rhode Island baby chicks, $20.00 per 100. J. R. Anderson & Son, Ft. Morgan, Colo.

BARRED PLYMOUTH ROCKS—THOMPSON strain. Dark narrow barring, barred to the skin, big-boned, bred for beauty, size and eggs. Special mating $5 per 15. Farm range, $2.50, $10 per 100. A. N. Waechter & Son, Yuma, Colo.

BARRED ROCK EGGS FROM GRAND SPECIAL matings, 15, $5; 30, $9. Range flocks, 15, $2; 100, $10. Our strain bred for extreme exhibition and heavy egg laying qualities. Ahlquist Bros., Box A, Florence, Nebr.

FOR SALE—BEST WHITE ROCKS IN THE West. Seven mated pens; pullets and cockerels to offer; setting eggs, $3.00 and 5.00. Last January at Denver Stock Show we won First Cockerel, First Pullet, First Hen, and many other prizes. F. L. Toliver, Ft. Collins, Colo.

RHODE ISLAND REDS

BEAUTIFUL ROSE COMB REDS. EGGS 30, $3, baby chicks 20c, postpaid. Lucy Ruppenthal, Lucas, Kansas.

ROSE COMB RED CHIX, $18, 100. EGGS FROM prize winners, $2.50, $3.00 per 15. Mrs. R. E. Hailey, Wilsey, Kansas.

THOROUGHBREDS ROSE COMB RHODE ISland Reds. Hatching eggs, $7, 100. Minnie Messing, Wiggins, Colo.

PUREBRED ROSE COMB RHODE ISLAND RED eggs, $2 for 15; $10 per 100. Baby chicks, 25 cents each postpaid. C. S. Holtzinger, Ellis, Kansas.

ROSE COMB RHODE ISLAND RED EGGS FOR hatching. Big bone, deep red, 100 $7; 50, $4; 15, $1.25. Mrs. Mark Flanagin, Pawnee City, Nebr.

PETERSON'S HIGH CLASS SINGLE COMB Rhode Island Reds. Write for prices and hatching eggs. Three pens. Nels W. Peterson, Mason City, Nebr.

VELVET ROSE COMB RHODE ISLAND RED eggs, 15, $2; Range, 100, $8. Bourbon Red turkey eggs, $5 per 11. Mrs. Mina Johnson, R 1, Erie, Kansas.

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

LOWER'S POULTRY FARM, ARVADA, COLO., is the oldest and largest breeder of tboroughbred S. C. Rhode Island Reds in the West. Our stock is line bred, from selected heavy laying type for seventeen years. Eggs for hatching, $12 per 100, $5 for 30. Send for catalog and price list of stock and baby chicks.

WYANDOTTES.

PARTRIDGE WYANDOTTES—CHOICE STOCK and eggs. Fred Karre, Cotesfield, Neb.

MINORCA.

SUYDAM'S SINGLE COMB BLACK MINORCAS. Few choice cockerels at reduced prices. Eggs for hatching. Write for prices. H. R. Suydam, 4500 Bryant st., Denver, Colo.

ANCONAS.

SUNNYSIDE EGG BRED S. C. ANCONAS—THE world's greatest egg machines; they hold the world's record for egg production. Do you raise chickens? Then why not raise the best. Our Anconas are from the best egg-producing strain in the world. We have culled and reculled our flocks until only the best are left, so you may be sure they have the egg qualities bred into them. 90 per cent fertility guaranteed. Eggs after May 15th, $1.25 per setting, $6.00 per hundred; baby chicks, $20 per hundred, 50 or less 25c each. Order at once. Mrs. J. B. Shenk, La Junta, Colo. Box L, R. No. 2.

BRAHMAS.

PUREBRED LIGHT BRAHMA EGGS, $2 FOR 15, $10 per 100. Baby chicks 25c each, postpaid. C. S. Holtzinger, Ellis, Kansas.

SETTINGS FROM THOROUGHBRED, LIGHT Brahmas. Greatest of winter layers. Prices reasonable. E. Grosser, 2240 Perry, Denver, Colo.

ORPINGTONS.

BUFF ORPINGTON—IN A LARGE CLASS, I won more firsts at this year's Kansas State Show than all others combined. Eggs for hatching from choice matings at $3.00 up. Write for ist. Carl W. Moore, Topeka, Kan.

LANGSHANS.

BLACK LANGSHANS, FARM RAISED. EGGS, 15, $1.50; 100, $8; chix, 20c. Mrs. G. W. King, Solomon, Kansas.

SEVERAL VARIETIES

S. C. R. I. RED EGGS, $1.25 SETTING, $7 hundred. R. C. White Leghorn eggs $1 setting, $6 hundred. Harry Knoll, Portis, Kansas.

BUFF ORPINGTONS AND SILVER SPANGLED Hamburgs. Orpington eggs $7 hundred, $1.25 setting. Hamburg $1.50 setting of 15 eggs. Leslie Chrestenson, Route A, Akron, Colo.

BUFF LEGHORNS, RHODE ISLAND REDS—best layers on earth. Headquarters for cockerels, baby chix; hatching eggs. Write us your wants. Champney, 2057 South Broadway, Denver.

COLUMBIA HATCHERY—WE CAN SUPPLY you with any quantity of Baby Chicks. We bave 14 varieties including all leading breeds. Write for our prices, you will save money. P. O. Box 1102, Denver, Colo.

YOU BUY THE BEST CHICKS FOR THE LEAST money, from the Colwell Hatchery, Smith Center, Kansas. 150,000 to be shipped everywhere; 18 cents each, 500 for $89; guaranteed alive or replaced free.

IMPROVE THE FARM POULTRY AS YOU DO your cattle and hogs. The farmer is beginning to realize that poultry, scientifically bred to egg production, improves the farm flock and increases his profits in these times of dollar eggs. Look ahead a year. You probably need new poultry blood this year and will buy a cock bird to furnish it, but for next year—buy Harr's baby chicks now. Your new blood will cost you nothing. For the price of one good cock I will sell you 100 baby chicks from heavy egg producing stock. Buy these chicks now and next fall you will have plenty of fine cockerels for your own use; also you will have several pullets and the money you can realize on your surplus cockerels will pay the entire expense feed and all. I can offer you ten breeds as follows: Rhode Island Reds, White Leghorns, Barred Plymouth Rocks, Black Minorcas, White Orpingtons, White Plymoutb Rocks, White Wyandottes, Buff Orpingtons, Buff Plymouth Rocks, and Anconas. Even tbo my flocks contain many prize winners, I can offer chicks at the following prices: Twenty-five chicks, $6.25; 50 chicks, $12; 100 chicks, $22; 500 chicks, $105; 1,000 chicks $200. Order direct from this ad. Full live delivery guaranteed by Parcel Post. I ship by Parcel Post, special delivery and will guarantee live delivery of every chick. Can make shipment within two weeks after receiving order. Send 25 per cent cash with order and balance few days before shipment. Dean Harr, Box G 502, Wichita, Kansas.

POULTRY SUPPLIES.

YOUR HENS WILL LAY THEIR HEADS OFF IF you install our Sanitary Poultry Roost. Kills all lice and mites. Cuts your chicken food bill 20 to 30 per cent. Ford & Thurston, 2531 Fairfax st., Denver, Colo.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HOGS

BIG TYPE POLANDS—SPRING PIGS FOR SALE at weaning time. Correspondence solicited. Gad Barney, Haswell, Colo.

REGISTERED DUROC JERSEYS—BIG TYPE, choice quality sows, gilts, and March pigs. F. W. Ruppenthal, Lucas, Kan.

FOR SALE—REGISTERED BIG TYPE DUROC-Jersey bogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

FOR SALE—REGISTERED DUROC JERSEY pigs of Col and Orion Cherry King breeding; prices reasonable. Geo. S. Turner, Canon City, Colo

FOR SALE—THREE DUROC JERSEY SOWS, bred to a son of the Grand Champion at Denver, 1919. Four young boars and one yearling boar. Roy E. Dickson, Route A, Calhan, Colo.

BUY YOUR DUROCS AT WEANING TIME, AND make the big profits yourself. I have prize-winning gilts and boars a few weeks old sired by champions that should be worth several hundred dollars each this year. Write for prices. J. N. Caldwell, Willow Grange Farm, Littleton, Colo.

REGISTERED BIG TYPE DUROC JERSEY hogs. We are now taking orders for boars and gilts of March farrow for May and June delivery. Have one fall boar left. All sired by Orion Cherry King 15th, and J. O. D. Joe Orion, out of the best berd sows. Write for prices. Money back if not satisfied. J. O. D. Ranch, Aroya, Colo.

CATTLE.

FOR SALE—3-YEAR-OLD REGISTERED AYRshire bull. T. H. Dillon, Jr., Bethune, Colo.

FOR SALE—FOUR REGISTERED HEREFORD Bulls, yearlings and well grown. Will make attractive price on them if taken soon. Ralph Miller, Manitou, Colo.

FOR SALE—REGISTERED SHORTHORN AND polled Durham bulls and heifers. One double standard 4-year-old roan real herd bull. Please don't write unless you want to buy. J. H. Held, Sterling, Colo.

REGISTERED GUERNSEY BULL, 14 MONTHS old, and one 6 months old for sale. Both sired by Auburn's Jackstone, champion Guernsey bull at Denver Stock Show in 1917. J. W. Purvis, Berthoud, Colo.

FOR SALE—60 HEAD OF GOOD GRADED Shorthorns from three to five years old, twenty calves by side, and all to have calves. Also twenty yearlings coming 2-year-olds, and thirty-six calves, coming yearlings. J. G. Martin, Box 215, Brighton, Colo.

REGISTERED HEREFORD BULLS—THIRTY bulls 12 to 24 months old, of the best Anxiety breeding, hardy and in good condition, with best of bone and ready to go on the range. One 2-year-old bull, full brother to champion cow at Denver, and a 5-year-old bull, the sire of most of the above. Priced for a quick sale. J. O. D. Ranch, Aroya, Colo.

HORSES.

TWO AND THREE-YEAR OLD REGISTERED Percheron stallions for sale. The 3-year-olds proven breeders. R. R. Lamore, Arriba, Colo.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—PURE NON-IRRIGATED SUDAN seed. High altitude. Address J. W. Brown, Rifle, Colo.

SUDAN GRASS SEED. HUNDRED POUNDS, $18. Sacks free. Is pure, Colorado grown stock; high germination. Long Seed Company, Boulder, Colorado.

GOOD CLEAN RED AMBER CANE SEED $2.20 per 100 lbs., sacked F. O. B. Lamar, Colo. Satisfaction guaranteed. S. F. Webb, Utleyville, Colo.

GUARANTEED SEEDS — ALFALFA, $12.50 bushel; sweet clover, $17.50; red clover, $27.50; common millet $1.75; German millet $2.25; Siberian millet $2.25; caneseed $1.45; white, sumac or sourless caneseed $1.75; seed corn, any variety, $3.50; kafir, Feterita and Milo maize, $1.85; pink kafir $2.00; Schrock kafir sorghum $1.75; timothy $5.50; sudan, $14.00 hundred; red top $12.50 cwt., sacks free. Satisfaction or money back. We ship from several warehouses and save you freight. Meier Seed Company, Russell, Kan.

SEED BARGAINS—ALFALFA, $21.00 CWT.; Timothy, $12.00; Amber caneseed, $2.70; orange or red amber caneseed, $3.00; sumac or sourless caneseed, $3.50; white caneseed, $3.50; Schrock kafir sorghum, $3.75; Siberian millet, $4.00; German millet, $5.00; common or western millet, $3.50; bog millet, $4.50; barley, $3.50; White Sweet Clover, $30.00; Red Clover, $45.00; alsike, $30.00; kafir, $3.00; feterita or milo maize, $3.50; Reid's yellow dent seed corn, $7.00; Boone county white or silver mine, $7.00; Bloody Butcher, $7.50; calico, $8.00; sudan, $13.50; red top, $14.50; all of the above prices are by the hundred, sacks free, satisfaction or your money back. Order now before another advance. We are right where the seed grows, and buy direct from the producer and sell to the consume. You save 20 per cent in dealing witb us. We ship from several warehouses and save you time and money in freight charges. Liberty bonds accepted as par; we allow a 3 per cent discount on 500 pound orders of one kind of seed. Get your order in now while our stocks are complete. If our seeds do not please you, all you have to do is to return them to us, and we will refund every cent you sent us, together with freight charges you have paid out. You can't lose a cent in dealing with us. No orders taken for less than 50 pounds. Meier Seed Company, Russell, Kansas.

STRAWBERRY PLANTS.

FOR SALE — PROGRESSIVE EVERBEARING strawberry plants. Kellog strain, $1.50 per 100; $12 per thousand. Blakeland Farm, Littleton, Colo.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

SOLDIERS—640-ACRE HOMESTEADS, SEVEN months residence. Duff, Casper, Wyo.

FOR SALE—IMPROVED 320-ACRE STOCK and farm ranch. Justus Gray, Purcell, Colo.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wisc.

IF YOU WANT TO SELL OR EXCHANGE YOUR property, write me. John J. Black, 33 St., Chippewa Falls, Wis.

LARGE SHEEP, CATTLE, FARMING RANCH, 50 miles east of Denver. Terms if desired. C. G. Parrett, Byers, Colo.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

IRRIGABLE FINE FARM LANDS—HOW MUCH do you want and what terms? Improved or unimproved? Railroad Farm Bureau, San Antonio, Texas.

600-ACRE RANCH, TWO SETS OF GOOD IMprovements, 250 under ditch, some water, near Brighton; fine dairy or stock ranch; fine beet ground; 1 mile of beet dump. Address Owner, Box 215, Brighton, Colo.

FARM AND CATTLE RANCHES—CHOICE LIST. If interested call or write F. E. Wrockloff, Merchants Bank, Seventeenth and Curtis Streets, Denver, Colo.

REAL ESTATE WANTED—SELL YOUR PROPerty quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., Dept 11, Lincoln, Nebr.

FOR SALE—120 ACRES, $85 PER ACRE. WE cut 61 tons of hay off 65 acres; 35 acres in oats, 15 acres pasture, but can be cultivated. Can lease for oil. 2½ miles from Checotah, Okla. F. E. Owen, Thistle, Utah.

FOR SALE—RANCH, 120 ACRES IMPROVED, 6-room house, large barn, fine orchards, first-class water right. For particulars write Peter Hansen, Grand Valley, Colo.

320-ACRE FARM FOR SALE CHEAP—6 MILES south of Fowler in Otero county, Colo. All good land; 40 acres has been in crop. Price, $12.50 per acre, one-third cash. The Irrigated Farms Mortgage Co., Cooper Bldg., Denver, Colo.

LANDS IN NORTHEASTERN NEW MEXICO, $15 to $30 per acre, producing excellent crops of wheat, oats, corn, kafir, beans, alfalfa, fruits, vegetables. Great dairying and stock raising section. Cheap grazing lands. Healthful climate, ample rainfall, altitude 5,200 feet. More farmers needer. Lands advancing in price with increased farming and population. For free illustrated booklet address Earle G. Reed, Agricultural Agent, Colorado & Southern Railway, Room 713, Railway Exchange Bldg., Denvere, Colo.

STOCKMEN ATTENTION—My beautiful modern 10-room home, completely furnished, is now offered for the first time. All in splendid condition, large roomy porches, high and sightly location, fine lawn, beautiful shade, large barn and garage for several cars, grounds 125x150 feet, sewer connections all in and all special improvement taxes paid. Will consider an exchange for good stock ranch of either the same or greater value and pay cash difference. This is the best residence in Littleton, Denver's best suburb. Owner, P. O. Box D, Littleton, Colo.

COME TO MOFFAT COUNTY—NO HOT WINDS, tornadoes nor crop failures. Good well water 10 to 30 feet; springs on many ranches; deep rich soil; free range in National forests, fence posts, timber and saw mills; excellent schools, the one at Craig ranking in the highest class in the state. Wheat with good farming yields 20 to 45 bus., alfalfa yields well without irrigation. An ideal grain and stock country. Fine improved land, $12 to $40. Come now and take advantage of the rise in prices which is just beginning. Full information sent. Craig Realty Co., Craig Colo.

ATTENTION STOCKMEN — WE HAVE TWO stock ranch bargains. Just what you are looking for; each ranch comprises 320 acres deeded land with substantial improvements and large acreage under irrigation, and in alfalfa, timothy, clover hay, unlimited outside free range, with 4,000 acres of leased land under fence for fall pasture. These ranches are located three miles apart, 125 miles from Denver. Good shipping point, big money makers. Prices $12,000 and $13,600 on good terms. See us at once for these. Reynolds, Covey & Reynolds, 625 Exchange Bldg., Denver, Colo.

COLORADO LANDS NEAR DENVER — 160 acres, 20 miles to Denver and mile and a half to station, coal mine, beet dump and school; good soil; lays fine; 15 acres in alfalfa, balance beet and wheat land; good water right; fenced; small buildings. Price $125 per acre for land and water; $2,000 down, balance ten yearly payments, 6 per cent interest. Immediate possession or purchaser can assume lease with possession next fall.

160 acres adjoining Hudson, 30 miles to Denver, all under irrigation ditch, but not under plow; sandy loam; good beet and alfalfa land. Hudson has bank, two elevators, lumber yard, high school, beet dump, several stores, garages, hotels, etc.; fine growing town. Price $110 per acre for land and water right; $2,000 down, balance ten yearly payments, 6 per cent interest.

640 acres, one mile to Platteville, 35 miles to Denver; nearly all under irrigation and in crop; no buildings; fenced, 80 in alfalfa; good water right; will divide if purchaser does not want whole section, or can add two more sections adjoining if want more land. Price $100 per acre, $15 per acre down, balance ten yearly payments, 6 per cent interest.

1,440 acres, cattle proposition, five miles to Hudson, living water, fenced, shelter, fair ranch buildings, good grass land; not irrigated. Price $20 per acre, easy terms.

3,040 acres, wonderful colonization proposition, 8 miles south of Keenesburg, 35 miles to Denver; good soil, lays fine, all below irrigation canal, but no water rights now go with land, but within few years no doubt will have plenty of water for this land and will sell then at high figure; good wheat land, in well settled neighborbood. This land is retailing at $40 per acre to adjoining farmers. We will retail at $40, or make attractive price to someone buying whole tract. Very easy terms.

Note—We bold as Trustee nearly 20,000 acres irrigated and nonirrigated land near Denver which we are offering at forced sale under order of court at very low prices and on unusually easy terms. Write for map and come to see us. Chicago Title and Trust Company, Trustee, 701 Ideal Building, Denver, Colo.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WRITE FOR DELIVERED PRICES ON CEDAR posts. Pay after unloading. J. B. Overton, Sagle, Idaho.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

RED CEDAR SPLIT FENCE POSTS. GUARANteed full size and A-1 quality. You pay after unloading. Send for booklet and prices delivered your station. Kirk Co., Box 1138-S, Tacoma, Wash.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—HOG WIRE, CEDAR POSTS, HOG pens and sheds. Also stock beet seed. Geo. Jarvis, 4546 Josephine st., Denver, Colo.

INVENTIONS.

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

MACHINERY.

FOR SALE—ONE 4-HORSE POWER OTTAWA kerosene engine, $135. Also one Sharples cream separator No. 4A, $80. Both same as new. Oxyoke Stock Farm, Morgan, Wyo.

ADDITIONAL CLASSIFIED ON NEXT PAGE.

PATENTS.

PATENTS—BOOKLET FREE. HIGHEST REFERences. Best results. Promptness assured. Send model or drawing for examination and opinion. Watson E. Coleman, Patent Attorney, 624 F st., Washington, D. C.

APPLE BUTTER.

FIVE-GALLON CAN OF DELICIOUS OLD-FASHioned apple butter, $7. Check or money order with order. Sample 15 cents, refunded with first order. The Pee-Kay Co., Paonia, Colo.

TANNING

LEATHER TANNING RECIPES. ONE FREE guaranteed cheap way. Agents wanted. R. N. Gilley, Carlton, Texas.

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

HONEY.

"THEBESTO" ROCKY MOUNTAIN HONEY, light colored, thick, fine flavored; per can, five pounds net, postpaid, anywhere west of Ohio river, $1.50. Send remittance with order. The Colorado Honey Producers' Association, Denver, Colo.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

SEED POTATOES

Plant Potatoes—they're sure to be high next fall. **Pearls, Russets, Red McClures; Brown Beauty, Ohios.**

C. M. Bauserman Produce Co.

18th & Wynkoop St.

B-D-T Bldg. Denver, Colo.

Livestock Field Notes.

The Pine Valley Dairy and Farms Co. of Colorado Springs, Colo., have some excellent individuals of the Milking Shorthorn breed for sale. They have some remarkable records in their herd. Read their ad in our Livestock Department of this issue.

The Bonvue Farms Co. of Denver have in their herd service bulls of world's record breeding. All their cows are officially tested. They are offering both males and females of fine individuality for sale. Read their ad in this issue of Western Farm Life.

Mrs. R. G. Douglas, of Sanborn Meadows, Rush, Colo., is offering an exceptionally fine Holstein bull calf. He is out of the State Champion Junior 3-year-old with a record of 34.25 lbs. butter in seven days. Read her ad in this issue.

Loesch Bros., owners of the Pahgre Valley Ranch at Montrose, Colo., are consigning three daughters of Sir Johanna Bess Segis to the Minnesota National Holstein sale at St. Paul in June. These individuals were selected by the Colorado Committee as part of this state's quota for the sale. These animals carry some of the very best Holstein blood in the country. Read the announcement in our Livestock Department of this issue.

Registered Breeding Bulls and Heifers

HEREFORDS
SHORTHORNS

Young sctock of both sexes for sale at all times. Our sales yard is located within two blocks of The Denver Union Stock Yards. We are pleased to show our stock at all times.

THE LOWELL PUREBRED CATTLE CO.

Union Stock Yards, Denver.

MILKING SHORTHORNS.
All Cows Officially Tested. 125 in Herd.
Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.
THE BONVUE FARMS CO.,
Stockyards, Denver, Colo.

REGISTERED
DUROC JERSEY HOGS
BRED GILTS FOR SALE.
R. C. VAN SCOY & SON
Highland Sta., Route 5. Denver
Phone Arvada 105-R-2.

Freak Eggs and Their Causes.

(Continued from Page 28.)

or some other foreign material on the inside, and these explain the occurrence of these small yokeless eggs. These pieces of foreign material get in the oviduct, and stimulate an albumin excretion just as a yoke would do and pass on the normal way of an egg. They should not disturb a poultryman, in fact, it has been observed that they are more frequent in a hen of great laying activity.

In the seasons of heavy laying the Experiment Station often receives inquiries concerning blood spots in eggs. When the ovarian follicle ruptures a little blood may leave and be incorporated with the albumin. There is nothing to do but candle the eggs and dispose of those showing the spots.

The last abnormality worthy of mention is the double-yoke egg, and we have triple-yoke eggs, but the latter are very rare. After considerable study Curtis, of Maine, concludes: (1) That some fowls have the tendency to lay double-yoke eggs more than others; (2) that fowls will do so while young; and (3) that the cause is that two yokes may be discharged together or meet some place in the duct and pass on after being enclosed in one shell.

Mr. Breeder and Mr. Livestock Farmer: Are you looking for good purebred livestock? If so, this is the place to get it. Our advertisers can supply your wants. Look the ads over carefully and write for what you want. If you have stock to sell, these pages will sell it for you.

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.

C. F. Burke, Mgr. Pueblo, Colo.

Glendale Stock Farm

Irvindale Rowdy
Grand Champion
Belgian Stallion
Chicago, 1917,
Denver, 1918
and 1919

Breeders of
BELGIAN HORSES
and
POLLED HEREFORD CATTLE

Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

BEAU ASTER

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER

Holyoke, Colo.

For Sale --- Registered Shorthorn Calves

EITHER SEX—6 WEEKS OLD—$50.

The mothers of these calves have three crosses on top of their pedigree which trace to Choice Goods, the St. Louis World's Fair Grand Champion.

The sire is a grandson of the famous bull March Knight.

Your Chance to Get Some Real Shorthorn Blood.

OTTO RAMSTETTER, Golden, Colo.

As sure as you are a foot high—

you will like this Camel Turkish and Domestic Blend!

Camel
CIGARETTES

Camels are sold everywhere in scientifically sealed packages of 20 cigarettes for 20 cents; or ten packages (200 cigarettes) in a glassine-paper-covered carton. We strongly recommend this carton for the home or office supply or when you travel.

R. J. REYNOLDS TOBACCO CO.
Winston-Salem, N. C.

YOU will prefer Camels smooth, delightful blend of choice Turkish and choice Domestic tobaccos to either kind smoked straight! It gives you entirely new cigarette pleasure!

Camels never tire your taste! They are always appetizing—and satisfying, because they have such a mellow mild body.

Camels leave no unpleasant cigaretty aftertaste or unpleasant cigaretty odor.

That's why we say frankly—compare Camels with any cigarette in the world at any price!

Irrigated Farm---Longmont, Colo.

76 acres, in beets, alfalfa, and wheat. Good improvements, including house, barn, garage, feeding pens, etc. Price $27,500, one-half cash.

FORREST RADCLIFFE, Denver, Colo.
1069 Gas & Electric Building. Phone Champa 688

COL. H. C. JENNINGS.
Purebred Livestock
AUCTIONEER
Also conduct Sales of Real Estate.
534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

Regist'd Holstein Bull Calves

Two Ready for Light Service.

Well grown, nicely marked from high producing dams. Sire, Western Sir Colantha Ascalon, he by Western Ascalon Champion Boy, a son of Colorado's Greatest Dairy Cow, and half brother to Colorado's Greatest Dairy Heifer. Write us.

W. B. & E. M. DOWNS, Yuma, Colorado.

AM TAKING ORDERS NOW FOR SPRING PIGS.

Also a good March Boar left—sired by First Prize Junior Yearling at Iowa State Fair.

AUGUST F. BORGMANN,
R. 1, Box 124, Longmont, Colo.

Cornforth Live Stock Co.
ELBERT, COLO.
Forest Glen Shorthorns

Our sales have been good the past year and still offer a few choice animals for sale.

FOR SALE.
Victorions Sensation 342521

Farrowed April 1, 1919. An outstanding big type boar, the best of breeding, and guaranteed to please.

WRITE US.

"DALYS DUROCS"
DALY & THOMPSON, Cambridge, Nebr.

Registered Shorthorns

25 COWS—3 to 6 years old; calves by sides, 2 to 6 months old.

PRICED RIGHT—MUST SELL
Have no Summer Feed.

W. A. Dickens, Longmont, Colo.

REGISTERED
JERSEY BULLS

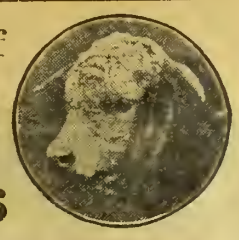
I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.

H. J. VAUGHN, KIRK, COLO.

H. C. DENNIS, Auctioneer
FORT MORGAN, COLORADO
Registered Shorthorn and Jersey Cattle
Real Estate Sales Conducted. I can sell your real estate if it can be sold.
Wire at my expense for dates.
Phone: Res. Morgan 155J; Office Morgan 15

The Hereford Corporation of Wyoming
Box 876, Cheyenne, Wyoming



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First Prize Junior Yearling Sow
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The Only Classes Shown

GREEN ACRE FARM
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this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

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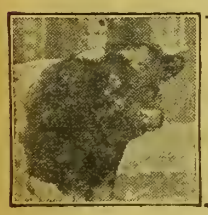
JAMES PONTIAC DEKOL ORMSBY



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Approximately 130 high class, registered Shorthorns were exported in April from this country to Argentina and Uruguay, the largest shipments ever made to either country. The prospect is that other shipments will follow in the near future. The outlook is encouraging for orders from other South American countries also. It pays to grow Shorthorns.

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R. of M.—15,175 Lbs., 546.3 Lbs. Butterfat. Class A. Only a few cows of this breed exceed this record in Class A official test.
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Sir Johanna Bess Segis and His Daughters

The Colorado Committee selected three daughters of Sir Johanna Bess Segis as part of the Colorado quota for the Minnesota National Holstein Sale at St. Paul, June 3, 4 and 5.

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PVR
PAHGRE VALLEY RANCH
QUALITY

Sir Bess' dam is one of the highest record daughters of King Segis Pontiac Count, the "Marvel of All Sires." Sir Bess' sire is Piebe Laura Ollie Homestead King, whose 2-year-old daughters have made more records of 20,000 pounds milk in a year than those of any other sire living or dead. The individuality and uniformity of Sir Bess' calves is wonderful. Sir Johanna Bess Segis is now owned jointly by Pahgre Valley Ranch and Mr. J. M. Hackney, and is now in service at Arden Farms, one of the very great herds of the country. This means that the next crop of Sir Bess' calves will be sold in Minnesota at much higher prices than we are now asking for his sons. Sir Bess represents the best cross of the two most prepotent bloods in the breed today. If you want to be sure that your next sire will increase the production of your herd and also improve its individuality, you will buy one of Sir Bess' sons **now. Remember—our herd is clean.** You are safe when you buy of us and we offer you the greatest blood in the breed today.

Pahgre Valley Ranch
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HERD BULL—MISCHIEVOUS JR., by THE HEIR

His dam is Mischievous 3rd, a full sister of BEAU MISCHIEF and the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of
GAY LAD and BEAU MISCHIEF Breeding.

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Only one bull of serviceable age left, but have some corking good calves.

ALSO SOME EXTRA GOOD BRED GILTS.

McCLENAHAN & DIXON, Greeley, Colo.

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Do Not Replace Straight Bates Shorthorn Blood

FOR

Straight Bates Shorthorns are the "foundation source' of the Milking Shorthorns of England and America. The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

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Herd headed by

King Johanna Cedarside Pontiac

One of the best individuals ever sired by King Segis Pontiac Count "Marvel of Sires."

Bull Calves and a Few Heifers For Sale.

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Win-O-Dee Farm Holsteins

Herd Bull KING TWISK SEGIS PONTIAC 182200.

This sire's two nearest dams have a record of 35.38 lbs. butter from 733 lbs. milk in seven days. The average record of his six nearest dams is 34.38 lbs. butter in seven days. Young Stock of Both Sexes For Sale.

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WHO NEEDS A PERFECT INDIVIDUAL TO HEAD THEIR HERD?

Son of a 23.23 lb. 3-year-old heifer—an unusually good yearly producer—by a son of our $5,000 bull—out of the 30-lb. cow who produced the great show cow and State Champion Junior 3-year-old Lilu Segis Pontiac, 34.25 lbs. butter in 7 days.

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SANBORN MEADOWS,
MRS. R. G. DOUGLAS. RUSH, COLO.

NOW That Coupon is Worth $2 on a Famous New Butterfly

More Than 175,000 New Butterfly Cream Separators Now in Use

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We will accept the coupon below the same as cash for full first payment of $2 on any 1920 model New Butterfly Cream Separator. Don't send a single penny in advance. Just fill out the coupon telling us which size machine you want (see list below) and we will ship it for you to try 30 days in your own home. Then you can find out for yourself just how much a New Butterfly Cream Separator will save and make for you. You can see for yourself before you pay a cent how easily this great labor-saving money-making machine will save enough extra cream to meet all the monthly payments before they are due.

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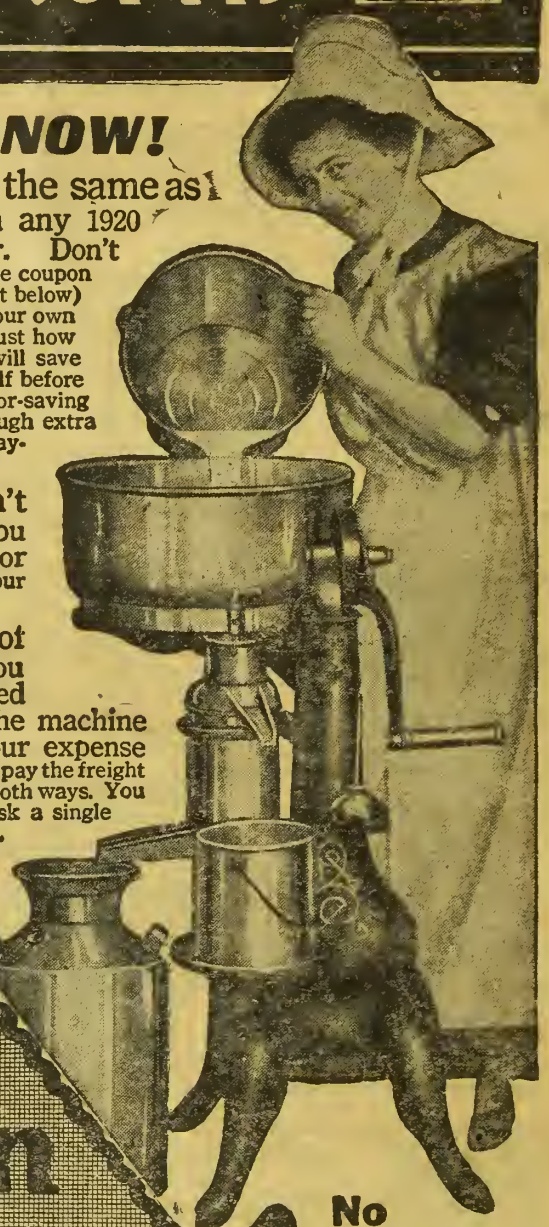

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The New Butterfly is the easiest cleaned of all Cream Separators. It uses no discs—there are only 3 parts inside the bowl, all easy to wash. It is also very light running with bearings continually bathed in oil. Free circular tells all about these and many other improved features.

Pick Out the Size You Need

Order Direct From This Advertisement on Thirty Days' Trial. Use the Coupon.

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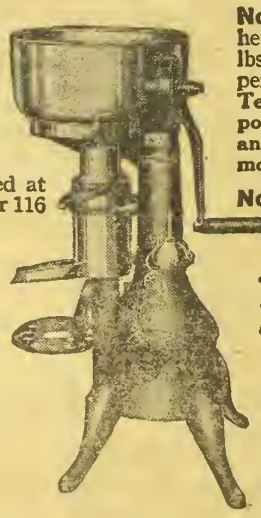

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It is Always Best—

to select a larger machine than you now need. Later on you may want to keep more cows. Another thing—remember, the larger the capacity the less time it will take to do the work.

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I keep.....cows.

I wish to buy on.....terms.
(Cash or easy payment)

Name.....

Shipping Point.....

State.....Post Office.....

Name of Your Bank.....

JUN 10 1920

WESTERN Farm Life

Vol. XXII. *Denver, Colorado, June 1, 1920.* *Semi-Monthly*

MACHINE GUN ATTACK ON CODLING MOTH IN A GRAND VALLEY ORCHARD

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In this way they reverse the situation that existed when solid-tired trucks or wagons were used with a resulting loss in crops, stock weight and general income due to slow, jarring transport.

On the resilient Goodyear Cord Tires a farm truck delivers smoothly and quickly, safeguarding the original condition of the load so as to secure the best prices for it.

The able pneumatics thus become important factors in the marketing of perishable produce and carefully fattened animals, as well as in practically all the work of raising and handling on and off the farm.

The excellent and often unusual mileages obtained from these tires attest the toughness of Goodyear Cord construction developed with that extraordinary manufacturing carefulness which protects our good name.

Farmers' records, detailing how pneumatics assist crop moving, motorization, chores and other activities, can be obtained by mail from The Goodyear Tire & Rubber Company, Akron, Ohio.

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A Western Magazine for Western Farmers and Stockmen

Published Semi-Monthly by The Farm Life Publishing Co., Denver, Colo. 1518 Court Place.

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VOLUME XXII. DENVER, COLORADO, JUNE 1, 1920. Number 11.

Silage Saved Stock for Many Wyoming Farmers

RUSSIAN SUNFLOWERS RELISHED BY BOTH CATTLE AND SHEEP

T. S. PARSONS, Extension Agronomist, University of Wyoming.

Four silos on the Gallatin Ranch, Sheridan county, Wyoming.

A NEW record for silage was made last winter and many a doubter has been convinced that silage will save more hay than any other feed and that stock will do better on it and hay than on hay alone, or on hay and dry ground feed. With hay at $30 per ton as it has been in many parts of Wyoming, many stockmen have saved their cattle and sheep with silage, and many who built silos last year have paid for them in what they saved in this winter's feeding.

The past winter was unusually severe and a large amount of feed was needed. Many men who had silos in 1918 doubled their acreage of silage crops in 1919, and were fortunate in doing so, as corn and Russian sunflowers, which are the principal forage crops of the state, did well even though the season was very dry. There was no shortage of feed on the farm or ranch where there was a silo. Those who fed silage for the first time this year have recognized its value and are going after it still heavier this season.

Silage has been fed to dairy cows and to sheep and cattle with equally good results. The open range in Wyoming as well as in other western states is rapidly becoming a thing of the past and ranchers are finding out that sheep and cattle can be wintered on silage cheaper than in any other way and are getting away from the idea that silage is only a feed for dairy cows. Cattle and sheep have been fattened on silage and alfalfa hay, and ewes fed on silage and hay at lambing time have saved a much larger percentage of their lambs and have done much better in every way than those kept only on dry feed.

Silage Fine for Sheep.

Many ranchers were skeptical as to whether or not sheep would eat silage. A demonstration was arranged at the T. J. Brough ranch in Uinta county. Mr. Brough is secretary of the Wyoming State Farm Bureau and built the first silo in his county. At the demonstration good alfalfa hay was placed in the corral and the feed troughs filled with sunflower silage. When all was ready 100 sheep were turned in. They saw the alfalfa first and began to eat that, but soon they began going to the silage and in ten minutes not a sheep was eating alfalfa, but all were eating silage and they stayed with it until it was all cleaned up. Over 200 farmers and ranchers witnessed the demonstration and the most skeptical was convinced that sheep will eat silage. As the result of this demonstration many silos will be built in Uinta county this year.

The writer, with C. N. Shepardson, extension animal husbandman of the Wyoming agricultural college, held silage feeding demonstrations at the C. A. Welch and Lloyd Taggart ranches in Bighorn county in March, just as the ewes were in the midst of the lambing season. The ewes were doing well and were saving a large percentage of their lambs. The silage gives just the succulence that is needed to make the ewes give plenty of milk. It also tones up their systems and makes them eat well. Mr. Taggart said he believed that his ewes ate more hay when getting silage than when they did not have it. Ewes that were lambing on dry feed in the same vicinity were not looking nearly so well and were losing many of their lambs. Only one flock of sheep were seen that were not doing well even though they were getting silage. These had been on the range all winter and were in very poor condition and had not yet had time to come up on their milk. They should have been put on hay and silage sooner. Silage cannot be expected to make up for starvation and poor care for weeks preceding lambing time.

Elias Johnson of Lovell, Bighorn county, has fed silage to his ewes for two years. His ewes lambed out 166 per cent. He thought so much of the silage that he built two more silos last year even though each one cost him about twice as much as the first one. His silos this year saved him a crop of wheat. He had 40 acres of wheat that did not come up well on account of the dry weather and wild sunflowers practically took the field. He put the whole crop in the silo and considered it as good as any silage he had. This is one of the advantages of having a silo. With a silo a crop can often be saved that otherwise would be a total loss.

Charles Renner of Basin had about 1,500 ewes that were lambing when the ranch was visited in March. He was feeding alfalfa hay and dried beet pulp. He was under the impression that the beet pulp would make plenty of milk, but it was not doing so. His ewes were in fine condition as regards flesh and were giving birth to fine large lambs, many of them twins. But there was a lack of milk and he was losing many lambs. Mr. Renner made the remark in the presence of a number of farmers that he had lost at least 150 lambs. These he said would be worth next fall $10 per head. A total amount sufficient to build two 115 ton silos. He is converted as to the value of the silo and will build one this year. Wet beet pulp is a succulent feed and will help to produce milk, but the dried pulp is little better than any other dry concentrate. It will produce fat but not milk.

Silage Helps at Lambing.

W. A. Robb of Bighorn county has fed silage for many years and is a firm believer in that feed. He says: "Silage in January is like blue grass pasture in June, and lambing with silage and shelter in March is just as safe as lambing later in the season on pasture."

The value of early lambing on silage is also borne out by Malcolm Moncrief of Sheridan county. He has ample lambing sheds and two large silos. His ewes lamb a month to six weeks earlier than those of his neighbors, and he puts his lambs on the market in the fall weighing ten to twelve pounds per head heavier and they are sold as fat lambs instead of feeders. His plan is to keep the sheep and lambs up until the grass gets a good start on the range. He can do this, as the sheep and lambs do as well on the silage as they would on grass and the early lambs get a better start.

King Brothers, the well known Rambouillet and Corriedale sheep breeders of Wyoming, also use silage in their feeding operations. Two large silos on their Wheatland farm supply silage for a large number of purebred sheep. They now feed all their purebred ram lambs at Wheatland because they say they get more size on them and do it more cheaply than by the old method of feeding. They are increasing their silage capacity every year. Silage plays an important part in the fitting of their show sheep.

Everyone is familiar with what silage will do for dairy cows. That need not be discussed here. Silage is just as valuable in feeding beef cattle. It is generally understood that three tons of silage is equal to one ton of alfalfa hay, but in actual feeding operations it has been found that where silage is fed to cattle one-half the hay can be saved, and it does not seem to make much difference whether corn or sunflower silage is used. The sunflower silage has probably nine-tenths the value of corn silage in feeding. Farmers in the Bighorn Basin the past winter paid $12.50 to $15 per ton for silage. In the same section hay could be bought for $20 to $25 per ton.

A prominent rancher in Sheridan county wintered cattle on sunflower silage in 1918 and 1919. He also fed some alfalfa hay. He said that five acres of silage saved him 50 tons of hay at $15 per ton. He doubled his silage crop acreage in 1919 and found it still more valuable at the higher price of hay the past winter. He made the mistake, however, that many stockfeeders do, of trying to winter too many head on a given amount of feed. Cattle require so much feed for maintenance and it pays to have this amount or else cut down the number of head.

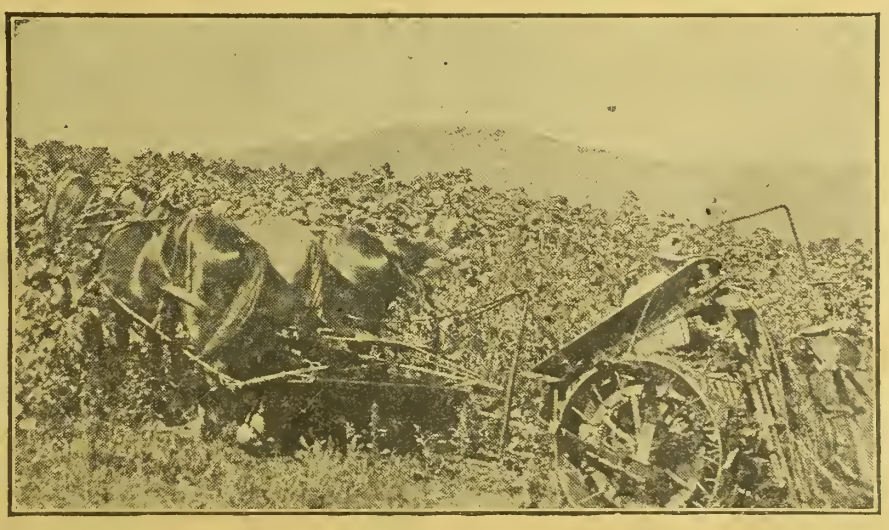
Sunflowers Fill Four Silos.

On the Gallatin ranch, also in Sheridan county, sunflower silage has been used for two years in winter stock feeding and in fattening steers. Forty-five acres of sunflowers were grown for silage in 1918. They considered silage such a valuable feed that 60 acres were planted in 1919. This winter's feeding has given very satisfactory results. The Gallatin ranch has a battery of four 200-ton silos and they are doing much to prove that the silo is just as valuable an asset on the large cattle ranch as on the smaller dairy farm.

The objection made by some ranchers that the silo and the feeding of silage was all right for the small farm, but was not practicable on the large ranch where a large number of cattle were to be fed, no longer holds. On the Rothwell ranch in Johnson county, Wyoming, ten acres of sunflowers were grown last year. A large silo was filled and ten pounds per head was fed to 900 head of cattle along with one pound of cottonseed cake per day per head. The cattle ran out on the range and received no hay. The manager said the cattle were doing fine and not a single head had been lost during the winter. One hundred acres of sunflowers will be grown on the ranch this year and two more large silos will be built. The Rothwell ranch probably has the largest silo in the state at the present time. It is a wooden structure 23 by 41 feet. The new silos to be built will be 22 by 40 and 24 by 60 feet, respectively, and will be built of hollow tile.

The Horton ranch in Johnson county has grown and fed sunflowers for several years. Seventy-five acres of sunflowers were grown on the ranch last year and Mr. Horton says they are great. The Hereford Corporation at Cheyenne, one of the largest purebred cattle breeders in the country, has two large silos on the ranch joined together and surmounted by a water tank. These people consider silage the best and cheapest of feeds. They had many "blue ribbon" cattle at the National Western Stock Show that had been fed silage. C. A. Hauf of Glendo, Wyo., also had prize winning stock at the show that had been fed on silage. These are sufficient recommendations for silage. These men would not feed it if they did not get results. Practical cattlemen are beginning to believe in silage, and it will be more generally fed every year.

No improvement is more to be desired on the farm or ranch than the silo. It stands out and above all the buildings, a great beacon light of progress—the "lighthouse of the farm" someone has called it—and it is visible evidence that the livestock on that farm will not go hungry. There are probably less than 300 silos in Wyoming at the present time. It is quite certain, however, that the number will be increased within the next few months by at least 100 per cent.



Harvesting sunflowers with the corn binder on a Wyoming ranch.

Scottish farmers are growling because their wheat is winter proud. They mean that the fall and winter have been favorable to a heavy growth of wheat, which is likely to lodge just before harvest time. Under such conditions they use the roller to compact the soil around the roots and pasture with sheep.

Some Practical Suggestions on Direct Marketing

HOW PRODUCER AND CONSUMER MAY MEET ON A BUSINESS BASIS

R. T. BURDICK, Associate Agronomist Colorado Agricultural College.

IN a way the farmer and consumer today may be compared to two men seeking to meet each other in a large, dark room full of furniture, bric-a-brac and slippery rugs. They need a bridge over these obstacles to aid in getting together.

In the past, both farmers and consumers have made efforts to correct the difficulties and abuses which exist in our present marketing system. The records of history are strewn with the wreckage of co-operative organizations which have fallen by the way. Possibly one explanation of their failure may be brought out by a statement made by a keen student of marketing problems. He said that when a group of farmers form a co-operative marketing association they are in the position that a city would be that opened a telegraph office and advertised to do business before they had erected the telegraph wires and opened offices in distant cities.

Our problem is surprisingly like the case cited, because no farmer organization may hope to succeed unless it is able to make contact with buyers in many markets, and no farm organization should survive unless it is able to relieve present business organizations from the duties which they are now performing and conduct business in a way that satisfies the buying public.

If each farm organization should attempt to solve the selling problem by establishing their own representatives in several important markets, it would be only a very short time before the farmers themselves would clutter up the markets with a duplication of efforts which would be even worse than our present middlemen system. This would be unavoidable because the farmers from Colorado would require their own representatives, farmers from any other state or section would require their own representatives, and these representatives would be all working over the same territory with as much duplication of effort and probably more than now exists.

But a small organization would be unable to compete with a large farm organization because it could not stand the expense of placing agents or salesmen in many markets. In fact, this has been one reason why small farm co-operative organizations have failed. They have not been large enough to take over the duties of handling and distributing their product to the satisfaction of the buyers. They have been unable to grow because they could not show sufficient return to warrant farmers joining with them. Success depended upon a growth and growth in the eye of the farmer hinged upon their ability to deliver the goods. They could not break the circle and they failed.

Probably the most successful and best known farm organization is the California Citrus Growers' Exchange. This organization succeeds because of distance to market, perishable nature of their product, and the risks of the business combined to produce a set of circumstances that threatened the destruction of the orange industry. When men are faced with destruction, they will stop at nothing in their attempt to solve their problem. The spur of necessity gave the orange growers a chance to join in a big organization which at once, practically, reached a size which warranted establishing agencies and hiring salesmen to make contact with important markets. Once that contact was made and their success proved, they have been able to continue their growth and satisfactorily handle the problems of increase in their business.

How is a small farm organization today going to avoid the pitfalls which have proven the death of similar organizations in the past?

What they need is an organization at the market, which is equipped to handle the business of many small farm organizations. Such an organization would require but one set of salesmen who would be available to any farm organization which chose to take advantage of their facilities for marketing.

Such a selling organization is in operation today. It is known as the North America Fruit Exchange. This exchange has sales offices in 119 of the principal cities of the United States. When a farm organization decides to do business with the North America Fruit Exchange, the exchange furnishes them with a sales manager, provided they can guarantee a certain amount of business. The exchange pays telephone and telegraph expenses, furnishes the complete services of their 119 branch offices, and for these services charges the farmers a flat rate on the produce handled.

A new farm organization that joins up with the North America Fruit Exchange is assured of the same treatment given to an organization which has been dealing with them for years. It is possible for a new association to immediately reach a position of success and influence in the farm community by virtue of the advantages offered through making this contact with a large selling organization.

Possibly the best illustration of how this co-operation has worked may be found in a history of the Michigan Potato Growers' Exchange, with headquarters at Cadillac, Mich. This Potato Growers' Exchange was started in August, 1918. They made arrangements with the North America Fruit Exchange whereby the latter would handle all their produce. In the season of 1918-19 they handled over 2,000 cars of potatoes and over 100 cars of other crops. The potatoes were shipped to 186 cities in 26 different states. The report of the Potato Growers' Exchange states that through the system which was used they were able to net to the potato growers 29 cents per hundredweight more than the open markets in Michigan were offering to growers who did not belong to the exchange. This was not secured by raising the price at the markets, but was done by eliminating some of the risks and duplication of effort in handling potatoes under the old marketing system.

The prospects for the 1919-20 season indicate that the Michigan Potato Growers' Exchange will sell in the neighborhood of 3,500 cars through the North America Fruit Exchange. The Michigan potato growers are enthusiastic and they have reason to be, because in this co-operation between the farmers on the one hand and a central selling agency on the other, they have been able, in a large measure, to solve the complex problem of putting farm products on the market at a price which is satisfactory to both producers and consumers.

The success of this venture should be a stimulus to any farm organization. Let us study carefully the work of these successful organizations. In them we may find many tested policies which should help us in solving our own marketing problems. Let us bridge that gap.

What Is Breeders' Aim in Duroc Jersey Type?

DISCUSSION BRINGS OUT POINTS ON BEST HOG FOR FARMER

RECENTLY letters were sent to several representative breeders of Duroc Jersey hogs in Colorado to ascertain the idea they had regarding the most suitable type of hog for the farm. The breeders, naturally, do not all agree on this question, although there are some points on which they are in accord. The new breeders have been somewhat confused as to what the trade demanded. Some have felt that size was the only consideration and have gone after it regardless of depth of body and smoothness. Breeders themselves of course must be depended upon to establish the type and hold it where it will be of the best advantage to the average hog raiser.

In Colorado most of the farmers are producing two litters a year. They find it necessary to market them at the age of seven to nine months. What they want is something that will be able to put on a reasonable amount of finish at that age. The idea seems to prevail that we do not need to produce as much lard as we used to. At any rate, the buyers on the market seem to be attracted to a hog that carries a considerable degree of finish. These are points that need to be considered by the farmers in the development of their herds. There is much food for thought in the views expressed and ideas are advanced which, if followed, will be helpful to all. Note that each breeder emphasizes the importance of good depth of body, good bone and a strong back.

* * *

From Clements of Paonia.

Your letter calling my attention to editorial in Duroc Bulletin of March 15 on "The New Type of Hog," and requesting me to comment thereon, is at hand.

Answering your first question, "What is your idea as to what type of hog will suit our needs" would say that I do not think I could write a better description of my ideal type of hog than that contained in the editorial you refer to. I quote the description:

"A hog with size and scale, well upstanding, with nicely arched back (but not extreme arch); a straight underline and not one which is parallel with the top line; good length of body; width carried evenly from end to end; a well rounded ham and a deep, even side; large bone of good quality and good feet. This hog should appear muscular, neat and clean cut throughout, free of flabbiness. This hog should be able to handle himself easily and show abundant vigor."

But there is a characteristic, not suggested in this description which this hog must have, viz: Early development, not early maturity. This hog should show this type at seven or eight months and weigh from 275 to 300 pounds, but should be capable of being grown to a weight of 800 to 1,000 pounds at maturity. A hog that required two years to develop this type would be a failure. For hogs are grown for pork and the great majority of pork producers market their hogs under one year old, and type that a hog would have developed if permitted to live longer than his allotted time is of no value.

In the development of this ideal type we must move along only as rapidly as we can carry early development and easy-feeding qualities along with greater height and length. I see no reason for extremely long legs. Long enough to keep the sows' udders from dragging in the mud is sufficient. Right here let me say that I do not think the extreme type should receive the recognition that he does in the show ring. He has only a part of the characteristics of the efficient pork machine, and the awards should be made on the machine nearest perfect—the one doing the most efficient work, and not on the incomplete and unperfected machine.

Answering your second question. "What significance does a high back and big bone have in economical production?" would say that a high back indicates a strong back, and a strong back is obviously important. I consider big bone of good quality and good feet of very great importance in economical production. A sore-footed hog or a lame hog absolutely will not thrive, and while bone large enough and strong enough to carry the hog that is destined to lead the short and merry life from the farrowing pen to the killing pen is sufficient, yet hogs kept and fed under ordinary farm conditions rapidly deteriorate in size and strength of bone and it is up to the breeder to furnish breeding stock that will correct this deficiency.

Mr. Editor, prolificacy, early development, good feeding qualities have made the Duroc the most popular of all breeds. If we are to maintain this popularity we must retain these indispensible characteristics. Fellow breeder, you and I have a voice in fixing the standard of type. Let us speak up. The extreme type breeders are doing good work in the development of the Duroc, but make them perfect their invention before they commence to collect royalties. Let us hold fast to that which is good and make haste slowly.—A. A. Clements, Paonia, Colo.

* * *

Secretary Burke's Views.

Commenting on the editorial in the Duroc Bulletin entitled "The New Type of Hog," will say that perhaps I may be rightfully called an "extremist" in the matter of type. It seems also that the so-called "new type" is not a new type at all, as it is the ideal type that many of us have had in mind for over ten years and have produced as many of them as we have been able to produce.

It is not, therefore, necessary for us to "change our type." We shall simply have to produce a higher percent of what I would term the "correct type" or "big type."

The greatest mistake usually made in this matter of type is to presume that "gun barrel" bodies and roughness is necessarily associated with size and height. Of course, we can find so-called breeders who have little or no conception of what they want to produce, who will drive out a big, or even a medium sized boar with shields six inches thick and wrinkles that you could hide in, and claim to have the "big type" or "new type."

It is emphatically unnecessary to lose quality in order to develop size. Some of the coarsest, roughest, hardest boars I ever saw were of the "watch charm" or "dumpling" variety.

While the popular type of Duroc today may not take on quite as high a finish at six months, he will finish reasonably well at any marketable age and will keep on growing if the market isn't right, and will do it with profit to his owner, something that the shorter legged, smaller type will not do.

As to the proposition of sacrificing quality for size, I would simply say, don't do it. Of course, it is more difficult to develop and maintain two characteristics than one, but quality and size are of equal importance.

To the beginning breeder I would say, don't be afraid of getting too much size or getting their backs too high. No danger of either for many years to come. For every back that is too high there will be one hundred that are too low, and as to getting them too big there "ain't no such animal."

The only reason I am not using a 1,400 pound Duroc boar is that 1,030 pounds is the largest I have been able to produce, and keep them smooth, but I am going to get them bigger. All this talk of getting them too big for the farmer is hurting Colorado Durocs today. The farmer wants them "big type" because they are more prolific, better grazers and grow bigger at the same age. The man who wants the smaller type can get plenty of them from the "off type" animals from the big type herd.

Let us grow bigger and better Durocs and put Colorado "on the map" as a Duroc state.—C. F. Burke, Pueblo, Colo., Secretary, Colorado Duroc Breeders' Association.

* * *

Prof. Morton's Views.

In response to your request for information in regard to my ideas on the right kind of hog:

First, the type. The history of lard breeds, the last few years, has been a striving toward greater size. This came as a reaction from over emphasis on quality. The two are antagonistic to a certain extent. Two characters cannot be brought along in equal measure in any breed with the rapidity that one character can be developed. More than that, there is a direct antagonism between quality and great size, because rapid growth to a great size requires coarseness of bone and tissues. Breeders may undoubtedly be able to produce the 1,500 pound hog, which is a mark set by some who want still greater size. If the 1,500-pound hog is gotten he

(Turn to Page 19.)

Electric Light and Power For Farm Home Use

DRUDGERY RELIEVED BY ELECTRICALLY OPERATED DEVICES

A. M. DANIELS, U. S. Department of Agriculture.

ELECTRIC light and power in farm homes not only removes drudgery, but saves time and money as well. The time required to operate the churn, the separator, and the washing machine, and to do the ironing, the cleaning with the vacuum cleaner, and the pumping of water, has been reduced materially in many cases. More time is made available for other things and not infrequently it has been possible to reduce the amount of hired help.

Today as never before is the need of labor-saving devices in the home being felt. The servant problem is rapidly becoming more serious. The increasing wages of household servants and washerwomen are approaching a point which the family of average means can not meet. Through electricity, the tireless servant, is perhaps to be found the solution. Washing and ironing machines for household use, electric dishwashers, vacuum cleaners, toasters, ranges, and the whole series of electrical household specialties for use in the city and in farm homes where electricity is available certainly have brought relief to many and are only waiting to be called upon by many others.

Comparatively few of our farm homes today have electricity available. The number, however, is increasing rapidly owing principally to the advent of the farm lighting and small power plant. In addition to this means of supply, some farm homes are so situated that electricity can be obtained from high-power transmission lines that pass within a reasonable distance; others are near streams of water which may be developed as sources of energy for farm or community hydro-electric plants; while in some localities successful windmill electric generating plants have been the means of supply. In the Yearbook for 1918 (Separate 770), directions are given for conducting preliminary surveys to determine the possibilities of a particular stream.

Where farm homes are supplied with electricity from transmission lines, central stations, or farm hydro-electric plants taking current directly from the generator, it is usually supplied at 110 to 115 volts. Windmill electric plants may be of this voltage, but on account of the relatively high battery investment they are more likely to be of the 30 to 32 volt type. The engine-driven farm lighting and power plants, which are multiplying rapidly at present, are mostly of the 32-volt type; many of the companies supply these plants operating at 110 volts also.

The uses for electricity, or the tasks to which it can be applied about the farm home, are almost unlimited. The man who may install it primarily for lighting will soon find himself applying it to other tasks, and as he begins to see what it can do for him and the multiplicity of its usefulness becomes apparent, he will realize how electricity is each day lessening his labors and making this old world a happier and better place in which to live.

The first thought of electricity is usually for lighting, and this not improper. But it should not be overlooked as a source of power. It was not so long ago that, with the exception of water power and the steam engine for the heavier work, the farm was without motive power and thus hand labor was not eliminated on the farm as it was in the city and in the industrial world. In recent years great strides have been made. Mechanical milking is now a reality and with it a reduction in hired help.

The utility motor adapts itself wonderfully well to a number of uses, thus saving the expense of installing a separate motor for each job. Several types are available. Sometimes a support rod is attached to the motor base to steady it when in operation. This is a desirable asset.

Then there are the many tasks of the kitchen where a little motor can do in but a fraction of the time consumed by hand work, jobs that, though not particularly tiresome, are nevertheless irksome; such as grinding meat and coffee, stuffing sausage, mixing bread, or sharpening knives.

The electric range will be better appreciated as its advantages become better known and will be used where electric plants of sufficient size to operate a range are available. Many heating units such as table utensils, fireless cookers, water heaters, griddles, and others, are already in use and are proving themselves to be desirable under different conditions. The washing machine, electric iron, vacuum cleaner, sewing machine motor, and motor-driven pumping units are all helping to make life on the farm more enjoyable and appreciated.

Lighting.

Lighting probably is the influencing factor in a decision to have electricity available in the farm home; therefore it usually will be considered first. But before any definite steps are taken toward purchasing electricity from a central station or high-tension transmission line, or installing a private farm hydro-electric plant or an engine-driven plant, it is advisable to make an estimate of the average daily load.

If it is assumed that in the list below the distribution of lamps and the time that they will be burned is a fair average for conditions prevailing on the average farm, then the following represents an electrical load for one day on that farm:

Estimate of daily lighting load:

	Lamps Number.	Watts.	Hours per day.	Total watt-hours.
Living room	2	40	3	240
Dining room	2	20	2	80
Kitchen	1	20	3	60
Bedrooms (3 bedrooms).	1	20	½	30
Barns	8	20	2	320
Other outbuildings	4	20	½	40
Miscellaneous, porch, yards, etc.	..	..	..	100
Total average lighting load per day	..	..	..	870

With this schedule before him the farmer is in a position to interpret his needs for lighting more intelligently.

In building or purchasing a home it is desirable to incorporate in its construction or furnishings all such features as will insure maximum comfort and convenience. Electricity aids materially in supplying these features, particularly if care and thought are given to laying out the system.

It is no doubt true that many builders of homes delay the wiring of their houses until after they are built. Probably this tendency is more pronounced in rural districts than in cities. This may be because they are not quite convinced that electrical devices will supply the comforts and conveniences attributed to them. Or, perhaps they may be under the impression that a haphazard system if wiring that can be installed cheaply with no provision for the future needs will be just as satisfactory. Sooner or later this will give reason for complaint. Especially will this be the case where electric lights and heating devices are used on the same outlets. To be obliged to unscrew a lamp from a socket, screw in a plug for a heating device, and when through using it, unscrew the plug and replace the lamp, will offset much of the convenience which the electric heating unit offers. Perhaps no better example could be mentioned than the necessity of using the baby milk warmer at night in a room equipped with but one electric light.

Where it is intended to use electricity for lighting and for various devices for heating and cooking, the arrangement of the electric circuits should be carefully considered.

The wiring of houses for electric heating devices can be classed under three general plans. They differ principally in cost of installation. The first plan is the most complete. It comprises separate heater circuits to the different rooms, all radiating from a single location and measured in another meter than that used for lighting. This system is the most expensive and is applicable principally to those houses for which electric current is purchased from a high-tension transmission line of central station company. The second plan combines the use of lighting circuits and a separately metered, heavier wired circuit from which current can be drawn for the operation of at least the larger cooking utensils. This system also generally presupposes the purchase of current, but is also applicable to such houses as may be supplied from farm hydro-electric plants. The third system is the simplest and comes nearest to being in almost universal favor. It makes use of lighting circuits provided with proper outlets at various points throughout the house. It is the only one which may be considered in connection with a low-voltage (32-volt) storage battery plant and also with many of the 110-volt outfits.

Switches.

A liberal use of switches in a home is recommended, as it invites economy by encouraging the putting out of lights when leaving a room. The flush type placed in metal cut-out boxes sunk in the wall are largely used. They are very satisfactory and should generally be located just inside of entrance doors. For large rooms it is well to have more than one switch and sometimes it is desirable to use a switch one turn of the handle of which lights one group of lights, the second an additional group without putting out the first group, and the third turn puts all out.

Hall Lights.

It is customary to arrange lights for halls and stairs so that they may be turned on or off from one or more switches, usually two, one on the first floor and one on the second floor. These switches are known as 3-way or 4-way, or 3-pole or 4-pole, switches. Thus a person on a lighted first floor wishing to go to a dark second floor is enabled to light the second floor light from the first floor, go upstairs and from there extinguish the first floor light.

Closet Lights.

A ceiling light placed in a closet is very desirable, especially if the light from a window does not enter it. Switches for closets are often set in the door joints and operated by the movement of the door. If, however, the door is to be left open for ventilation, wall switches are preferred, for otherwise it would be necessary to unscrew the lamp from its socket.

For a switch to operate a light which is not visible from the location of the switch, as is not infrequently the case of cellar lights controlled from the first floor, a pilot light switch that contains a small pilot light which burns when the switch is on, serves to economize current. This type of switch is to be recommended in connection with all heating or other appliances which are fixed in position and do not visibly indicate when current is on. Switches of this type are obtainable as combination units which may be placed together in the same will outlet and covered with a single plate.

Base and Wall Receptacles.

A liberal distribution of flush receptacles and plugs throughout a residence will be found handy for a great variety of purposes. When wiring is being done the installation of a few for which at the moment no use appears will cost but little more and the chances are that as the advantages of electricity become better known, they will be found very desirable. Such receptacles may be placed generally on or just above the baseboard and the plates may be painted to match the surroundings so that they will be inconspicuous. It is well to install two spare receptacles in each main room and hall.

The porch should have one or more outlets in the ceiling and, if a living porch is provided, receptacles should be placed in the side wall 12 to 15 inches above the floor (to prevent water splashing on them), to which may be connected a reading lamp, chafing dish, or such other useful electrical device as may be needed. The lights in the ceiling should be controlled by a switch just inside the door, or if it may be desirable to turn them on or off from the outside as well, a double switch (on inside and outside) can be used.

The use of heating devices on the table calls for floor outlets to avoid a wire dangling from the lighting fixture above. Floor boxes with cone-shaped tops projecting above the floor to prevent water from entering the box and to protect the wires are obtainable, or the cone tops can be removed and a flush top substituted.

Cellar Lighting.

Outlets in the cellar should be so located as to best illuminate laundry appurtenances, furnaces, and fuel storage bins, and pumps or other apparatus that might need attention. Small consumption lamps, 10 or 15 watt, usually are sufficient for general illumination in the cellar. For a work bench or other utility requiring better light, 40-watt lamps are better. Store rooms for vegetables and other edibles should be well lighted from the ceiling, with a controling switch at the door or a pendant switch at the lamp. At least one light in the cellar should be located to illuminate the stairway, and this light should be controlled from a switch at the head of the steps.

Room Lighting.

It is a decided mistake to attempt to limit outlets in residences to the fewest possible permissible with the original furniture layout. They should be planned with a view to any rearrangement of furnishings. It is always possible to cap outlets until needed. All portions of a room should be properly illuminated and the lighting layout should be studied with this in view.

A soft general illumination adapts itself well to halls, with the possible addition of a portable table or standard lamp.

The pantry should be well lighted from a high center outlet so that contents of dressers and cupboards can be seen distinctly. The outlet should be controlled by a switch at the door.

A ceiling outlet controlled from a switch at the door into the dining room is always recommended. If no other lights are provided there is annoyance from shadows at the stove, at the sink, or other points where one works. For this reason side outlets are advised, particularly at the sink and near the other most-used portion of the room.

As the laundry is usually finished in light color, comparatively little general illumnnation from ceiling fixtures is required. At the ironing board a drop light should be provided with a socket of the double outlet type, or provision be made for a separate outlet for connecting the electric iron.

For bathrooms of the size found in most houses, one droplight from the ceiling or a bracket with the lamp located in front of and slightly above the mirror is usually sufficient. When the room is larger than the average, the installation frequently includes a ceiling outlet with a side outlet placed on each side of the mirror. The ceiling outlet is usually controlled by a switch at the door, while the side outlets may have chain pull or key switches. The side fixtures at the mirror, if installed, should project 8 to 15 inches from the wall and be so placed as to light well each side of the face. Bathroom lights should never be so placed as to throw the shadow of anyone in the room on the window shade.

The general illumination of the sewing room may be from the ceiling, with one switch control, or, where the room is small, one light, either drop from ceiling or wall outlet, will be sufficient. Though not absolutely essential, side lights installed to brightly illuminate the sewing and cutting table and the location where the comfortable chair for hand sewing is usually placed, add conveniences not commonly met. A separate outlet for the pressing iron should not be overlooked, and the need of an electric fan in warm weather may call for another outlet, although in most cases it will be attached to the lighting socket.

Electric Cooking.

The use of electricity for general cooking purposes is really deserving of far more space than can be given in this short article in order to convey properly even a fairly accurate conception of its merits. Among its advantages, and they far outweigh the disadvantages, may be mentioned those that follow.

As compared to other methods of cooking, little heat is thrown into the room. This makes it strongly favored for hot weather, when the average kitchen is too hot to work in comfortably most of the time that the cooking is going on. Contrary to conditions existing in kitchens where fuel is consumed at the burners of the stove, no products of combustion pass into the air of a room, hence with electric cooking the air is decidedly better when the outside temperature requires that doors and windows be kept closed. The rate of cooking can be more definitely and quickly regulated. Electric cooking utensils are not covered with soot and therefore are easier to wash and clean. If a breeze is blowing through the kitchen on a summer day no attention need be paid to it, as there is no danger of explosion or other trouble due to the possible extinction of the flame. In fact, with electric cooking there is practically no such fire risk as there is with coal, gas, or gasoline. Some cooking can be done on the dining-room table,

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On Cultivating Alfalfa.

Judicious cultivation has been demonstrated to be the life of alfalfa fields under many conditions that exist in Kansas alfalfa sections. It is true that many old fields have maintained a condition of profitable productivity for an indefinite period without such help. Such fields have had the special advantages of ideal soil conditions, freedom from particularly noxious weeds and, consciously or otherwise, the owners have harvested hay at such times that crab grass and fox tail have been held in check. In a state with so many different growing conditions there are many alfalfa fields that may be benefited by thorough cultivation. Some of these may be noted as follows:

a. In central and western Kansas alfalfa fields, one of the worst pests is a perennial grass of the drop seed family (sporobolus sp). It produces an abundance of seed with a high germination and spreads rapidly. One western Kansas farmer reported having cleaned a fifty bushel wagon box full of this grass seed out of one alfalfa seed crop. The clean seed is amber color and weighs like sand. The leaves are very tough and cause considerable trouble in mowing. The only way to eradicate it is by thorough spring cultivation, going both ways if necessary in the thick clumps and stirring the ground three inches or more. This is usually done in early spring.

b. There are many fields now well set in alfalfa on which the soil forms a crust at a depth of one or two inches. If this crust is not broken up, lower yields result. Such a condition may be the result of evaporation of moisture from subirrigation, or may be caused by continued tramping of stock in pasture. Spring cultivation overcomes this condition.

c. Many alfalfa fields now approaching an age of fifteen or twenty years are being overrun by native grass unless they have been carefully cultivated every season. Where alfalfa is seeded on new land with the grass roots not thoroughly killed, cultivation is essential to the life of the stand. Many growers in western Kansas assert that for one or all of the three reasons mentioned they find it profitable to cultivate every year.

d. In eastern Kansas, where Kentucky blue grass thrives, alfalfa stands meet with severe competition from the blue grass. Cultivation in the spring will lengthen the life of alfalfa fields under such conditions. It will not completely eradicate blue grass, however, where it grows well and the stand will finally be plowed up at a comparatively short age.

e. In many places especially noxious weeds may render cultivation necessary on small areas. An example of this is the goose grass (Gallium aparine), often called stick tight or cling rascal. Cultivation in early spring will eradicate them and most similar weeds that are present only in the first crop of the season.

f. The universal crop of crab grass and fox tail that comes in alfalfa during late summer can be largely reduced by cultivation immediately after the first hay crop is removed. These two annual grasses do not sprout until the first hay is removed and the sun reaches the ground. In old thin stands there is nothing else that will reduce this grass crop. In good stands this grass can be largely kept out by cutting hay only when the crop is in full bloom or later.

The most important consideration in all cultivation is to use a tool that will injure as few plants as possible. Any tool that has a rounded shovel or cutting edge, and if possible that permits a little side play, is desirable. The solid disk and cutaway formerly used extensively have been shown by experience to cut many plants that a sliding tool will miss. An injured plant is apt to die. It is exposed to attacks of disease just as is an animal with the skin broken open. It is almost sure to have an infected wound unless properly treated. Any tool used to stir the soil in a field covered with a sowed crop is bound to do some injury. It is very doubtful if more than one cultivation per year will pay under any Kansas condition.—R. Kenney, Kansas State Agricultural College.

Is the Berkshire Breed Dying?

Not many years back there was much interest in the Berkshire hog. Farmers were found breeding them as extensively as other breeds at that time. Now there is a lack of interest shown by the breeders. There is a strong need for some personal effort on their part to put the Berkshire breed back where it belongs. There are many farmers who are interested in seeing the breed progress, but they are helpless without a central organization. What the Duroc Jersey association has done for the Duroc breed and the Poland China Association for that breed, could be repeated by a Berkshire association that would get down to business.

Mr. D. S. Davis of 25 South Grant street, Denver, Colo., is a breeder and is interested in the formation of an association in Colorado. Berkshire breeders are asked to take notice and to send their names to Mr. Davis if interested in such a move. This is an excellent opportunity for the breeders to promote interest in the breed and they should take advantage of it.—H. A. L.

Objections to Sunflowers.

We have noticed recently a number of articles in the farm papers favoring the use of sunflowers for silage. In view of our limited experience we are led to believe that the failures with sunflowers have not been reported to the same extent as successes. Doubtless many farmers will give sunflowers a trial as a result of what they have read in the press. We would like to see the matter subjected to further discussion in your paper.

Our own experience shows that sunflowers, on account of their stiff brittle stalks, are more difficult to handle than corn; that the heads lodge at the feeding rolls of the silage cutter; that a windstorm at the time the heads are well formed is very disastrous, in that it breaks the stalks and tangles the field into a discouraging mess; that sunflower silage is neither so palatable nor so valuable for milk production as corn silage. We have no figures on the relative yield per acre, but the sunflowers would have to yield vastly more to counterbalance the disadvantages mentioned. In our opinion, sunflowers should not be grown for silage in the corn belt.—T. E. Woodward, Maryland, in Hoard's Dairyman.

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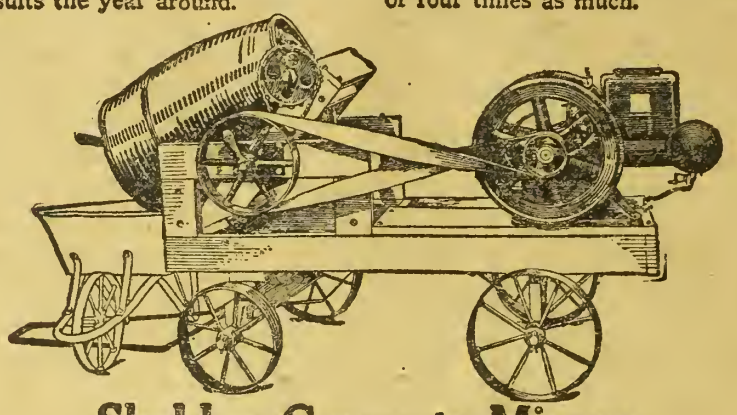

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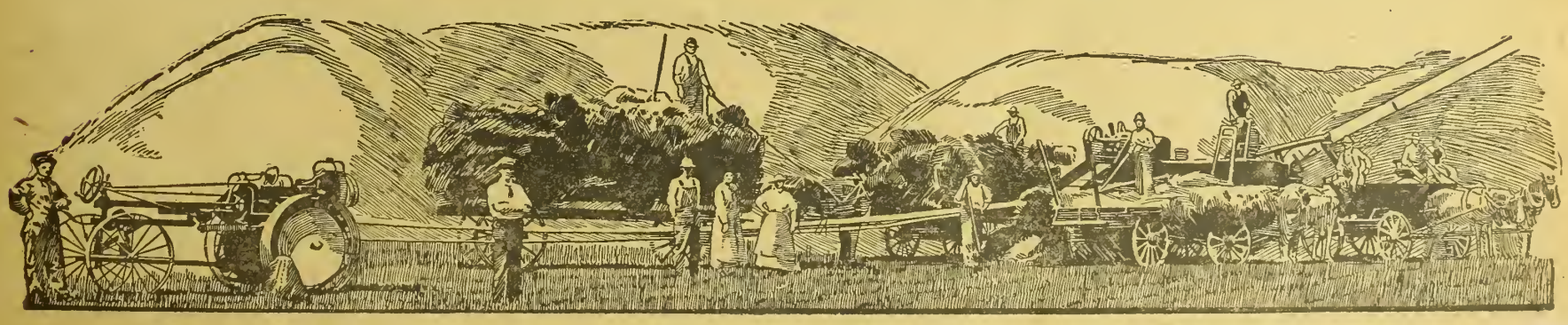

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The Sweet Ranch.

Farming is a business and business methods must be applied if it is to succeed in the larger sense. Any occupation engaged in for a livelihood or gain is a business, whether it be merchandising, or farming, but the English-speaking world has come to understand the word business as applying more specifically to buying and selling, and not to production. However, farming is not production alone; it must include buying and selling if the farmer would succeed. The new idea is to make it a business, give it competent management and see it through from seeding to selling.

On some farms the new idea is being carried out to the fullest extent. We have a remarkable example of this at Carbondale, Colo., on the Sweet ranch. This property has been known for many years as a place where agriculture was practiced as a science. The value of crop rotation, seed selection, pure strains, types and varieties; the matter of fertility through livestock and green manuring—all these things have been practiced at Carbondale and proved their value to the satisfaction of the owners. It has been a slow growth, a matter of progress through experimentation. The time has come for cashing in; for capping the climax of production successes with a sound business system.

When a large corporation wishes to expand any branch of its business it goes out into the market place of men and bids high for the best talent obtainable. So it was when the Sweet Ranch decided to expand. Mr. Lou D. Sweet, head of the corporation, wanted an expert to take charge of the cropping system and he selected Mr. H. H. Simpson, who as county agriculturist for Boulder county, Colo., made a record that has attracted attention nationally. Production of pedigreed seed for use of Boulder county farmers was one of the outstanding projects carried on under Mr. Simpson's direction. So successful has it been that the primary object of supplying Boulder county farms with pure seed is in prospect of being overshadowed by the business development in the sale of seed throughout the Rocky mountain region.

There is a sound business reason for selecting Mr. Simpson for the particular line which will be his to follow on this highly specialized farm.

The next move again illustrates the manner in which modern business methods are to be applied. This is the active personal connection with the ranch to be assumed in the near future by Stuart L. Sweet, son of Lou D. Sweet. The younger Sweet, like Mr. Simpson, is college trained and experienced. He has specialized in animal husbandry and is expert at judging cattle, horses and sheep. Topping this training he spent three years in the service of the United States Bureau of Markets, as chief of the Colorado office. He has been studying the farmer's marketing problems and assisting groups of farmers in direct marketing, where facilities offered by established agencies were either inadequate or unfair. He has been remarkably successful in the practical phases of this work.

Incidentally he has proved to be exceptionally qualified in office organization and business practice, to an extent that Denver University induced him to give lectures on business practice before the new School of Commerce.

He has resigned from the Bureau of Markets, and dropped other activities to devote all of his time to the business of farming. To the uninitiated this may appear to be a prosaic change. As a matter of fact, it is a step upward. It is a practical illustration of the fact that modern farming, on an extensive scale, demands the highest type of scientific training as well as unusual business ability and experience. Further progress of the Sweet Ranch will be observed with interest by agriculturists. The company is carrying out ideals and ideas, not experimentally, but practically. It is proving by money measurement the theories of the expert and doing it with experts at the helm.

✦ ✦ ✦

Regarding Beet Contracts.

Wallace's Farmer, quoted in the issue of May 15th in regard to experiences of the beet growers and the present price of sugar, and holding therein that the farmer who has signed beet contracts on a basis of $12 a ton is apparently donating $6 a ton to speculative profit over and above the ordinary manufacturing profit, apparently was not apprised of the nature of the contracts in force between the Great Western Sugar Company in Colorado and its farmer clients. On March 4, that company put forth a statement to the beet growers announcing its intention, in the event the crop of 1920-21 reaches or exceeds 5,500,000 bags, of making additional payments to growers on February 15 next if the average net seaboard, or basing price of beet sugar during the months of November and December, 1920, and January, 1921, exceeds $11 per hundred pounds. At that time the company proposes to make further compensation on all beets delivered during the season of an amount per ton of beets equivalent to the amount per hundred pounds of sugar which such average basing price exceeds the $11 basis made.

In other words, if the average basing price during the period mentioned should be $11.50, the extra payment per ton of beets would be 50 cents. If the average basing price should be $12 per hundred pounds, the additional payment for beets would be $1 per ton.

The company's officials here state that the total acreage contracted for this season very substantiallly exceeds the large acreage contracted for the 1919 growing season, which, under normal conditions, should yield not less than the number of bags specified in the relief provision referred to.

The other sugar companies of Colorado, it seems, have agreed to pay for the beets grown under their contract upon a sliding scale, which the Iowa publication states has its proper benefits.

It would seem, therefore, that no application properly can be made in the Colorado region at least, of the charges that farmers who have signed for beet growing this year have placed themselves beyond a position where they can participate in the high wholesale and retail markets prevailing.

The grower, of course, is building his hopes on the future of the 1920 crop. He is not participating in the profits from present speculative prices. The consumer is paying that profit, and Wallace's Farmer is correct in the statement that prices did not begin to soar until beet acreage was safely contracted. The grower will await the outcome of the situation with a great deal of interest.

✦ ✦ ✦

Slurring the Farmer.

Asa F. Cogswell, the master of Arobine Ranch in El Paso county, is a professional man turned farmer. He succeeded as a dentist, but at 57 years of age he changed his profession and now he is a successful, prosperous and contented farmer. He was elected to membership of the Rotary Club at Colorado Springs recently, having been chosen because he was a farmer. In speaking on this subject he voiced some suggestions which are worth passing along, just as they appeared in an account of his address given in the El Paso County Democrat:

It is a notorious fact, gentlemen, that some of the very best business men have fallen into the habit of casting insinuations at the farmer. To be sure, they are not always intended to be slurs, but they have their bad effect, just the same.

Even out on the golf links, if a fellow makes a dub shot, he swears a little to himself and says, "That was a regular farmer play."

If some ill-mannered person sits at a banquet table and eats with his knife or sips his soup with his cut-out open, they say, "He eats like a farmer."

If a business man fails to keep his shoes shined, or goes two days without a shave, they say, "He looks like a farmer."

How many times have you, my Rotarian friends, unthinkingly made those remarks about the people who are working from sun-up to sun-down, 365 days in the year, to make the earth bring forth her fruits?

Just what opinion would you have of the head of Colorado College, or the pastor of the Congregational church, or of any other educated and cultured gentleman, if in his general conversation he referred to the farmer as "hayseed," or the butcher as "sausage," or the plumber as "gaspipe"; or if he called the baker "doughnuts," or the physician "physic," or the druggist "pills"?

Only a few weeks ago I proffered my hand to a Rotarian and said, "I've wanted to meet you and get in closer touch with you. I'm a farmer. Call me Asa." And he answered, "You don't look like a farmer to me. You look too intelligent."

There isn't a man in this room, who, dressed as he is today, could follow the farmer through his daily routine of work for one week, without coming back to the city looking decidedly the worse for wear.

I believe, men, that the Colorado Springs Rotary club could do no greater service to the business world, than to launch a vigorous campaign against that sort of ridicule, and in bringing this thought to you, I hope I shall have added to the dignity of my classification—farmer.

✦ ✦ ✦

"Thus Far, But No Farther."

ALFRED M. WILSON.

I should take to the tall timber if I had to live in a community where everybody thought the same thing, said the same thing, wore the same style of overalls, ate the same kind of food, and drank the same kind of moonshine, or under a government where the price of everything I had to sell and everything I had to buy was fixed by some bureaucratic official. I have, as yet, too keen a sense of independence and self-reliance to submit tamely to such a governmental regime. In fact, I would rather be "stung" occasionally than to be reduced to a mere cog in a huge piece of machinery run by the government. That is paternalism with a vengeance destructive alike of initiative and enterprise; and yet there are so-called farm leaders of prominence, who should better understand the mettle and temper of the American farmer, who are nevertheless advocating that very thing.

I can see no objection to the passing, by the Congress of the United States, of a law requiring the manufacturer to place on every manufactured article that is to enter into interstate commerce the original cost price of production and every one through whose hands the article has passed in its long and devious journey to the ultimate user, the cost price of said article to him. The enforcement of such a law would tend to cut out the artificial restraints of trade by making it overhazardous to hold goods for speculative purposes and hence to check profiteering, a big factor in the high cost of living. If such a law were on the statute books, the people would not have felt called upon to wear overalls as a spectacular protest against the high cost of clothing; for with such a law enforced the prices of things which people must have to enable them to live decently and to dress decently would not have mounted up to their present dizzy heights.

A few days ago sugar jumped over night, as it were, five dollars per hundred. A certain retailer in a certain very small village had in stock at the time thirty sacks of sugar. He immediately advanced the price of sugar to his customers five dollars per hundred pound sack. If, however, such a law as I have indicated had been in operation, he would have thought twice before doing so. Since the original cost price would under those circumstances be known to his customers, he would hesitate for a long time to advance the price to them, thereby enabling him to make, in addition to the legitimate profit which he had been making on the original cost price, an additional profit of five dollars per sack. That, as the boys would say, would be pure velvet; but the public would not stand for such a transaction and he would understand it and so would go slow.

The farmers would not, I believe, object to a law embodying the above principle, which should apply to farm products; but the farmers of this country, I am confident, are not ready now nor will they ever be ready, to go beyond that in the way of price-fixing.

The Branding Iron

Alvin T. Steinel, editor of Western Farm Life, dropped in the other day, put his feet up on our desk, took a chew—of gum—and we had a nice little friendly chat in which we did not pan anybody, that is, not much. Steinel came up to lecture to our class in journalistic writing, and he did such a good job of it that we're ready to resign in his favor any time he'll tackle it permanently, provided, of course, he agrees to let us continue to draw the salary.—C. A. C. News Notes.

Good heavens, Crosman, they don't pay you for that, do they?

* * *

Farmer Doolittle of township 23 writes us that he likes the "idee" of sunflowers for silage. He says it will make people who pass his place next summer think he has gone to work, and he hasn't turned a hand on the old field of weeds. Doolittle is the same fellow who wanted to interest us in organizing a Society for the Prevention of Cruelty to Russian Thistles. He says anything that will flourish like the Russian thistle ought to be encouraged.

* * *

Jefferson county (Idaho) farmers have purchased about 200 tons of hay co-operatively this spring, at a saving of $10 to $18 a ton. It looks like good business for the farmers to deal direct in a commodity such as hay. The farm bureaus are bringing farm buyer and seller together.

* * *

The Branding Iron editor has been asked to join the National Personal Liberty League, and fight for his constitutional rights, which, he has been advised, have been greatly curtailed by minority legislation. We feel that the League's press agent is a little bit vague and indefinite. If he wants results why don't he send a sample bottle "under separate cover" to stimulate the editor's fighting spirit? A fellow can't fight for his constitutional rights without a little invigorator.

* * *

Congress is fiddling around trying to forget the Capper-Hersman bill which would remove the threat of prosecution from farmers' co-operative marketing associations. The Larimer County Farm Bureau recently wired to the Washington representative of the National Farm Bureau Federation, urging prompt investigation of reasons for smothering the bill and demanding its passage. That's the style, men; put a little pep into your protests and make Congress sit up and take notice.

* * *

Elizabeth was going to bed and when she had carefully and devoutly said her prayers, her mother heard her add, with considerable feeling:

"And, Oh! Please Lord, make Newark the capital of New Jersey."

"Why, Elizabeth?" exclaimed her mother, "what made you say that, dear?"

"'Cause I wrote it that way in the examination today," earnestly replied Elizabeth.—Exchange.

* * *

"Say, Cy, I jest found out what a rube is."

"Thet so, Hiram? What is it?"

"Why, it's one o' them 41 hour, $95 a week labor guys that thinks a farmer is goin' to sell him food cheap."—New York World.

Booming Business.

The general delivery window of the postoffice in a southern town. A typical negro "mammy" approaches the window, and the following conversation ensues between the clerk and the mammy:

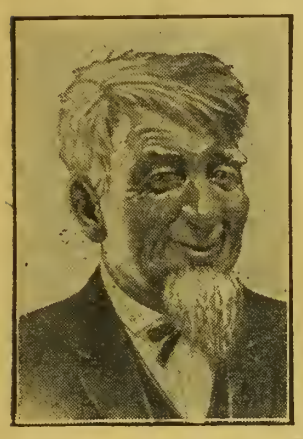
"Mawnin', suh! Is you got any mail for 'Riah Smith?"

"No—no mail for you."

"Yassah. You see, I waren't 'specting much. I lives down at White Hill, and I'se vis'tin' mah daughter. Jes' thought I'd patronize de office whilst I was here."—Life.

Comment by Farmer Putnam

THE MISSOURIAN MAKES A FEW REMARKS ON THE SUBJECT OF BLIZZARD STOCK LOSSES



I SEEN where one of them lady reformers from the east was out in Colorado a few weeks ago lecturin' on the cruelty of lettin' our stock die in blizzards. She was all broke up about it and wants the government to do somethin' to stop it. Well, it's just too bad about us hard-hearted old ranchers; we ought to all be put in jail fur puttin' our money in cattle and then lettin' 'em starve. I reckon the insane asylum would be better, because any rancher that does what this lady claims had ought to have his head examined. I reckon this lady is one of the same kind that kicks about the price of meat. They is a turrible lot she could learn about the cattle business if she staid out on a ranch fur a few months. I just want you folks to read what she sez:

"The ranchers say they want no interference in their so-called 'business methods,' and yet one rancher alone lost $300,000 worth of cattle this year because his greed for gold led him to refuse to buy $40,000 worth of hay—enough to feed his stock through the winter. Appearances and government figures certainly seems to indicate that interference of some sort is demanded here. From a humanitarian standpoint think of the gaunt creatures, staggering through swirls of snow, parched for thirst and starving to death. You can almost see them stumble and fall into a heap of hide and bones too poor for even the buzzards to touch."

Now ain't it awful Mabel! Here we are tryin' our level best to make a livin' with a small bunch of stock. Some of us has got milk stock—them thar McCampbell strain of Shorthorns; some has got beef stuff, but nearly all of us is just a pluggin' along and payin' our bills and sendin' the children to school or college. Now along comes a hot dry summer, paster stops early, hay crop is cut short and all of a suddent comes a blizzard in October when we ought to be a-havin' fine weather, and we git snowed in. Then when we're expectin' six weeks more of fine fall weather we git jist five more storms like the fust one. This takes us up to Christmas and now what should we do? Rush the cattle to market when they ain't fit fur it? Well, some of us cain't drive out because the snow's here; the rest don't want to because the cattle represents all our capital and we don't feel like donatin' it to Swift and Armour, because them packers is by no means poor.

So we hang on and feed just enough hay to keep 'em goin'. By and by we see signs of spring. The snow comes and wets up the grass and it begins to look kind-a fresh. Hungry cattle ain't so pertickular about the color; they'll eat anything that they kin pick up and so we turn out on pasture.

Now what happens? It's April and by rights it ought to be spring, but all of a suddent comes a big blizzard. We set by the stove lookin' out and say to the wife:

"Gosh what a blow; I reckon we'll git some moister this time. It sure looks good. Maybe I better saddle up and drive in the stock?"

'No," she sez, ..April's half gone; it cain't last long; besides you cain't face that blizzard now."

Well I go out and take a look. I kin hardly git half way to the corral. The wind howls like fury and the snow is pilin' up in drifts, but I keep thinkin' it's not so very cold; the cattle will git through all right. So I turn in fur the night. Sunday comes and I look out and wonder why it's so dark in the house. Well the winders is buried in drifts. I cain't see outside, but I kin hear the wind howl. I try to open the kitchen door. Bluey! The snow comes whirlin' in like a cyclone. I try to go outside, but it blows me over. I cain't face it. My, I wisht that downeast lady could a seen our April blizzard! I set thar all mornin' frettin' till about noon I just tell Josephine I've got to git to the corral, so I take a spade and try to break a path, but all I kin do is git a place clear on the steps. Outside it's like a whirlin' hurrycane on the sea with snow instead of waves. I finally git down to the corral and feed the hosses and the two old cows we keep fur milk. We call 'em the duel purpose twins—one is a Holstein and she gives milk; the other is a common red cow; we're holdin' her fur beef. I tried to git them two characters in one critter, but I allus found that the high milker was light in beef and the low set, thick bodied beef type wouldn't give down much fluid. I guess it's because I wasn't no expert. Them experts kin make cows do anything. Read the records if you don't believe it.

But I'm gittin' offen my subject. After I fed the stuff and watered it I saddled up Nigger and sez to him: "Nig, old boy, you're goin' to help me find a bunch of cattle. We won't know what to do when we find 'em, because they cain't come through this snow, but mebbe we kin git 'em to one of the stacks in the lower end of the paster."

Well, I got up in the saddle and Nig whinnied and sniffed the snow and wanted to start off right brave, but what a job for the poor hoss! We didn't git more'n a rod or two down the paster when all goin' was stopped and I turned Nig back toward the corral. I wouldn't a got back alive if I'd tried to go out of sight of the barns. Poor Nig was covered with foam and it froze on him, so I had to git him under blankets quick. When I got in the house I was all in. I hated to give up, but it was a question of me riskin' my life and Josephine sez: "Tom, I think you'd better stay in. What's a caff or two less compared to losin' Nig. I'd hate to have that hoss die."

"How about me?"

"Oh, don't worry, nuthin'll hurt you. Besides you're insured and the hoss would be a dead loss."

Well another night went by and the next day the sun come out and it thawed a little. The drifts was six to ten feet deep and all I could do was to clear up a little around the house and make a path to the barn. It wasn't till the fourth day that I got far out in the paster and found the stock—that is most of it, under the sheds where we had plenty of hay. I counted forty-two head, about ten missin'. The rest of the story ain't long. I was busy skinnin' and hangin' up hides fur a day or two. Total loss from the storm about $800.

Of course, I done it deliberately. All of us did, didn't we? We like it when our stock dies. We love to throw our money away.

Why don't we keep less head and raise and buy more feed fur 'em? Let 'em eat their heads off? Pay out all the profit fur feed and donate the cattle to the packers? Is that what them reformers wants us to do? Why don't we provide more shelter in the pasters? Don't you know that dozens of head died in that storm under the sheds? The snow blew in on 'em and buried 'em up ag'in the fences.

In one place over a hundred head runnin' along the railroad track up above the prairie was hit by a freight train and it plowed through 'em and slaughtered most of 'em. The engineer couldn't see ten feet ahead of his cab that day. Nobody could blame him.

Let's see what does this here lady want the government to do about it? Appoint a lot of inspectors that'll order us to feed our cattle, and if we don't do it they will buy feed and charge it to us. More soft snaps fur somebody. Them inspectors would be settin' near a stove somewhere's durin' a storm and after it was over they'd be snoopin' around countin' hides and tryin' to have us arrested. We got enough inspectors a'ready. We're the most regulated industry in the U. S. today. The Record-Stockman gits out a Green Book every year that's got a thousand laws in it fur the government and inspection of us cattle raisers, and they're mostly good laws made fur us and by us fur our own protection. And when us stockmen wants one law to regulate the packers they tell us, "You'll kill the packin' industry; private business should not be interfered with."

On top of our marketing troubles, our high feed costs, our blizzard and drouth losses, comes a soft hearted lady with tears in her eyes beggin' the club wimmin' of the cities to demand that the government stop it! I don't know as I kin blame the lady much; somebody sent fur her, or she wouldn't a come out here just after the big storm when she could point her finger at us and say "see how cruel them ranchers is!" Folks I got to ask your pardon fur not writin' a funny story this time. It's hard to make a joke about a funeral, and that's the way we feel after skinnin' dead cattle.

Thos Jefferson Putnam

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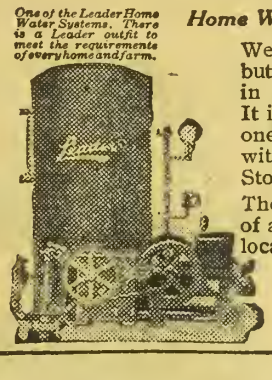

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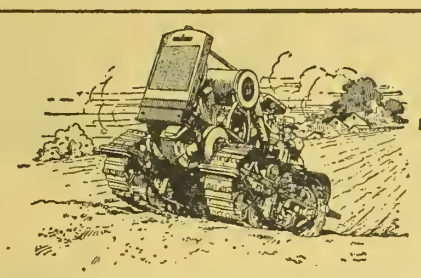

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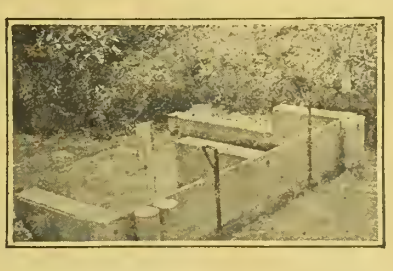

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Oregon has eight cow-testing associations. About 1,800 cows are tested each month in these associations.

Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and through the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Fall Seeding of Oats.

Would like to know if there is such a thing as fall or winter oats?—G. R. Nebraska.

Fall seeding of oats has been tried in some sections, but has not been found very successful. We do not know of any variety of fall or winter oats; but these trials have usually been made with spring varieties. The seed does not usually germinate in the fall, but begins growth with the first warm days of spring. The only advantage we have heard put forth for this practice is that fall seeding lessens the spring rush of work and gives the crop an early start. However, there are disadvantages such as germination of the seed in the fall and subsequent winter killing, also freezing after the seed germinates in spring, etc. We hardly think that the practice can be called successful.

If you will write to the Bureau of Plant Industry, U. S. Department of Agriculture, at Washington, D. C., they will no doubt be able to tell you whether any successful variety of fall or winter oats has been developed in any part of the country. Seed is not on the market in the west.

Proso On the Dry Lands.

Can you give me some information regarding proso for the dry farm?—F. W., Pueblo county, Colorado.

Proso or broomcorn millet is more of a grain millet than the common variety. It does fairly well under dry farming conditions, but is not considered nearly as good a feed as, for instance, barley or some of the other small grains. Tests made at the South Dakota experiment station showed that it took about 8 per cent more millet than barley to produce a pound of gain, and that it was about 16 per cent less efficient than corn as a hog feed. The meat produced by millet contains a greater percentage of lean and makes a softer fat than other grains. It can be fed whole to stock on account of its large seed, which is not the case with the common millet. It is, however, usually ground or crushed before feeding, and it is a good practice to mix it with wheat bran or feed it with cottonseed meal or linseed cake, which are high in protein and fat. It is excellent for chicken feed. It is not extensively grown on the dry lands but is a fairly satisfactory crop.

Signs of Heat in Cows.

Ans. to F. A. R., New Mexico.

Some cows show very slight signs of heat and it is often very difficult to detect. Possibly this is the case with your cows and the period has therefore passed your observation. Succulent feed, either silage or grass, has a stimulating effect and if your feeding has been dry, try a change to succulence. We hardly think the change of altitude woud affect them unfavorably. It might be a good idea to put your range bull in with them and watch them closely. If there are still no evidences of heat then it would be well to call a veterinarian.

Udder May Be Affected.

Please tell me what is the matter with my cow. Her milk has a sour taste and there is a yellow substance gathers on the separator disks. She seems to be all right in every other way; gives six gallons of milk when fresh.—B. A. P., Nebraska.

Certain feeds often cause undesirable flavors to milk; such feeds as cabbage, kale, turnips, etc. It may be that the udder is diseased, which may explain the collection of the yellow substance on your separator disks. It would be wise to have a veterinarian examine her carefully unless you find the cause due to the feed.—H. A. L.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Calf Necrobacillosis.

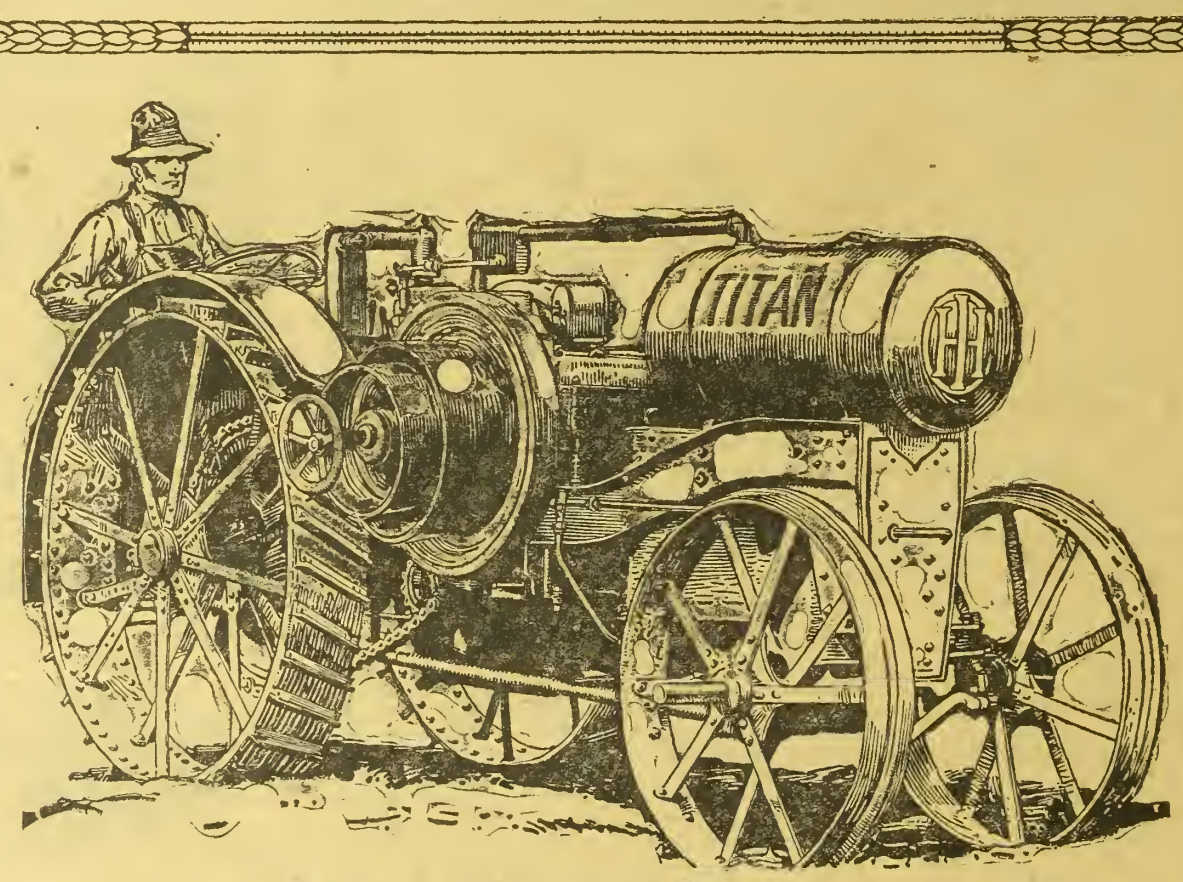
Please give me a diagnosis and treatment for a calf disease. At first a small lump will appear on the upper jaw and on the outside. The membrane on the inside of the cheek appears inflamed at first. Then in a few days small white spots appear. Gradually these white spots fester and break. At the same time the outside lump continues to grow and sometimes they multiply. In one case there were seven different bunches, hard and feverish, developing back of the ears, under the lower jaw, swelling the throat. When lanced these tumors or lumps only contained a white, thick, rubbery substance, and could only be removed by cutting. The odor, while offensive, was not like a virus or pus and at no time did they run. From the time these lumps first appeared until calf died was about 30 days. For the first two weeks the calf ate well and did not appear to have any pain. During the advanced stage the head was four times normal size, appetite lost, dullness, more or less fever. Calf was about four weeks old when first ailment appeared. Was being fed half whole milk, half separated, about six pounds at a feed, twice a day. Had access to green cut barley hay that had no beards.—R. S. Routt county, Colo.

You have well described a disease that is verey common in Colorado. Scarcely a day passes without one or more letters concerning it. The disease is technically known as necrobacillosis. It is caused by a specific germ known as Bacillus Necrophorus. The disease appears in many different forms, such as: Contagious foot-rot, in cattle, sheep, and to a certain extent in other animals. "lip and leg ulceration" in sheep; "bull-nose" and "sore mouth" in pigs; necrotic enteritis, mostly in pigs; calf diphtheria. It appears in many forms that can't be classified, such as in the fetlock region of horses, the udders of cows and sows, folds of the hock joint, prepuce, etc. The specific germ is commonly known as the necrosis bacillus because it produces a chronic condition of tissue destruction with very little formation of pus. Just now the disease is causing heavy losses in pigs, from three to six months old, and in calves from necrotic stomatitis and diphtheria. There is no relation between this disease in calves and diphtheria in the human. Calves will at first show apathy, diminished appetite and slight fever. In a day or two there will be removed leaves an intensely reddened mucous membrane of the mouth, especially on the inner surface of the lower lip, of the dental pad of the upper jaw and tip of the tongue, necrotic patches will appear which vary in size from a dime to a dollar. They are covered with a grayish croupous deposit which when removed leaves an intensely reddened surface and ofttimes deep ulcers with dirty grayish white smeary deposits. Simultaneously with these changes the lips, the nostrils, and region of the cheeks may show painful swellings. This is what is commonly known as necrotic stomatitis. Diphtheria in calves represents the same phenomena in the throat, with swelling and difficulty of swallowing. The infectious material is swallowed with the result that the stomach and intestines become involved. Calf diphtheria is very fatal and the important thing is to prevent it from spreading. To disregard this factor and at the same time spend money and effort to save the sick calves is folly. No vaccine or other biologic has been devised to combat this disease. The mouth and throat of calves should be examined carefully and healthy calves should be immediately removed to clean quarters. The mouth and throat of exposed calves should be disinfected with, say, 3 per cent boracic acid solution, twice a day. This solution is cheap and can be used freely. In case some of the solution passes into the stomach it will do no harm. Diseased calves should be treated by a veterinarian if one is available. The mouth cavity should be disinfected several times daily. The patches of necrosis may be scraped off or curetted away insofar as this is feasible. After the sores are irrigated it is recommended that they be covered with a paste made of one part of salicylic acid and ten parts glycerin. It may be necessary to touch the ulcers with lunar caustic. The calf may be allowed to suck its mother, or if a weanling, should be fed whole milk. Few of these cases can be saved, but the disease may be checked by isolation of healthy calves, disinfection, and treatment otherwise as indicated above. —G. H. G.

Warts on the Udder.

J. H., Idaho county, Idaho.

Assuming that the "bumps" are warts, the following treatment will probably be effective: Warts with a restricted neck, or that grow out with a small base, may well be treated by ligation. A strong thread should be used and drawn very tight. The wart will slough within a week or two, without complications. The other warts should be treated with oil (preferably castor oil) twice a day until they disappear. —G. H. G.



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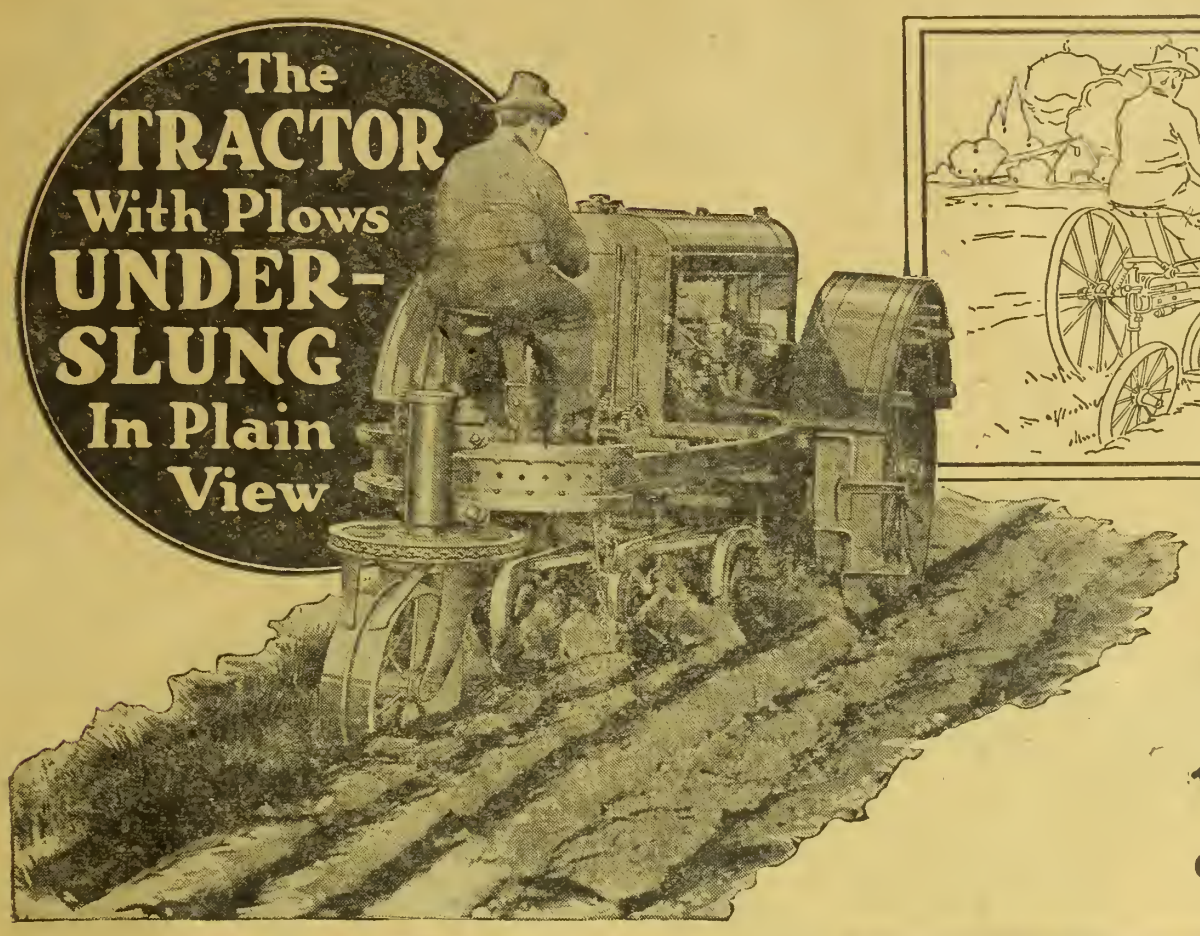

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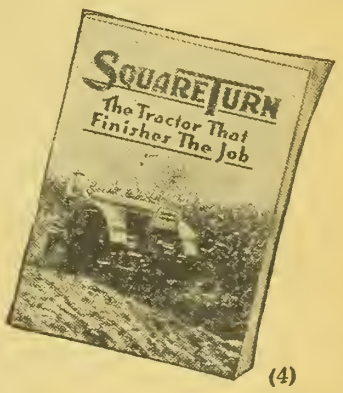

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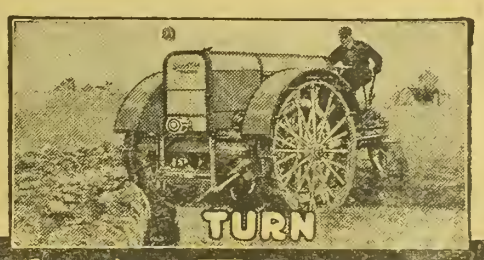

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Clark's Travel Letter.

Thos. Jefferson Putnam, Salem, Colo.:

Dear Tom—Since talking with you at the Holly dairy show I have learned more about the Japanese question in the Arkansas valley. At Rocky Ford I learned of some real estate dealers (white men), who are selling land to eastern parties with a guaranteed percentage annual income. You see some of this land is leased to Japs for a term of years at a very high rent, subject to sale, and it is being sold to eastern people unacquainted with the situation and who buy on an income and investment basis. They do not intend to move to the Arkansas valley and care only for returns. How general this practice is I can not say, but it doesn't look well for the white man. Indignation meetings are being held, but little good seems to come from them and I firmly believe another serious condition, similar to the one in California, is now in the making. I have made special investigation and I find that the Jap is very sharp and shrewd and knows that he has the white man bested. Unless the white man wakes up he will be compelled to leave that part of the Arkansas valley in a few years. Where the Japs are few in number they make a very favorable impression with the white man, as they are good workers and it is supposed that in order to win friends in the coming legislatures (for the question must come up in those bodies soon), a few Japs are being sent into Boulder, Larimer, Weld and other counties. Bankers, merchants and other business men, who a few months ago supported the Jap, are beginning to see the seriousness of the situation and are beginning to co-operate with the few who are aware of it. The Japs have been trying to get options on certain lines of business and are contemplating starting a bank. When they do this the white merchant and banker will not get a cent of the Jap business and as the Jap population increases, the white business man will be forced out and will have to quit. The merchant, who is now supporting the Jap movement, is killing the goose that lays the golden egg.

Well, Tom, while down in the Arkansas valley I looked into the question of permanent pastures and have come to think that failure is due to wrong varieties of grass, lack of good cultural methods and sufficient irrigation. The American Beet Sugar Company has several good permanent pastures and the stand is exceptionally good wherever there is a low spot in the field and lots of moisture. S. V. Slater, southeast of Rocky Ford, has a pasture of Kentucky blue grass that is 13 years old. One year, by supplementing it with a little alfalfa hay, he kept eight head of cattle on it. It now keeps about five head of dairy cows, and Mr. Slater says it is the most profitable piece of land on the farm. However, though Tom, you must remember that it is irrigated regularly every two weeks, or whenever in need of water.

Years ago I conducted an experiment with dairy cows on irrigated pastures and found that an acre would produce 256 pounds of butter fat. The cows were just ordinary good cows that can be found in almost any community and are within the reach of any farmer.

Last year butterfat in Colorado averaged 50 cents a pound and if you will figure a little you will find that good irrigated pastures will give as profitable returns as any crop a farmer can grow. I think farmers get tired of hand feeding cows the year round, and a pasture relieves the monotony of the work, gives the farmer a little change during the sumer months and whets his appetite for more and better dairying. I think also that the cattle are benefited by a pasture. It is natural, they crave it and they will do better. A good practice is to keep the cows up during hot summer days in a shady place free of flies, feed a little silage and alfalfa and turn them to pasture at night. By this method not much pasture is required. It can be well cared for and it will give wonderful results.

As to varieties of grass for irrigated pastures, as near as I know now, the following are proving quite successful: Kentucky blue grass, brome grass, meadow fescue, perennial rye grass, tall meadow oat grass and orchard grass. I think some yellow sweet clover should be used in all cases and in high, cool, moist places timothy, red top and alsike clover. I will be able to give more information next year, because trials in making pasture are being carried on at La Junta by Peter Kindsvater and the milk condensery.

While at Rocky Ford I called on Mr. Sherwood, president of the Farm Bureau, who has been ill for some time. He is feeling better now, growing stronger and I am sure will speedily recover. Mr. Sherwood has always been on the right side of the fence in his methods of living and has a great reserve of strength and for that reason I am sure he will be out before very long. He has certainly been missed by the people, not only his personality but his good influence. I tell you Tom, we need more such farmers; they leaven the whole lump as sure as you live.

In coming home I had a very interesting visit on the train with an old farmer, who was returning to Missouri for a short visit. Everywhere I go I find people from Missouri. They seem to be a joke with lots of people but I take them seriously. I don't see as the state where a person was born has anything to do with him being good, bad or indifferent. The James and Younger brothers were from Missouri and they came to the town where I was born, robbed the bank and killed the cashier and for a long time I had a bad opinion of people from Missouri, but my first lady friend was born in Missouri and a better girl never lived, and since then I have the highest regard for people from Missouri. If a person will openly admit that he is from Missouri, I respect him, but when he says that he is "from near Kansas City," I think little of him. The fact is, Tom, that the best farmer I ever knew was from Missouri.

This old gentleman I met on the train thinks that the high cost of living is due to pleasure and people retiring from the farm. His theory is, that people are taken from the production of essential things and employed in the manufacture of things that are used entirely for pleasure purposes. He quoted figures in the millions to prove his point and I think he is right. Pleasure cars are doing more to keep up the high cost of living than all other factors combined, according to his way of looking at it. Millions of people are employed in their manufacture and millions of people are wasting their time and money in using them. The picture show came in for a hard scoring and in that he was exactly right. As I see it the average picture show is useless, a time waster, and can be profitably dispensed with. It goes as far as it can toward indecency and gives nothing in return for the time and money spent. The old gentleman's views on retired farmers were very interesting. As near as he can estimate about 3 or 4 per cent of the population of country towns is retired farmers. He frankly calls them "lazy farmers," but in this he is not entirely correct. It is true probably of some of them, but not all. He said they were retiring at the age of 40 years, in the best part of their life, and come to think the matter over and apply it in my home town here, it seems true. If true this town has 600 capitalized, experienced, well equipped farmers in idleness, and the number throughout the state and nation is enormous. It is certainly a factor to be reckoned with, but these people have a right to retire if they desire; it is one of the privileges of a democracy, but probably not best for the country. I occasionally go down town and take pleasure in seeing these people standing on the street corners and while they have a few new ideas, most of them have served well and if they can afford a life of leisure let them have it, although many of them would be happier, more useful and live longer out on the farm.

R. W. CLARK.

Milking Shorthorns Sell High.

Two thousand dollars was paid by O. E. Mason of Central Point, Ore., for the highest priced Milking Shorthorn sold at Thomas Harrison's sale at Santa Rosa, Calif., May 5. Oakleigh Stock Farm, Medford, Ore., took the next highest at $1,750. Six cattle sold for $1,000 or better. The average on the 42 cattle was $592, the 37 females bringing $590 average, and the five bulls bringing $617 average.

The cattle sold to 15 purchasers in California and Oregon, and to one purchaser from Idaho and one from Ohio. C. H. Hinman of Bonvue Farm, Golden, Colo., represented the Milking Shorthorn Society at the sale, and reports that this first sale of Milking Shorthorns on the Pacific Coast was a good sale at good values. Thomas Harrison was an employe of James J. Hill, founder of the Milking Shorthorn Society, at his North Oaks Farm, near St. Paul, when Mr. Hill made his importation of Milking Shorthorns from England, and later, before starting his herd at Santa Rosa, was employed on the Jack London Ranch in Sonoma county.—Roy A. Cook, Secretary Milking Shorthorn Society.

The Western Kansas News after doing a little investigating of its own says that the whale that swallowed Jonah was the original profiteer betcause he grabbed all the prophet in sight.

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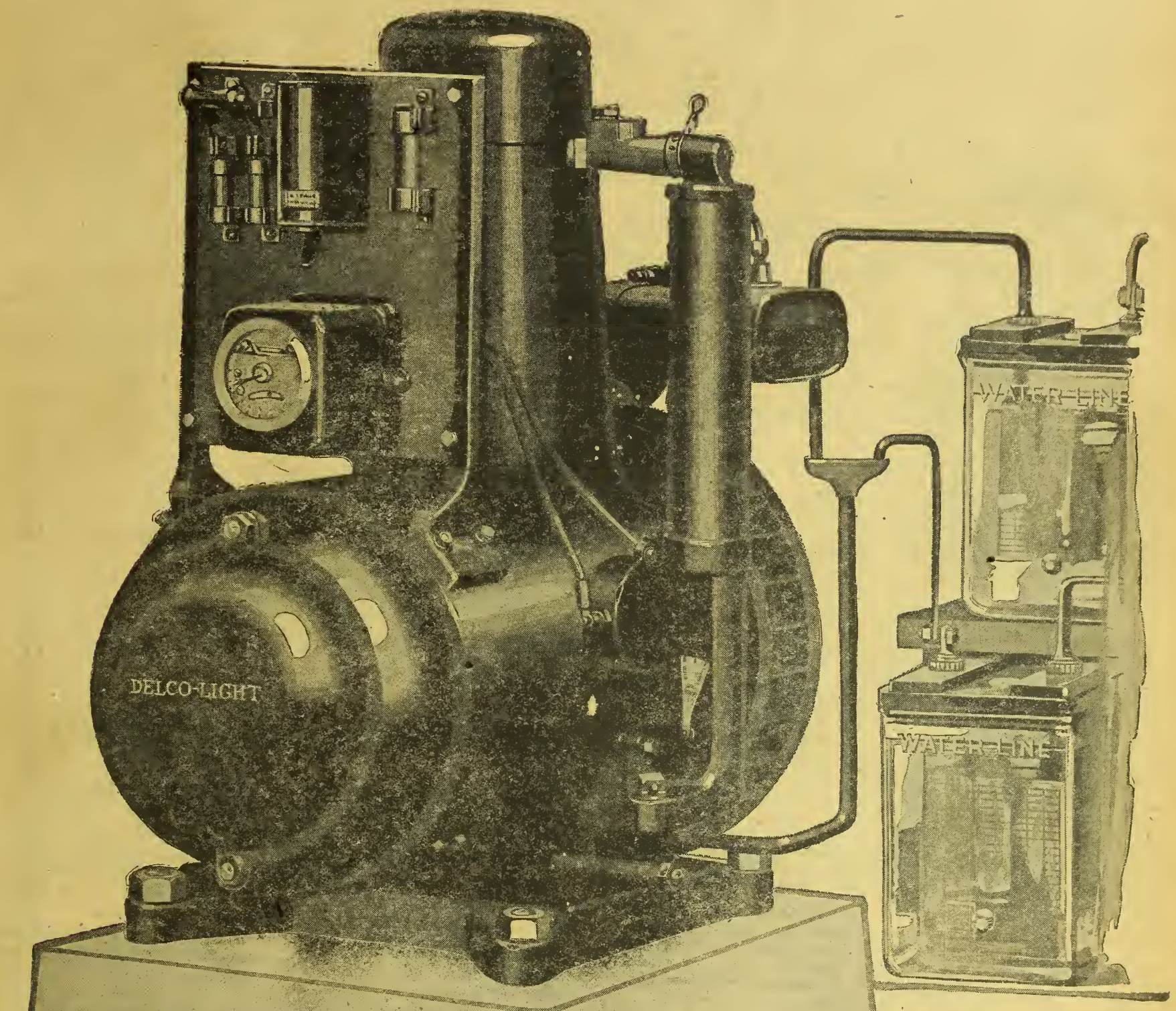

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Colorado State Farm Bureau News

Matter appearing in this department relates to the activities of the State and National Farm Bureaus, including official communications from the Colorado State organization and general reports, calculated to keep farmers informed regarding progress of this great educational movement.

Vice President Lamb.

Mr. F. R. Lamb, vice president of the Colorado State Farm Bureau, is another of the active farmers at the head of the state organization. At the present time he is acting as county agent for Fremont county, taking the place of Mr. Ralph R. Jeffries, who resigned several months ago to accept a position with the Michigan Agricultural College.

Mr. Lamb was born and raised on a farm in Fremont county, taught country school, attended high school and

F. R. Lamb, Vice President Colorado State Farm Bureau.

finally attended the Agricultural College at Fort Collins. He spent several years in the service of the engineering department of the Denver & Rio Grande railroad, with the surveyors, and also put in two years of surveying and mining in Nevada. From 1908 to 1918 he owned and operated a 420-acre livestock farm in Fremont county, handling about 200 head of cattle on the open range. There are three silos on the ranch and it has always been operated with up-to-date machinery, including tractor and threshing machine. Mr. Lamb disposed of his ranch in 1918 preparatory to enlisting in the army and since then has been living in Canon City, in order to keep his children in the city schools.

At the present time he is working on an irrigation project in the Wet Mountain valley, which he expects to complete some time this year. He has been county crop reporter for several years; president of the Fremont county Farm Bureau, and vice president of the state Farm Bureau since its organization. As above stated, in addition to his other duties lately he has been holding down the job of county agent while a successor to Mr. Jeffries is being searched for.

Mr. Lamb has been actively identified with every forward looking movement in Colorado agriculture for years, and when the local farm bureau plan finally developed into the state and later into the national organization, he found this to be only the natural result of a desire on the part of the farmers all over America to bind themselves together in a strong way for the improvement of their calling. He was one of the Colorado delegates to the National Federation meeting and took an active part in its deliberations.

They're Leaving the Farms.

Farm residents moving into cities represent perhaps the chief reason for scarcity of city homes and high urban rents, the surveys of agricultural conditions in Michigan just completed by the Michigan State Farm Bureau and the Michigan office of the U. S. Bureau of Crop Estimates agree. These figures show that there are approximately enough vacant farm houses in Michigan this year to shelter the 150,000 odd people of Grand Rapids, the second largest city of the state.

The farm bureau survey indicated that there are 11,537 idle farms in Michigan this year and the federal survey reveals a total of 30,307 vacant farm houses in the state.

It is the counties contiguous to manufacturing centers that show the greatest number of vacant farm homes, indicating that high factory wages have been a pronounced factor in drawing thousands away from the country-side. Kent county shows 471 vacant homes, Oakland 660, Allegan 394. The situation in the center of the state is not quite so deplorable, Ingham showing only 146 vacant farm homes, Ionia 147, Clinton 107 and Barry 290.

The crop estimates bureau figures also correspond to the farm bureau statistics on shortage of labor in the rural sections of Michigan, which were 24,900 farm hands.

The above statement of actual conditions should be an eye-opener to farmers who still doubt that concerted action is necessary on the part of the agricultural interests of America to raise their business to a profitable and satisfactory basis. Colorado, fortunately, has no such story to tell. Our figures show an increase in total acreage this year over 1919, due to the fact that this is still comparatively a new country, constantly receiving settlers from the older states. Nevertheless we must look at the agricultural problem as a national one and not a sectional question. Michigan is not alone in loss of rural population; New York and other eastern states report similar conditions.

The Nation in God's Hands.

Western Farm Life:

I was much interested in the article from the pen of A. M. Wilson on "The Strength and Peril of Class Consciousness."

His discussion and analysis of the effects of the organization of classes upon the nation and economical questions seems to be patent to the times, but unfortunately so few read and few care for little else than the individual—self, hence selfishness is the prominent element that enters into the position held by class organization, be it labor or capital. More prominent by the workman because the possessors of capital having what he (the workman) cannot have, he blames capital as the cause without recognizing that the element of ability or skill, or even opportunity, has been a dominating force in the accumulations of the one, while the want of them has been too often the cause of failure on his part.

How to meet the problem of better social conditions is a greater question than proclaiming war or trying to settle the aftermath of it. Many of us have answers to this question, but none have measured up to the how as yet.

I believe that the American people can rise up to doing the work of better government and while anarchy may menace the nation. Life, money, or position, is not too good to be given for the growth and prosperity, and even for the nation's safety, as the past has demonstrated.

Let the needs be apparent and the people will arise to the occasion. How? Time will demonstrate. This is God's country. When there is need for His hand to be shown He will raise up some leader as he did in the many wars of the Israelites and His cause won out; "not by might or power, but by His spirit" will He rule and overrule.

My trust is in the God of nations and this people is the instrument by which they will save from destruction a people who can conserve the Holy things of the world.

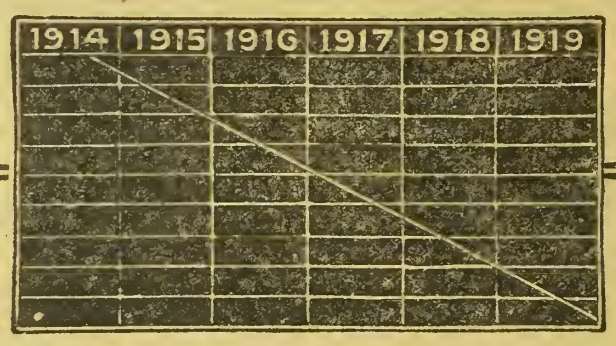
This nation may be menaced and put to distress, but will not fail, or go to destruction, like the ancient nations of Rome and Greece.

The leader is a necessity, yet the soldier in the ranks is the dependant force for success. Get him? Yes, by systematic work and teaching.

One of the hardest tests of readjustment and return to normal economic conditions, is the moving of the retired farmer to town, thus cutting down the available supply of manual labor, and the problem of the boys and girls who do not wish to live where there are not the enjoyable privileges of the town and cities, notwithstanding the advantages of the auto in getting about. Are we not all of us encouraging the attitude of getting along with as little effort as possible and getting as much for it as possible?

Until the farmer gets back to work on the farm—from sun to sun—or as strenuous effort as our fathers put forth, we will find living products maintaining a high level and not meeting the increased demand.—W. O. Fletcher, Loveland, Colo.

If in need of advice, ask Western Farm Life Service Bureau.



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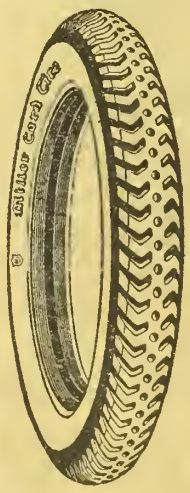

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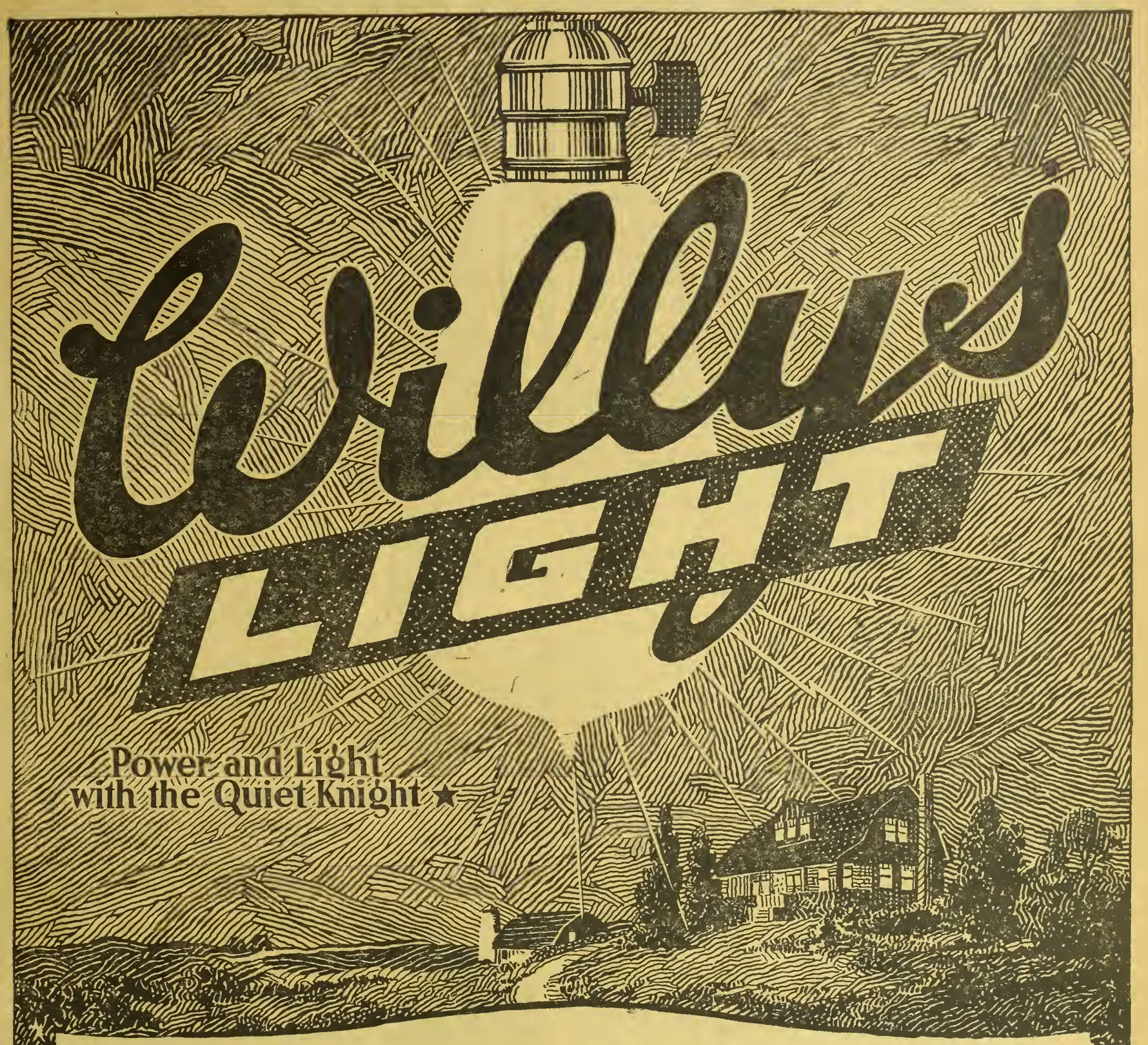

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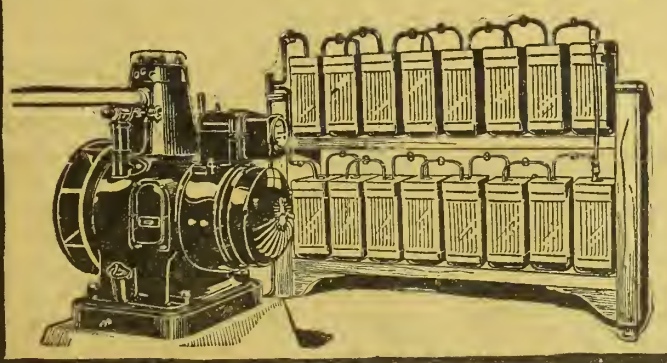

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Dairying and Hog Raising

H. A. LINDGREN

All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, Western Farm Life, Denver, Colorado.

Balanced Ration for Dairy Cows.

Did you ever stop to consider that a cow is just like a bank, in that to get something out of her you must put something in? Many dairymen fail on this point. They do not seem to realize that in order to get a satisfactory return from a cow they must give the proper kind of feed.

A cow needs in her ration three outstanding things: First, bulk to satisfy her appetite; second, it must be palatable; third, it must contain enough nutrients in the proper proportion to supply her bodily needs and enough more to make up for the milk she is trying to produce.

The bulk in the ration is made up from roughage such as hay, silage or roots. Alfalfa hay alone may be used as it contains enough nutrients to supply the needs. However, one cannot get as good results as is possible with a mixture of hay and a succulent feed. Silage and roots supply this. Dry hay does not keep up the milk flow when fed alone. The succulence approximates grass conditions to quite an extent.

Every farmer cannot own a silo. That is, a farmer who has one or two or even five cows does not find it practical to build one for that number. However, he can usually raise a root crop which will do practically as well in supplying succulence which the cow needs to maintain her milk flow.

Just a word here defining a balanced ration. There are two nutrients that a cow uses in body maintenance and in the production of milk. One of these is protein, the other carbohydrates and fat. One might consider the latter two separate, but as they are interchangeable they will be referred to here as one. Feeds contain these substances in digestible form but in different proportions. In balancing these we must consider what the cow needs to perform her work and try to find the combination of feeds that will supply these wants in the right proportion and still have supplied the bulk and palatability.

No good dairyman who knows his business will try to force his cows to eat something that they do not like, such as moldy feed or harsh, woody feeds, etc. The cow may be forced to eat them, but she will not eat enough to supply her wants. This will cause her to fall off in milk flow.. What one should strive for is a feed that the cow will like and eat a great deal of and which contains the required nutrients to stimulate a heavy milk flow.

Good alfalfa hay and corn silage are balanced for the ordinary conditions. The heavy milking cows may need a grain feed. The advisability of grain feeding must be considered by every dairyman for his own particular cows. Do not hesitate to feed it if your production warrants, as there is no question but that it pays for the heavy producer. In working out a ration for the needs of the dairy, take into account first the composition of your roughage. Compute the nutrients contained in an average day's feed. If it is lacking in some one of them, supply it with concentrates. To assist in this the following may be of value: A 1,000 lb. cow requires 0.7 lbs. of protein, 7 lbs. of carbohydrates, and 0.1 lb. of fat for daily maintenance. Twenty-five pounds of 4 per cent milk will require 1.34 lbs. protein, 6.05 lbs. of carbohydrates, and 0.52 lbs. of fat. The total nutrients required for maintenance and milk in that case would be: Protein 2.047 lbs., carbohydrates 13.05 lbs., and fat .62 lbs. Now let us see what feeds would be required to supply these needs. We will consider that alfalfa hay and corn silage are available. It has been found that a cow will consume 40 pounds of corn silage and 10 pounds of hay in a day to satisfy her appetite. Forty pounds of corn silage contains: Protein 1.67 lbs., carbohydrates 9.77 lbs., fat .380 lb. Thus we find that that ration is not sufficient to supply her needs. In order to expect her to keep up her milk flow it is necessary to supply some other feeds in addition.

Let us try a little grain. Suppose we have bran and barley on hand. We will try to balance the above ration with these. A mixture of 4 lbs. of barley and 2 lbs. of wheat bran will supply as follows: Protein .634 lbs., carbohydrates .345 lb., and fat .048 lb. This with the hay and silage will give us nutrients amounting to 2.244 lbs. protein, 13.22 lbs. carbohydrates, and .428 lbs. fat. The required nutrients were 2.047 lbs. protein, 13.05 lbs. carbohydrates, and .62 lb. fat. While the suggested ration does not exactly balance, it is near enough for practical use. This paraticular ration may not be applicable for every locality, but the point that is to be illustrated is the method of working out a satisfactory ration with the feeds available. One must consider the cost of the available feeds and the palatability.

In working out a ration, tables on composition of feeds and milk should be consulted. Western Farm Life Service Bureau will be glad to furnish these upon request, or write the U. S. Department of Agriculture for Farmers' Bulletin No. 743, Washington, D. C. In writing the Service Bureau please give the available feeds and their prices.

Liberal feeding of the right kind of feed to good dairy cows will bring satisfactory returns in all cases.—H. A. L.

Production of Clean Milk.

It should be considered a duty by the producer of milk to keep only healthy cows, supply them with wholesome feed and keep them in clean, comfortable quarters. The well-being of himself, his family, and the community demands this. It is a recognized fact that clean milk from healthy cows, free from dirt, contains only a small number of bacteria, none of which are harmful. Bacteria are tiny organisms invisible to the naked eye. They should be kept out of milk as far as possible and those that do get in should be prevented from multiplying by promptly cooling the milk.

Dairy products are perishable products and should be cared for accordingly. Milk is the most perfect food for

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are of the double bow, aeroplane construction. Light in weight; exceptionally durable and look well. Cannot sag, warp, twist or bend. Satisfaction guaranteed. It's the Master Gate. Free circular—write for it.

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$25.00 Sweep Feed Grinder | $31.00 Galvanized Steel Wind Mill.

We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.

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DAISY FLY KILLER PLACED ANYWHERE ATTRACTS AND KILLS ALL FLIES. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 5 by EXPRESS, prepaid, $1.25.

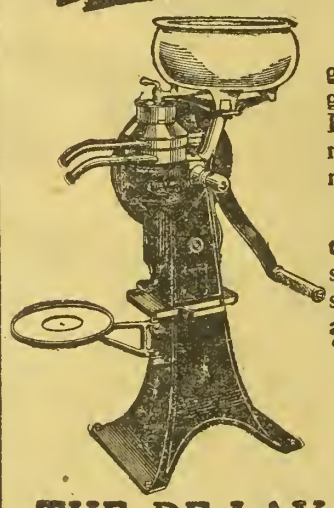
HAROLD SOMERS, 150 De Kalb Ave., Brooklyn, N. Y.

DURABILITY OF THE DE LAVAL

This illustration is reproduced from a photograph of Mr. Jacob Rimelspach, in Ohio, and his DeLaval Separator, which has been in use for over 25 years.

The machine was brought in on a local De Laval Service Day to be looked over by the service man.

There was nothing the matter with the separator, and after it was cleaned up and oiled Mr. Rimelspach took it home with the comment that it ought to be good for another 25 years.



The De Laval Separator gives the greatest value for the money, because it gives better and longer service. Mr. Rimelspach's experience is equaled by the records of a large number of De Laval machines.

Considering its greater durability alone, the De Laval is the most economical separator to buy; and with its cleaner skimming, easier running, greater capacity and unequaled service, the price of a "cheaper" machine is high in comparison.

If you don't know the De Laval agent in your community, write to the nearest De Laval office

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Over 1,200 Hollow Tile Silos

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More than all other makes combined prove: The Hollow Tile Silo is best.

We are experienced and reliable builders. We do good work and stand behind it.

Of course you want our silo and our service. It costs no more. We have an agent near you.

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NO MORE BLACKLEG

ARE YOU VACCINATING AGAINST BLACKLEG AND STILL LOSING CALVES?

If so, you must be using an inferior Blackleg Vaccine.

The GENUINE DR. O. M. FRANKLIN'S KANSAS GERM FREE BLACKLEG AGGRESSIN (Vaccine) (The only aggressin backed by a guarantee to pay for every calf you lose from blackleg after vaccination). SAVES EVERY CALF WITH BUT ONE VACCINATION. Do not be misled by cheap imitations claimed to be "just as good" or "the same thing."

Reliable products are always subject to imitation, therefore, be sure you find this trade mark on every bottle you use. IT IS YOUR PROTECTION.

Price 40c per dose; for 10c additional per dose, we issue a written guarantee against loss from Blackleg. Comes ready to use in 5, 10, 20, 45 and 90 dose bottles. Our special make syringe $3.00. Free Booklet on request. Order through our local agent or from our nearest office.

THE KANSAS BLACKLEG SERUM COMPANY,
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lightens the load—eases the hauling strain on horses and harness—keeps wagon wheels in perfect alignment and running smoothly.

Sold in 1 and 3 lb. tins, 10 and 25 lb. galvanized pails. At reliable dealers everywhere

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human use and is also perfect for development of bacteria. The temperature most favorable for the growth of the bacteria that spoil milk ranges from 70 degrees to 100 degrees F. If milk is cooled to from 40 degrees to 50 degrees F. immediately after being drawn, it will keep in a desirable condition for a long time, while otherwise it may keep only a few hours. The cleanliness of milk and the conditions under which it was produced and handled together with the temperature at which it was kept have a great influence on the resulting quality of dairy products. The producer of dairy products should consider the following suggestions:

The health of the cattle is vitally important.

The milk from cows affected with tuberculosis, or other diseases, should not be used for human food.

Any cows showing abnormal conditions should be milked separately and the milk not used for human food.

Any abnormal condition of the milk, such as a slimy or bloody appearance, also will make it unsafe to use. The health of the attendant, milker, and other handlers is also important, as milk is a perfect medium for pathogenic (disease producing) bacteria. So-called "epidemics" have been traced to the milk supply. This is caused by lack of care and forethought on the part of the attendants who may be sick. A pure water supply is equally important because of the possibility of contamination, if impure or polluted water is used for drinking or washing. Disposal of waste and keeping surroundings in a sanitary condition also are vitally important. The milk sugar in milk attracts flies and special construction of buildings is necessary to keep them out. Fly breeding places should be destroyed, also measures taken to screen flies from dairy rooms and to trap or catch them. The sources of high bacterial counts in milk are given and these remedies suggested:

Body of cows. Remedy, clean cows; small-top milking pails.

Unclean utensils. Remedy, thorough washing and sterilization.

Growth of bacteria. Remedy, prompt cooling and storage at low temperature.

Cleaning the body of the cow is very important and takes only a few moments. It is a good practice to clip the long hairs from the udder, flanks and tail, in order that dirt may not cling to them; and cows should be washed at least once daily. It is a good plan to wipe off the udders, flanks and bellies of the cows with a clean, damp cloth to remove any dust or loose hairs just before milking. Sufficient bedding, proper stable construction and frequent removal of manure will aid in keeping the cows clean. Small-top pails also help materially in keeping out dirt and bacteria.

One of the greatest causes of poor quality milk is the improper washing and sterilization of dairy utensils. The best remedy for this condition is plenty of hot water, an alkali washing powder, a stiff brush and steam. Avoid cloths, greasy soap, soap powder and cold or lukewarm water.

Steam for dairy utensils is available for even the smallest dairies, by means of a simple steam sterilizer. (Farmers' Bulletin No. 748.)

The cooling of milk and cream and keeping it cool is perhaps the greatest factor in producing good milk.—F. R. Cammack, Field Dairyman, University of Idaho.

Johnstown Cow Tester's Report.

Report for the month of April, 1920:

Number of cows tested, 380.

Average pounds of milk per cow, 850.5 pounds.

Average pounds of fat per cow, 33.5 pounds.

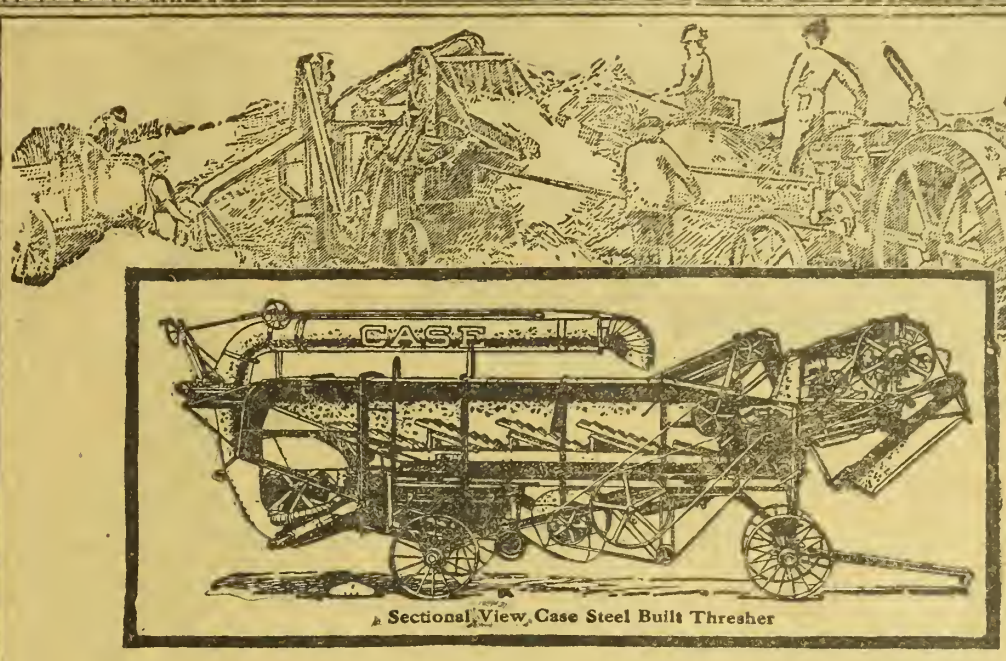
The three highest herds are:

Lohry & Wailes, Johnstown, 42.10 lbs. fat per cow; 1,262 lbs. milk per cow, 22 cows.

W. C. Sauer, Fort Lupton, 41.79 lbs. fat per cow; 1,223 lbs. milk per cow; 23 cows.

Van Meter & Krebill, Loveland, 40.7 lbs. fat per cow; 1,218 lbs. milk per cow; 18 cows.

The high cow, registered Holstein, Rocabie Johanna Clyde, 2,600 lbs. milk, 94 lbs. fat, owned by W. A. Purvis. The second high cow, a grade Holstein, Kate, 2,280 lbs. milk and 92 lbs. fat, owned by J. W. Whowell & Son. In comparison with last month's production there has been an increase of 71.5 lbs. milk and 3.5 lbs. fat per cow. The number of cows producing over 40 lbs. fat has increased from 98 to 113, and the number of cows over 50 lbs. has increased from 31 to 36.—Walter Geurkink, Tester.



Sectional View Case Steel Built Thresher

Look for the EAGLE Our Trade Mark

Case Threshers Save Your Crop

GOOD threshing is the climax of good farming. It's what you have been working for ever since you began preparing ground for seeding. It's just as important as fertile soil, summer showers and harvest sunshine,—and it's up to you. If you do not own a Case Thresher, the next best thing is to employ one.

The Case Steel Built Thresher, in any of the six sizes we manufacture, is the machine of *clean threshing, thorough separation, perfect cleaning* and *unequalled saving.*

You owe it to yourself to save all you harvest. You can do it with a Case Machine. It successfully handles Rice, Flax, Peanuts, Peas and Beans, Rye, Oats, Barley, Wheat, Clover and Alfalfa, Millet, Buckwheat, Timothy, Orchard Grass, Kaffir Corn, Sorghum, Broom Grass Speltz, Hungarian Grass, Red Top, Blue Grass, Milo Maize, Sudan Grass and Feterita.

After passing the cylinder, where all the grain is threshed and most of it separated, the straw is shaken,—shaken—shaken;—230 shakes a minute. Note the improved straw-rack, the great separating surface and ample space for straw.

Write for catalog of Case Steel Built Threshers showing sizes suitable for the individual farm or for custom threshing on the largest scale.

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Making Superior Farm Machinery Since 1842

To avoid confusion, the J. I. CASE THRESHING MACHINE COMPANY desires to have it known that it is not now and never has been interested in, or in any way connected or affiliated with the J. I. Case Plow Works, or the Wallis Tractor Company, or the J. I. Case Plow Works Co.

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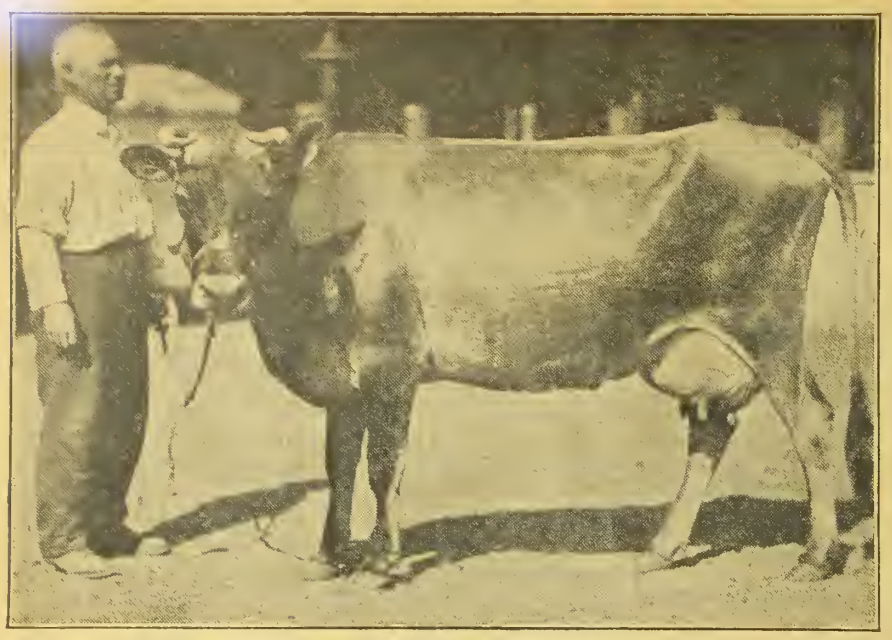
NOTE: We want the public to know that our plows and harrows are NOT the Case plows and harrows made by the J. I. Case Plow Works Co.



Little Sally Don 281512, owned by R. G. Inman, Gardner, Colorado.

A New Jersey Breeder.

Among the new men in the purebred game is Mr. R. G. Inman of Gardner, Huerfano county, Colo., who has embarked in the Jersey breeding business with foundation stock purchased from the herd of R. C. Robertson of Trinidad last November. Mr. Inman will follow the same blood lines, namely, the Raleigh strain, as his foundation stock is of that family, some of his cows having register of merit records. The Robertson herd is classed among the best in the west, consequently Mr. Inman is starting along the right lines. His herd is headed by Lady's Pride Raleigh 13400, a splendid sire, whose immediate ancestry includes Queen's Raleigh 88323, a great show bull, and Rochette's Lady Pride 290829, imported in 1913 from the Island of Jersey. Mr. Inman has 19 registered cows and some excellent young bull calves. A part of this herd was shown by the former owner, Mr. Robertson, at the National Western in January, taking several premiums.

Mr. Inman's ranch is located at over 7,500 feet and his main crops are alfafa and barley. He is taking his sons into active partnership, although the youngest is only 9 years of age. The young men like Jerseys and they are taking to the work like veterans. They are hand-milking and marketing their cream, which system is found quite satisfactory. Dairying is not an extensive industry in that locality, but a number of purebred herds have been started in Huerfano county in the last two or three years. The Inman herd, however, is the only purebred Jersey herd in the county, as far as we are aware.

Arkansas Valley Cow Testing.

The tester's report for April on the Arkansas Valley Cow Testing Association shows the high cow and high herd owned by the American Beet Sugar Company's Center Farm at Lamar. The high cow produced 1,869 lbs. of milk and 71 lbs. of butterfat. The high herd of 20 cows averaged 1,425 lbs. of milk and 47.1 lbs. or butterfat. The five highest herds shown by the tester's report were the following:

A. B. S. Co., Center Farm, average milk per cow, 1,425 lbs.; average butterfat, 47.1 lbs., on 20 cows.

E. P. Gilbert, Lamar, 1,155 lbs. milk and 39 lbs. butterfat, on 14 cows.

George Shell, Holly, 1,083 lbs. milk, 32.7 lbs. butterfat, on 22 cows.

Boetta Bros., Holly, 1,066 lbs. milk, 33.1 lbs. butterfat, on 19 cows.

Model Dairy, Holly, 1,005 lbs. milk, 33.4 lbs. butterfat, on 24 cows.

The five high cows made the following records: Center Farm, 1,869 lbs. milk and 17 lbs. butterfat; L. Wirt Markham, Lamar, 1,746 lbs. milk, 69.8 lbs. butterfat; A. B. S. Co., Center Farm, 1.992 lbs. milk, 65.7 lbs. butterfat; Green Mountain Dairy, Lamar, 1,986 lbs. milk, 59.5 lbs. butterfat; Froman Bros., Wiley, 1,653 lbs. milk, 56.3 lbs. butterfat.

Otero Cow Testing Association.

The Otero County Cow Testing association reports for April, 291 cows tested, with an average of 513 lbs. of milk per cow, and an average of 19.56 lbs. or butterfat per cow. The high cow produced 1,623 lbs. of milk and 58.4 lbs. of butterfat. The high herd in this association, comprising 9 cows, made the record of 918 lbs. of milk and 34.11 lbs. of butterfat. Eleven cows in this association produced over 45 lbs. of butterfat.

John Blum is the owner of the high cow and the high herd in the Otero county association.

To Enter Coast Shows.

Daly & Thompson of Cambridge, Neb., breeders of Daly's Durocs, report the sale of a litter mate to Crusader and Crusader's Queen to the Richards-Olson Livestock Company of Virginia, Idaho. She will be fitted for the shows on the Pacific Coast this year and was a part of their show litter that won so heavily at the recent National Western in Denver. These people report having 140 pigs from their early farrow and those by Crusader are the best they have ever had on the farm.

The wise breeder is the one who gets into livestock when it is low, and has a surplus to sell after prices have come up.

A Lot of Hot Air in the Political Atmosphere This Month

BUT

Hot Air Won't Affect Your Shingle Roofs

AND

Wooden Buildings

If You Paint Them With

Bituminous WATER PROOF Roof Paint

Prevents Cracks and Dry Rot.
Protects the Wood

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THE first impression you get when you see an EMPIRE-BALTIC is—simplicity. Almost automatically the design which brought efficiency brought simplicity also. For efficiency demanded compactness and freedom from "ginger-bread work"—a machine that could be used and misused without affecting its efficiency in skimming. The EMPIRE-BALTIC, the Separator with the Million Dollar Bowl, is the product of years of study and experiment by a score of the foremost separator engineers. It sets a new standard of separator performance.

The Million Dollar Bowl is self-centering and self-balancing; practically no vibration; and so does not agitate the milk; it skims clean all the time; it is easy to turn, frictionless; once adjusted it is adjusted for life; its discs are interchangeable — a great convenience in cleaning and assembling. It is the last word in Bowl construction — Simple, efficient, convenient and practically everlasting.

You'll find other separators as good looking as the EMPIRE-BALTIC—no manufacturer has a corner on good looks. You'll find other Separators made, like the EMPIRE-BALTIC, out of the best materials obtainable—anyone can buy the best grades of materials. But you'll find only one Separator with the Million Dollar Bowl — an exclusive EMPIRE-BALTIC feature—fully covered by basic patents. Clip and mail the coupon below.

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Manufacturers of Empire Milkers and Gasoline Engines

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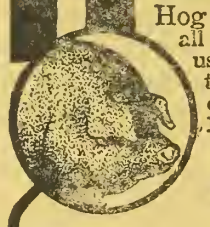
HOGS Make 'em Grow Fast



Hog and poultry raisers in all parts of the country are using Semi-Solid Buttermilk because they know it is the "Best Hog and Poultry Feed on Earth." It gives quicker gains, earlier marketing and bigger profits. 100 per cent digestible.

Semi-Solid Buttermilk

"The Best Hog and Poultry Feed on Earth."

Just creamery buttermilk with the water removed and nothing added. The same as home churned. Contains high percentage of protein and natural lactic acid. Contains no sulphuric acid or other injurious preservatives. Natural lactic acid keeps it fresh indefinitely. Semi-Solid Buttermilk is pure enough to drink or use in batter cakes. Don't use a substitute or so-called modified buttermilk. Get the Genuine Semi-Solid Buttermilk, absolutely pure and unadulterated, for quick results.

Better Than Grain Feeds. Order a barrel of Semi-Solid Buttermilk (average weight 500 pounds). One barrel makes 1000 gallons of pure, rich, buttermilk feed. **Order today.**

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Dept. 205 **Lincoln, Nebraska**

Contagious Abortion *the Scourge of the Cattleman* — Prevented

If your cows are dropping dead calves or immature calves, don't sacrifice either cows or future calves.

Our U. S. Abortion Tablets (Calkins) will stop it, and prevent it in the future. OVER 12,000 COWS TREATED SUCCESSFULLY.

Seems to be just as effective and reliable as our Kansas Blackleg Aggressin (and that is practically perfect). Write for affidavits of users.

PRICE $1.04 Per Treatment, including war tax.

THE U.S. BLACKLEG SERUM CO.

INCORPORATED

Dr. F. S. Schoenleber, Pres.

Address:

STOCKYARDS STA., DENVER, COLO.

OKLAHOMA CITY, OKLA.

What Is Breeders' Aim in Duroc Jersey Type?

(Continued from Page 4).

must have heavy bone and coarser muscular tissues than the 1,000-pound hog.

Large animals are slower of maturing than small ones. This is universally the case. Sheep and hogs mature early and reproduce early. Cattle and horses being large, take a longer time to get to maturity, and must be older before they can be used for reproduction. As maturity approaches, the frame grows less rapidly, and there is a greater tendency to fatten. We must then squarely face the fact that as we increase size we delay maturity and delay the tendency to fatten. The balance between these things is a practical one, involving the need of the grower for more pounds at a given age, and his need for a hog which will fatten at a reasonably early age so that the expense of feeding shall not be excessive. These needs must be balanced against the demand of the killer for a hog carrying a wealth of fat and a hog that will dress off a small percentage. If our breeders look for only one of these things, and that is weight or size, they will inevitably be brought back to earth by the need for other points. The only reason the demand became so great for large hogs was because size had been sacrificed. Some day there will come also the demand for hogs that will fatten at an early age, and that demand will be insistent in proportion to the development of extreme size at the expense of fattening qualities. In nearly all cases the true type lies somewhere between the extreme types advocated by different schools of breeders, and I think that is true in the present instance.

Second: The question of high back and big bone in relation to economical production is an important one. The demand for a high back comes from the fact that there has been an attempt to lengthen the body greatly in order to get more frame and scale. Naturally in a very long bodied hog there is a tendency for the back to drop; hence the demand for strong back.

Big bone should mean big frame, although there are occasionally small hogs that have big bones. Big bone should be used only as a guide to what the rest of the frame work is. I think one of the great troubles in connection with the development of breeds of livestock is that leaders in breeding have a distinct ideal in mind and attempt to secure certain points that go to make up that ideal. These points are taken up by smaller breeders as an end in themselves, and result in the hue and cry for certain things which are valuable only as they are combined with other characters. These points are pushed to an extreme, and other valuable characters are neglected. To my mind one thing is certain: with the frame and bone and weight we are after, we must get also the ability to fatten at from six to nine months of age. If this is not done we will find ourselves with a type of hog that must be kept a year in order to have him finished for the market.

The hog eats more high priced concentrated feed stuffs than any other domestic animal. Meat production by the use of concentrated feeds, is growing more and more costly, and we are working away from economy in developing a slow maturing hog. To my mind there will come in the end a hog that is considerable larger and heavier boned than the old type corn belt hog, and he will also have a greater tendency to fatten at a young age than the bulk of the present big type hogs. In fact, I think this combination has been arrived at by the best breeders of big type hogs, but the bulk of our breeders have not yet caught up with the leaders, and so far as that is concerned I suppose they never will, otherwise there would be no such thing as leadership.

The main point is never to lose sight of the fact that in the end improvement in a breed or in a herd is gotten, not by an entire change of type, but by adding to what we already have, and improving on present types. The man who has small, short-legged, dumpy hogs, lacking in size, must look for back, bone and frame, and the man who has been led to the extreme of breeding back, bone and stretch, without middle and without ability to fatten, must seek these latter qualities. There is some measure of true merit in most of the conflicting types within any breed, and the true breeder is the man who can hold a balance between them, and has the faith to back his judgment with peristence in his breeding operations.—Geo. E. Morton.

* * *

Judson Solomon's Comment.

In answer to your questions as to the type of hog that will suit our needs, I think the medium type is the most suitable. The extreme rainbow back and long legs will never come into their own until head, neck and soup bone gets to be worth more than ham and loin.

The rainbow belly invariably goes with the extreme high back and long legs, giving you comparatively small heart and lung girth with small abdominal capacity, making a poor and expensive feeder for economical production of pork. Give me the medium type with good length and depth of body, large heart girth, good bone, short neck and wide between the eyes.—Judson Solomon, Olathe, Colo.

Fraudulent Cream Tests.

On Friday, May 14th, the Colorado Dairy Commission secured a conviction of the Farmers and Merchants Creamery Company of Denver, and Frank Bicknel, proprietor and manager, on all six counts of the information which had been filed against them. The evidence showed that this company had returned tests with discrepancies of 2.5 to 4.2 per cent of the butterfat, which amounted to from 6 to 12 per cent of the gross returns which the farmer should have received. It was shown that this was a practice which had been carried on through August, September and October. The company had been warned regarding their tests in August, but continued the practice until after the information was filed against them.

The farmers on whose shipments of cream these cases were filed were scattered through various sections of the state, being: E. W. Dye of Roggen, Fred Engel of Galeton, Henry Evers of Roggen, Carmel Vynckier of Parker and George L. Bosse of Snyder on two counts.

Mr. Oliver Deane represented the district attorney's office in prosecuting the case. This is the second conviction secured by the State Dairy Commissioner for false return of tests on cream. The Climax Dairy Company was found guilty during the March term of court on seven counts filed against them.

A Soft Answer.

A salesman was traveling a country road when suddenly he saw a house burning. Running up, he pounded on the door lustily, till an old woman opened it.

"Madam, your house is on fire!" he exclaimed.

'Eh?"

"I say your house is on fire!"

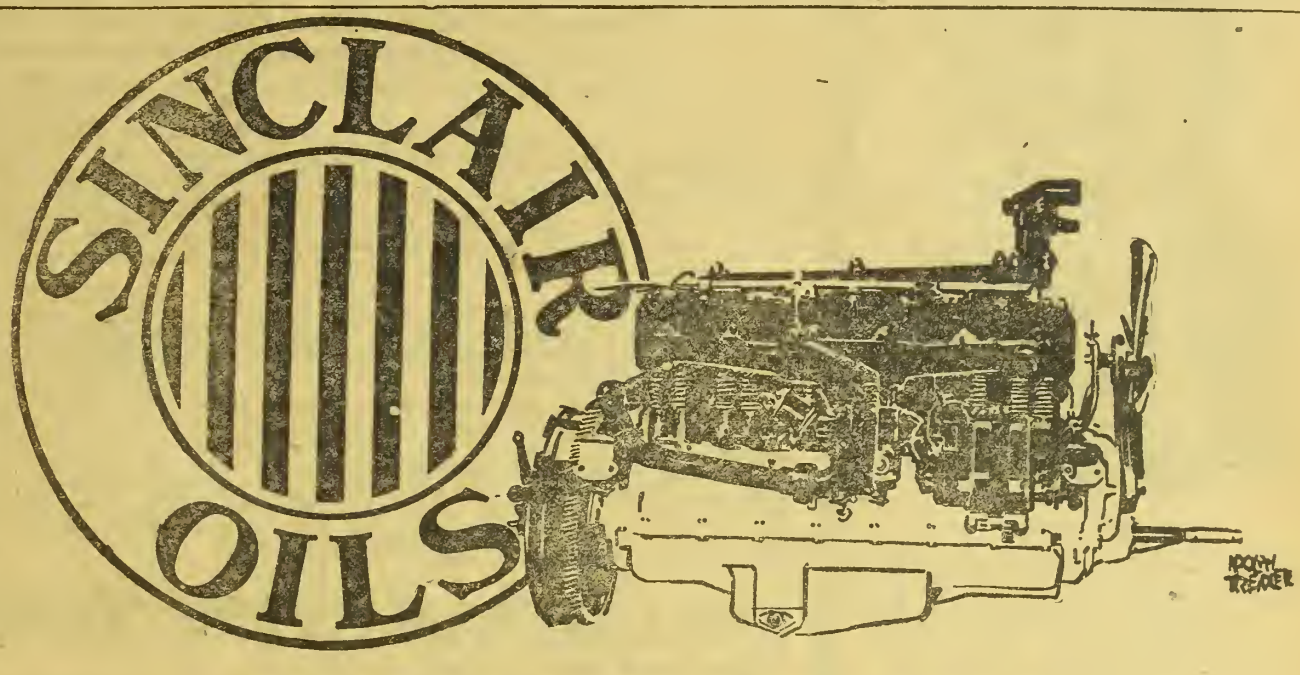
She put her hand to her ear and leaned toward him. "What?"

"Your house is burning up!" he roared.

"Oh, is that all?"

"That's all I can think of just now, madam," he gasped.—American Legion Weekly.

If in need of advice, ask Western Farm Life Service Bureau.



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New President Appointed For New Mexico College.

Robert Waitman Clothier, recently appointed president of New Mexico Agricultural College, was born in West Virginia in 1871 and moved with his parents to a Kansas farm in 1878. He taught district schools in that state and later entered Kansas State Agricultural College, graduating in 1897 and receiving his Master's Degree in 1899. He was assistant chemist at K. S. A. C. from 1897 to 1901, and in the latter year was appointed professor of chemistry and agriculture at Southeast Missouri Normal, serving that institution until 1906. In the latter year he was

Dr. Robert W. Clothier.

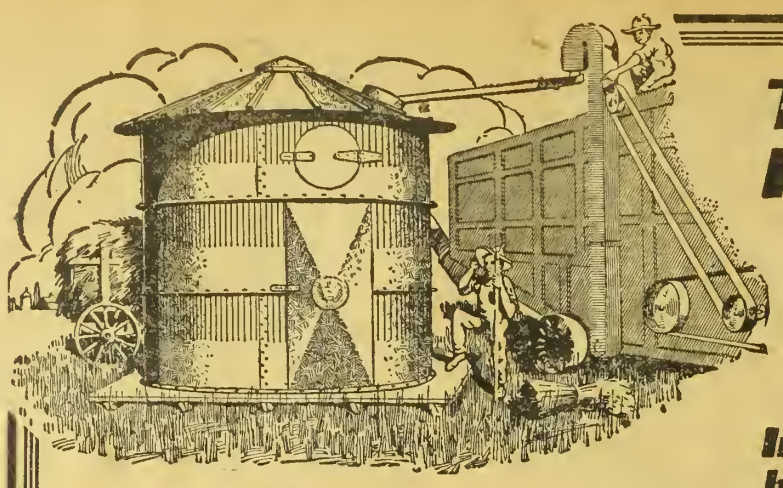
appointed professor of agriculture and horticulture in the University of Florida. On severing his connection with that institution he became professor of agriculture, superintendent of farmers' institutes and acting dean of the College of Agriculture, University of Arizona, where he remained until 1913. Following this he was a graduate student at Cornell University and then he entered the service of the U. S. Department of Agriculture as an agriculturist in the Office of Farm Management. He was engaged in field work in Arizona and New Mexico and later in Mississippi, serving as professor of farm economics in Mississippi Agricultural College, while still retaining his connection with the Department. He was elected president of New Mexico College of Agriculture and Mechanic Arts in March, 1920.

Dr. Clothier was a graduate student at George Washington University (night school) from 1914 to 1917, receiving his degree of Ph. D. from that institution. He specialized in chemistry as an undergraduate and in chemistry and agriculture for his master's degree. His special work included farm management, soils, soil bacteriology, physical chemistry and education at Cornell University and economic education and soil geology at George Washington University.

Dr. Clothier has published several bulletins and is the author of numerous high-class magazine articles on agriculture and related topics. He has been successful as a teacher and as an administrator. While at the Missouri Normal he had enrolled in his classes in agriculture 25 per cent of the total attendance at the school, although agriculture was an elective subject.

In Arizona he started with a budget of $500 and seven students in agriculture, and in four years built up a college with 56 students in agriculture, 24 of whom were in courses leading to degrees.

During the last six years he has been especially interested in studies relating to the organization of the farm for business success. In these studies he has personally interviewed some 1,500 farmers, getting careful statements from them of income and expenses. This has been an invaluable aid to him in presenting the problems of the farm to the public. His ability as a platform speaker is marked and as a background he has years of training and close contact with the farmers which gives his public utterances authority. New Mexico is to be congratulated upon having secured the services of such a distinguished educator and agriculturist. His influence will do much to put the institution on a firmer basis and secure for it better support from the legislature and the people of the state.



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Thousands of Columbian Portable Steel Grain Bins were sold last year, and in many cases were the direct means of preventing an almost total loss of the crop grown by the users.

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The Columbian Portable Steel Grain Bin is durably constructed of the best grade of rust-resisting, copper-bearing galvanized steel. It is sectional in construction and is held together by our patented lock joint which adds strength to the bin. The upper half of each sheet is corrugated to give additional rigidity. The bins are shipped knocked down and full instructions for their erection are sent with them. They are so simple in construction that anyone can erect them in a few hours time. Portability is secured by mounting them on a platform provided with skids which enables them to follow the threshing machine and eliminates the waste and additional labor of transporting the threshed grain to the elevators at a time when every available man is needed in the fields.

Each bin has a steel door 5x2 ft. in size and provided with a hasp for locking. A shoveling board is provided which prevents the grain from flowing down faster than it is shoveled away. There is also a sacking spout provided by which means over half the contents of the bin may be removed without the necessity of shoveling. A **Columbian Steel Grain Bin** is absolutely proof against all the elements such as wind, water and lightning. It is rat-proof and bird-proof. It affords you the best protection obtainable against all the hazards that spell losses of grain for you. Order from your dealer TODAY, or if he cannot supply you write us direct for our Grain Bin Circular No. 300.

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New Shorthorn Breeders.

The Triangle Ranch Company is the name of a new firm at Genoa, Colo. At the recent Shorthorn sales in Denver they purchased several head for the building of a herd on their farm. Their plan is to work into the breeding of Milking Shorthorns and Duroc Jersey hogs. Mr. W. C. Henderson of the Great Western Sugar Company is a partner in the Triangle Ranch Company and he did the buying for the firm.

Hogs Crave Minerals.

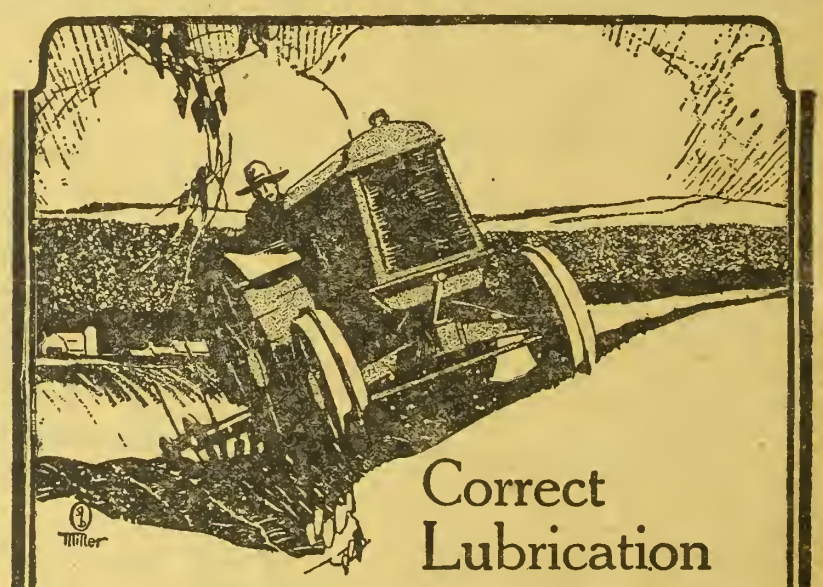
Hogs crave mineral and need it in their ration. If they do not get it they often eat sand, which is injurious to them. The following mixture of mineral substances may be prepared at home and will serve as a help to satisfy the craving and to assist in keeping the hogs in good physical condition:

Charcoal, 1 bushel.
Wood ashes, 1 bushel.
Air-slaked lime, 8 pounds.
Salt, 5 pounds.
Sulphur, 4 pounds.
Copperas, 4 pounds.

Put it in a small self-feeder, or trough, where the hogs will have free access to it at all times.—H. A. L.

Co-operative Shipments in Idaho.

A report from the University of Idaho Extension service states that Bingham county farm bureau marketed 7 carloads of hogs co-operatively during the month of April. There was a total of 615 hogs in the 7 cars, weighing 132,065 pounds. They sold at an average price of $14 per hundredweight at the loading point. The total amount received for these was $18,132.38. The saving per hundredweight was estimated at $2. This report is simply a repetition of similar information coming from all sections making use of the co-operative livestock shipment plan. Every community where there are small breeders of livestock should be interested in forming an association, as the saving during a year's time amounts to a great deal over the old plan of selling to local buyers.—H. A. L.



Correct Lubrication and *Marketing Waste* Costs

H. C. Filley of the University of Nebraska attributes much of the high cost of living to wastes in marketing, which in turn adds to the cost of production and cuts the farmer's profit.

Tractors play an important part in today's farm production. And the tractor *on the job* not in the repair shop. Tractors that care for you because you take care of them.

Stanolind Tractor Oil is the ideal lubricant. It keeps engines fit because it is especially manufactured by a great concern for the special service required in tractor work; where the cylinder heat is unusually high.

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STANOLIND TRACTOR OIL

"Loafer," yells a farmer at a town fellow. "Profiteer," yells back said fellow to the farmer. And soon a whale of a scrap is on, and neither one is fighting on a sound premise, and neither will get anywhere. Each needs the other, but wowie, how some hate to admit it. —The County Agent.

Why McClellan Quit Seed Potato Growing.

I have given up growing seed potatoes. Why? First, I can not work in the field myself, being too old for that, and after trying three men I have been unable to get the right kind of manager. Second, the unreliable and too high priced help. Third, farmers are not willing to pay the price for good seed. Fourth, I do not believe certified seed potatoes of the white varieties can be grown on the plains.

In the east they claim dipping seed in corrosive sublimate will stop rhizoctonia. It may do it there, but after two years careful experiment I have found that in the Greeley district it will not stop it. Nor will careful hill selection do it. We all know this disease is always with us in the white varieties. Its severity varies with the season. Sometimes it begins to show in the field soon after July 4, when we have hot dry weather, more often it is the last of July. A rain with a few cloudy, cool days will check it, and following such a spell with an irrigation I have seen it almost disappear for two weeks, but another hot spell brought it out again stronger than ever and it cut the yield 15 to 20 per cent. In cool summers with cooling showers the loss from this source is light, possibly 5 to 10 per cent. But each crop from the same seed grows worse each year and in a hot dry season will cut the yield as much as 50 per cent, and the quality nearly as much.

The Bliss Triumph does not seem to take this disease, but the same conditions produce mosaic; but this does not seem to increase from year to year. It is possible that some variety may be found that will withstand this disease. Out of all the varieties tried in the Greeley district, only the Pearl and the Rural have been successful. To grow good seed they should not be planted too early, so they may be dug before fully ripe. They should be planted close in rows to make small, even sized potatoes; then you will have about 65 per cent for seed. Now this means a smaller yield per acre, for all the long, rough ones must be thrown out. I find that most of the rough ones grow at the bottom of the hill and are caused by the hard surface at the bottom of the plowing and that causes their ill shape; all buyers demand they be thrown out. This requires careful sorting and unless you can get an extra dollar per hundred you had better raise large potatoes and take the market price.

Our farmers kicked on this extra dollar. They would rather go to the warehouses and pay 50 cents less and get eastern seed that had been sorted out of what went through the screen and get 75 to 80 per cent stand. Because they got them 50 cents less than I asked they thought I was a profiteer for charging one dollar above the market price for the seed! In time this might be overcome, but for reasons stated above I quit the job. Parties who have been growing white potatoes on the dry land tell me they have reached the same conclusion.

Up on the Divide and in the valleys of the mountains where they have cooler weather and showers, they may raise certified seed potatoes. But I doubt if it can be done on the plains on either dry or irrigated land. In the white varieties, we know from experience, that in three successive crops the seed gets so impregnated with rhizoctonia that the yield is so low that we must get new seed. I brought Dean seed here from New York and the New York college assured me that there had been no disease in their field for three years, and I spent an afternoon looking over the field, which was undug, and could not find any evidence of it, and yet it developed more disease than the same variety I got in Wisconsin, and the college there said there was 2½ per cent in the seed! The worst thing was, I had more disease yet on the second year of the New York stock, while the Wisconsin was about the same as the first year.

Last year (1919) potatoes in the Greeley district planted previous to May 25 had 50 to 75 per cent stand. From that to June 4, 30 to 40 per cent stand, after that the stand was too poor to pay to work. Even those that were planted after June 4 and watered right behind the planter scalded and rotted. My fine hand-selected Rural and Pearls planted watered, started to sprout 1½ inches then rotted, and while the shell looked all right, upon breaking it open it was as yellow as cornmeal and mushy like coarse cornmeal mixed with water. Fifteen acres planted June 20 after beans, froze down, were watered and gave a poor stand on the end of the row where water backed up. They, with my late beans and third cutting of hay, were cut down by a terrible hailstorm September 1. My thirty acres early Bliss were frozen down June 4, and I got only my seed back. So I am out of the seed business and the future does not look good enough to warrant paying $7 per 100 pounds for new seed.

My Bliss did fine the second year. Last year they did not have any show. The late, planted June 7 to 12, never came up. The early ones were frozen and only a few hills lived and they gave only seed. But I am giving them another trial. In time we may find a white variety that will stand our hot, dry winds and hot sun and reproduce itself in vigor from year to year. But I have come to the conclusion that the Pearl or Rural will not do it beyond the third year. I was sorry to lose my Pearl and Rural seed as I had hill selected some very nice seed and also sent east for three tons of hill selected seed and planted alongside to test it and none of it came up. In July I spring-toothed the ground and sowed millet; it did not come up until a light shower in early August, and when 10 to 12 inches high the hail cut it down, so I lost my $200 worth of eastern seed and my special selected seed of the three varieties and my millet, and got nothing from the eight acres. Last year was a hard year in Greeley, but one extreme usually follows another. The big snows assure a stand and plenty of water and the old rule will make good from all appearances now.

To keep up present prices of land we must feed more and we all regret that the cattle feeders are playing in such hard luck. Lambs well bought and cared for are paying around a dollar per head profit. No big thing considering the risk and labor involved. Cattle feeders have had the hardest knock in years. Feeders cost too much, feed too high, or else they sell too low on foot. The consumer pays enough, we all know who have to buy. I have yet to see the cattle feeder this year who came out whole and most of them are afraid to tell how much they lost. The beet crop in Weld county, as a whole, made no money last year. Exceptional fields made big money. Poor stands, shortage of water and lice took too big a toll in most fields. Banks claim more are behind this year than in previous years. But everybody is full of courage and prospects never looked better for a paying crop than now. More than thirty years ago an old Colorado farmer said to me: "After a big year go slow, after a poor year, sail in, as one extreme usually follows another," and it is most always so.—W. R. McClellan, Greeley, Colo.

Sheep are generally profitable animals, yet there are many farms without sheep. Why not raise a few sheep?

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ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; heals Sores. Allays Pain. Will tell you more if you write. $1.25 a bottle at dealers or delivered. Liberal trial bottle for 10c stamps.
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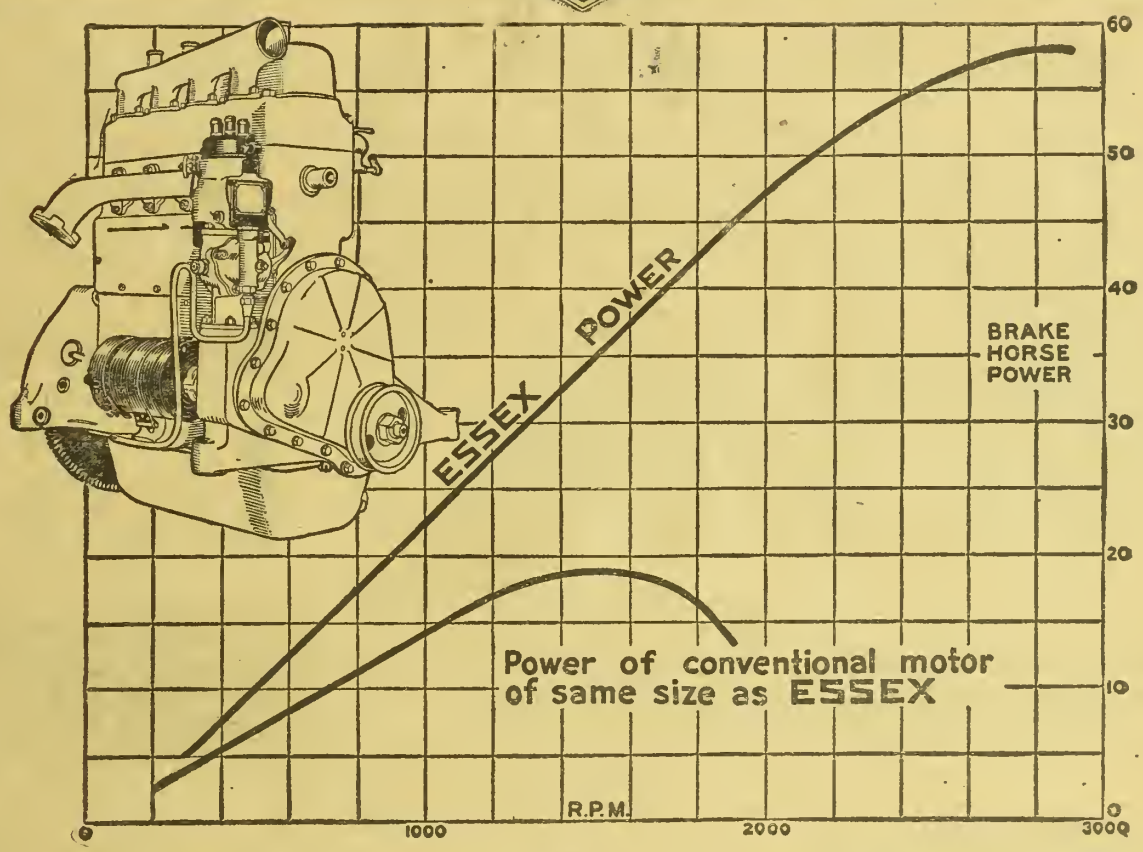

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It creates a new standard of light car capacity in a totally new type. And it cannot be copied. Do not forget that. You can get the abilities for which these records stand, only in the Essex.

Essex Motors, Detroit, Michigan

(199)

Fallowing for Wheat and Rye

DEEP EARLY PLOWING CONSERVES MOST MOISTURE.

E. R. PARSONS.

THERE are many good reasons for the summer fallow. The most important of these are given in a report by the Agricultural Department of the University of California, a reprint of which is given in this issue.

California dry farming is much the same as any other dry farming. Success depends on the conservation of moisture. In our own dry farming belt there are many who plow for the fallow almost any time up to July. More moisture is undoubtedly conserved by plowing earlier; but on the other hand, when the plowing is late, there are more weeds to plow under, and this leaves a cleaner field and adds to the humus in the soil. Some have claimed excellent results by starting the fallow in the fall, and there is no objection to this if the soil is well provided with humus or has been fertilized.

The usual thing among farmers is to plow as soon as the spring crops are all in. There is often time to do this before corn cultivation commences. The plowing should be done as deeply as possible, for there is plenty of time for the ground to settle before the crop commences to joint in the spring, and on deeply plowed land the roots have been known to go down seven feet.

Nearly every farmer has a preference for some implement with which to till the summer fallow, and this is usually determined by the nature of the soil. If it is light and takes water quickly the harrow will do; but if it is weedy the cultivator is indicated, and if it is a stiff loam which soaks up slowly there is nothing better than the disk. This implement is worked both ways without lapping, which leaves criss-cross ridges to hold the water and prevent run-off.

During the interval between plowing and planting the fallow should be worked at least enough to keep the weeds exterminated, and the last going over should be with the harrow to level off before seeding. It is safest to plant the seed deep, about 3 inches, for several reasons. It often happens that the fall is dry and the surface of the fallow is not as moist as it might be. In such a case if the seed is planted shallow with the ground underneath it dry, a light rain or snow may sprout it, and if the next precipitation is too long in coming the stand may be ruined. On the other hand, if the seed is planted deep it will require a good rain to start it and this will also be sufficient to establish it, and connect up with the moisture already in the soil. This often happens on land just plowed and on corn stubble land, and the farmer wonders why he never gets a good stand of winter wheat.

Other reasons for deep seeding are that it does not blow out so much, frost cannot easily damage it, and it is almost impossible to harrow it out. The practice of running in winter wheat on corn stubble is more or less of a gamble, according to circumstances. If the corn has left any moisture in the ground and the season is favorable a fair crop will sometimes result. But it is a significant fact that in all the great winter wheat producing districts the fallow method is strictly adhered to. Winter wheat is a good crop to plant for several reasons. If the fallow method is used it cleans the ground of weeds. It is a heavier crop than spring wheat by about one-third, calculated on an average of a number of years. If the stand, for some cause or other, should show up poor in the spring there is yet plenty of time to turn it under and plant another crop of something else.

There is some difference of opinion as to the best time to plant winter wheat. The writer and some of the largest growers prefer August, while others plant in September; but it is generally acknowledged that September wheat has insufficient time to cover the ground and become established before winter.

Thirty pounds to the acre is plenty to plant. There are no weeds to bother it and it stools according to the season—it adapts itself to circumstances. Where it has plenty of room and the season has been wet as many as sixty stalks have been counted to a single crown produced by one grain.

Rye is also a good crop on the fallow, will stand more drouth than wheat and will germinate better late in the season. It can be planted any time before the holidays. If planted later it may not germinate in time to get frosted down and when this happens it will grow in a mat and make pasture, but will not head out until it has been through another winter.

Rye is good stuff to run in on corn stubble for a cheap crop of hay, and makes a fair quality of feed, if cut about a week after heading. A second cutting can then be secured which is usually much less coarse than the first.

In the California article on fallowing are given the results of some experiments on continuously cropping the land to grain. It is demonstrated how in a few years the yield will fall to almost nothing and advises rotation.

In every state of the Union are thousands of acres that have been grained to death and thousands more which will no longer raise wheat and are now being finished off with barley and oats.

A good rotation on the dry farm is corn, beans and wheat. A better one would be sweet clover, corn, wheat and beans. Wheat generally yields more after corn or beans on account of the cultivation which develops mineral plant food, of which this crop needs a plentiful supply.

MYERS COG GEAR SPRAY PUMPS Are Easy To Operate

For perfect maturity and increased yields of all fruits and vegetables, destroy the numerous enemies which attack them by spraying early and often with a MYERS SPRAY PUMP. Here is real protection — the kind that produces results and pays for time and effort expended for MYERS SPRAY PUMPS have been developed to meet the needs of all fruit growers and gardeners, and others who raise fruit or vegetables on the home lot. Large capacity Power Pumps and complete Power Rigs — Medium Capacity Tank and Barrel Outfits — Small Capacity Bucket Pumps and Atomizers, and a complete assortment of Nozzles and Accessories make up the Myers "Honor-Bilt" Line. Speed, ease of operation, correct and economical application of mixtures, better construction throughout with many patented features are Myers Talking Points.

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Myers Handy Portable Sprayer has Cog Gear Pump, Heavy Galvanized Tank—holds 12½ Gallons—Steel Frame, Single or Tandem Wheels, 15 ft. Hose, 8 ft. Extension and Vermorel Nozzle, suitable for inside or outside spraying.

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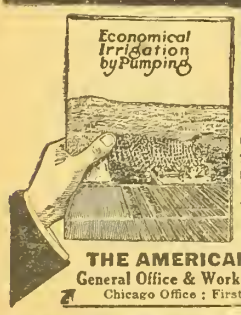
How to Increase Your Crops And save them from drought every year.



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Give the world the once over

LISTEN, fellows, to some straight talk. Many a man when he gets to be 40, *misses something.* He may have lots of money, and a fine family but—

He never "got out and saw things". After he gets settled down, *it's too late.*

Every man wants to see the world. No man likes to stand still all his life. The best time to TRAVEL is when you're young and lively—right NOW!

Right NOW your Uncle Sam is calling, "Shove off!" He wants men for his Navy. He's inviting *you!* It's the biggest chance you'll ever get to give the world the once over!

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located near thriving towns, good markets, railways—land of a kind which grows **20 to 45 bushels of wheat to the acre.** Good grazing lands at low prices convenient to your grain farm enable you to reap the **profits from stock raising and dairying.**

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—low taxation (none on improvements), healthful climate, good schools, churches, pleasant social relationships, a prosperous and industrious people.

For illustrated literature, maps, description of farm opportunities in Manitoba, Saskatchewan and Alberta, reduced railroad rates, etc., write Department of Immigration, Ottawa, Canada, or

WESTERN CANADA Farm Lands at Low Prices The Wheat Belt of America

K. HADDELAND
Dunn Block Great Falls, Mont.
Canadian Government Agent.

Breaking the News.

Little Dot—Mamma, I was playing with your best tea set while you were away and when you bring it out for company you'll be shocked, 'cause you'll think one of the cups has a hair in it; but it isn't a hair, mamma.

Mamma—What is it?

Little Dot—It's only a crack.—Blighty (London).

Value of Summer Fallow.

The proper making of a summer fallow is one of the important processes in the production of larger crops of grain. It has been found by Gilmore and Mackie that a summer fallow properly made accomplishes three ends: It conserves moisture through the prevention of weed growth and improvement of the physical condition of the soil. It renders nitrates available, and it prepares the land for planting at the proper time. Perhaps the last is the most important object accomplished. To produce these three objects the fallow should be properly cultivated to the end that a good surface mulch be secured, the weeds killed, and the moisture be conserved and evenly distributed through at least six feet of soil.

Plot.	1914	1915	1916	1917	1918
.....	Wheat, 30 bu.	Peas	Wheat, 44.67 bu.	Peas	Wheat, 52.33 bu.
Check	Wheat, 35 bu.	Wheat, 15 bu.	Wheat, 21.67 bu.	Wheat, 30.60 bu.	Wheat, 25.5 bu.
.....	Peas	Wheat, 18.60 bu.	Peas	Wheat, 39.33 bu.	Peas
.....	Wheat, 24 bu.	Vetch	Wheat, 54.33 bu.	Vetch	Wheat, 51.66 bu.
Check	Wheat, 22 bu.	Wheat, 12.16 bu.	Wheat, 29.55 bu.	Wheat, 27.33 bu.	Wheat, 25.5 bu.
.....	Vetch	Wheat, 15.92 bu.	Vetch	Wheat, 36 bu.	Vetch

Preliminary studies have shown that a properly cultivated fallow contains at the close of the season about three times as much soluble nitrogen in the upper two feet as an uncultivated fallow or one growing weeds. This advantage has been well illustrated in a series of field plots at the University Farm, where 44 bushels of wheat and 76 bushels of barley per acre have been produced during the somewhat unfavorable season of 1919.

Continuous Cropping to Grain is Detrimental.—Investigations still in progress corroborate and emphasize the results gained in previous years, that continuous cropping will lead to unprofitable yields. Gilmore reports that the yield of wheat plots at Davis continually cropped has gradually declined during a series of years, the rate of decline varying somewhat according to the seasonal rainfall. Thus in a series of trials just concluded the yield of wheat on plots continuously cropped for five years declined from 48.2 bushels per acre to 11 bushels per acre. Possibly this rapid decline has been influenced to some extent by unfavorable seasons, but the results of general observation leave no doubt that rotations, green manuring, clean summer fallow, and the diversification of crops, on the same land are essential to the maintenance of the crop-producing power of our non-irrigated lands.

Since the major portion of the improved land of California is cropped under a deficiency of rainfall, the importance of maintaining an optimum organic matter content and suitable moisture relations is strongly emphasized.

In contrast to the figures above it should be noted that the yields of three plots alternately in wheat and fallow were as follows, for the years 1914—16—18, respectively: 15.8 bushels per acre, 48.44 bushels per acre, 44.61 bushels per acre. It is believed, however, that alternate grain and fallow will not indefinitely maintain good yields, but that a cover crop will have to be grown occasionally in order to maintain the organic matter content of the soil.

Grain After Legumes Turned Under.—Gilmore and Madson report that the importance of maintaining a favorable amount of organic matter in the soil is emphasized by the results for several plots in the rotation experiments, as shown in the above tabulation.

These figures represent yields for alternate years, but considering that the seasons, except 1915, have been unfavorable for high yields the records are significant as bearing both upon the influence of legumes on yield, as well as upon the maintenance of yields through adverse seasons. These figures should be compared as to annual yields rather than the total yields through the entire period. Other long continued experiments show that continuous cropping to grain results in unprofitable yields and the processes of restoring such yields are long and expensive. The amount of dry matter in the legumes plowed under was about 1,000 pounds per acre.—California Experiment Station.

About Water Witching.

Western Farm Life:

In your issue of April 1 on page 15, caption "Water Witching a Superstition," I do want to register a decided objection. I will allow that water witching, like spiritualism, offers a very fertile field for fraud and an excuse for some faker to humbug a victim and separate the victim from a few shekels and to lose a lot of hard work, as well as cause the victim to lose faith in a thing that if honestly tried by a party who has the faculty or temperament, magnetism (call it what you will) of a person who will play fair, can do the party wanting water a great benefit by showing where to bore or dig and get the water, instead of prodding around digging dry holes all about the farm and getting no water in the end and so giving up and thinking there is no water to be had on the lot.

This did happen to my neighbor, he dug at a hole for an open well away 15 or 20 feet deeper than he expected to get water. But it was a dry hole. His mother was a "water witch" and came around with a forked stick, told him he had missed the water about 4 feet; that if he had dug so deep 4 feet from where he did he would have gotten plenty of water. He measured down in his dry hole the distance his mother said, took an auger and bored through the 4 feet, the water came out the auger hole, filled his dry hole, and he had a good well for the ten years I staid in that country.

My experience was: Got water witch to work his forked stick for me. He said, Here is water close to the south line of my lot, but no more along here. I got him to trace the stream off into the pasture, I sticking stakes along the course. Then to prove that he was right, I got another "water witch" to witch for me over the same ground traveled by the first witch. This witch found a stream near the north line and said no more water along there. So he traced the stream to the pasture and I set marker stakes out in the pasture. The two lines of marks crossed. I marked the crossing with a brick and got the well man to come and bore me a well, having him bore just where I had put the brick.

At about 25 feet we struck water, a good strong stream, 10 feet water in the hole. Mr. Wellman then said, "You have a good well, you'll never pump that dry." I told him not good enough for me, go deeper. "But I am down on the rock," he objected. I said, "All right, go into the rock, punch her down." So he got a rock drill and into the rock two or three feet and his drill dropped a foot and a half. The water came up and out the top of the well. Evidently both witches were right, for I got two streams. But if one witch did not find the stream the other did. I explain for myself, that one was positive and the other negative magnetism. But the one thing I am satisfied about, I got the two streams and not faked by either.—A. A. Weston, Julesburg, Colo.

If in need of advice, ask Western Farm Life Service Bureau.

An Aid to Milking.

Haven't you often lost your temper when a cow switched her tail in your face while you were milking her? A Wisconsin dairyman, who nearly lost his sight in this way, discovered that tying a cow's tail annoyed her so that she lost 25 per cent in milk production.

Being of an inventive turn of mind, he strung a wire from one end of his barn to the other at a height about two feet above the place where his head would come when he was sitting on the milking stool. He then made a board panel about four feet long and two feet wide. At the top of this, two screw-eyes were attached. In these, the wires were inserted.

As he moves from on stanchion to another he moves the board with him. When the cow switches her tail, the tail strikes the board and does not hit the milker at all. This also protects him from the tail of the cow behind as well.—System on the Farm.

Keep the Cans Busy.

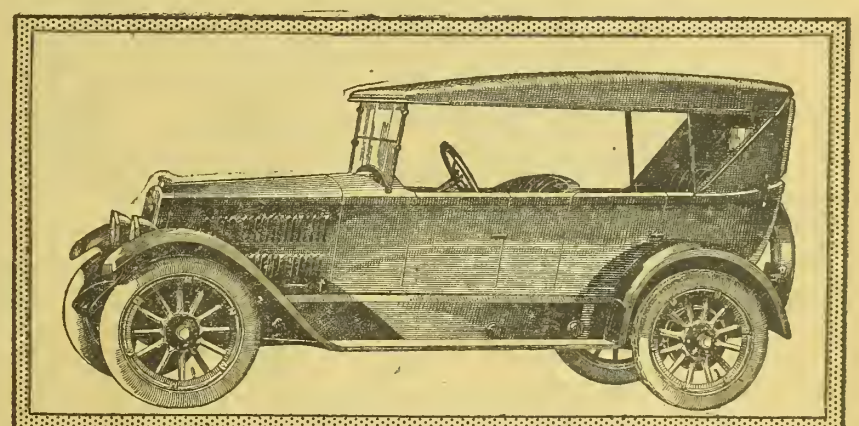
It seems hard on the cans to keep them so busy all the time, but we know women who are canning meat from the last butchering this spring to use during harvest next summer, and then those same cans will have to go right on and "contain" some of the last fruits and vegetables. Isn't it awful to make them work so hard?—E. D.

"Built to stay new"

—A four-year-old Mitchell idea brought up to date

ONE of the Mitchell contributions to motor building was the idea of constructing a car of lasting newness. It came out about the time Mitchell was fighting the sudden craze for over-lightness.

In the New Mitchell, although it brings advancements in style and efficiency, we retain all those qualities that bring sturdiness and long life. We've learned new ways to add permanence.



This means that in the New Mitchell you not only make an initial saving, but you save thereafter.

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No man who values the purchasing power of his dollar can afford to overlook such Mitchell offerings.

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THE New Mitchell has been out for months. Thousands are telling their story of satisfaction, the country over.

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While we are striving prodigiously, we cannot keep up with the growing demand. So we advise early investigation and comparison. Go to a Mitchell dealer now. He will be glad to point out Mitchell superiorities.

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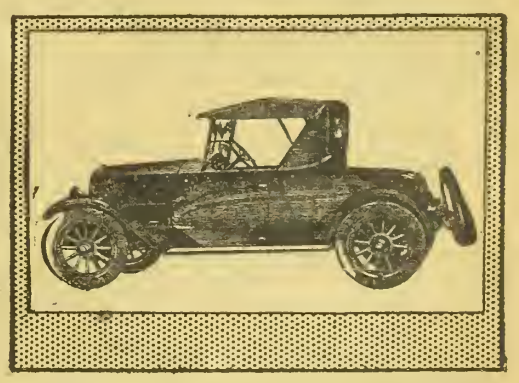
The New Mitchell is presented in a 5-passenger Touring Car, a 3-passenger Roadster, a 5-passenger Sedan and a 4-passenger Coupe. Each is mounted on the famous Mitchell chassis. Each is the latest in body design. Such fine bodies will surprise you, when you make comparisons. The finish is of the finest. Every attention has been paid to details.



MITCHELL MOTORS COMPANY, INC., RACINE, WISCONSIN

Combatting Russian Thistle.

The following letters from farmers contain practical suggestions for eradicating the Russian thistle:

I have just been reading the article in the April 15 issue of Western Farm Life containing the Russian thistle. I believe the best way to control this pest, also all other weed pests, is to prevent their maturing. This, of course, is much easier done with cultivated crops than those not cultivated. As is well known, the Russian thistle thrives best in a dry year, therefore is much worse where there is no irrigation, but is by no means confined to dry territory. Where fall wheat is planted or very early Spring wheat, this crop is usually ripe early in the summer and should be hauled off the ground as soon as possible after cutting. Usually at this time the Russian thistles are not matured and the ground should be disked immediately if the weeds are not too large and numerous and then the ground may be plowed, providing there is enough moisture in the soil to turn it up the proper depth.

If the thistles are too large and thick they should be mowed and raked at once, then in a few days may be burned. If farmers as a whole would adopt this method, I believe it would materially check the spread of this weed.

The cultivated crops and wheat should be planted in preference to oats or other later grain on land where the thistle is apt to be the worst. As with the late grain crops the stand is sometimes thin, allowing the weeds to grow thicker and also plenty of time to mature before the grain is ripe.—J. W. Perryman, Englewood, Colo.

* * *

In answer to your article, "Who'll Drive Out the Thistle": I suppose the Colorado farmer will just have to wait for nature to do the job. Along in the early nineties when the thistle first invaded western Kansas we sure thought our game was up. At that time or just previous to that we were reading in the papers of how some counties in the Dakotas were erecting thistle fences to keep the pest from blowing across from the other counties. But in the end we all got seeded down with the pest. Then as dry years came on we got to putting them up as hay to rough the cattle through the winter, and if the thistle comes thick in the stubble and runs up 10 or 12 inches high without many side branches on them they make fairly good feed even after the seed is well matured. Where they grow thin on the land and assume the tumbling weed shape they are worthless for feed. But to return to the eradication of them, they will finally die out of their own accord.

We are told in the early development of the pest that where they got a certain element in the soil used up they would die out of themselves. But I don't think that is why we here in Sherman county, Kansas, do not have the thistle any more, for if that were true they would be as bad on new breaking as they ever were, but they are not, and for the last four or five years we have not been bothered much with them; at least not as bad as we used to be some twenty years ago. So I would say to the Colorado farmer, live in hopes, even though you may die in despair in the meantime. When we first settled in this western Kansas we had the tumbling weed, the hog weed, or "red root," as some call it; then the thistle. Now it is mare's tail, lambs' quarter and the tickle grass. So I would say, don't give up the thistle, it will finally die out.—J. A. Corkill, Goodland, Kan.

* * *

I certainly agree with A. T. S. in his comments on the article taken from the Breeders Gazette. The value of the Russian thistle as a forage crop is so small that it should not be compared with the damage done by allowing the weed to grow and take moisture that is needed to grow grain crops.

I believe that the Russian thistle takes as much moisture from the cultivated land as all the crops grown on the plains of eastern Colorado. I have farmed on the plains for several years and like many others have not kept the weed down as I should, but am going to try to do so in the future.

My idea would be to double disk all the land that is to be put into crop as early in the spring as possible. This will start the thistle; also keep the ground from drying out until later when you should plow, turning under all weeds that have started. If the land is planted to corn it should be cultivated sufficient to keep all thistles out of the corn. If the acreage has to be cut down do so rather than let the thistle take the corn. If the land is to be put into fall wheat double disk and harrow enough after plowing to keep thistle down until seeding time. It may also be necessary to disk the land several times in summer and fall after the wheat is cut off. I am certain that if the Russian thistle were not allowed to grow the yield of grain crops per acre would be doubled on the plains.—H. L. P., Brighton, Colo.

* * *

The issue of April 15 is a dandy. The article on hogs by Mr. Schilling is just what I wanted. I am trying the same thing here. The one by F. D. Farrell on Great Plains Agriculture is the best I have read in a long time. We came here and tried grain farming for a living and couldn't make it. Now we are in highgrade Hereford and Durocs and are making a little. You ask for a solution of the Russian thistle pest. We found spring plowing, and harrowing often, is the best in cultivated land, but as about 90 per cent of the plowed land is not cultivated now I think it must be grazed off. It makes cows too washy at breeding time, so I think sheep would be better as they are bred in the winter. The thistles make lots of milk and ewes ought to raise fine lambs on such pasture, and by grazing close till frost there wouldn't be any weeds to blow off and tear down fences. In time the grass will reclaim the field. I am intending to get sheep next fall and try this unless conditions change.—Marian A. Barlow, Sugar City, Colo.

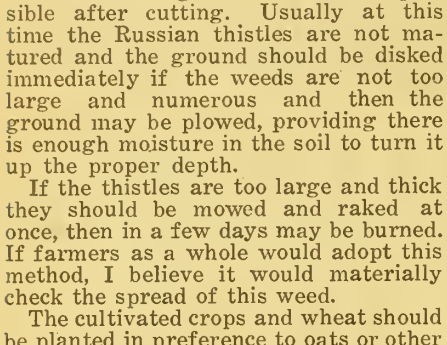
* * *

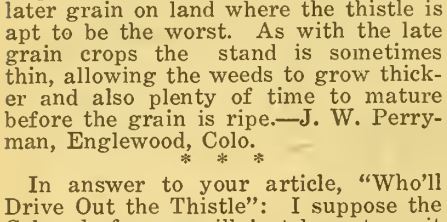
I see in Western Farm Life you are asking for the farmers' ideas to get rid of the Russian thistle. Here is mine: First is to plow a fire guard around the field and when it is still and dry, burn off good and plant all clean seed. Run it over a window or door screen and fine seed clean in a flour seive. I know this is a sure way, for I have tried it. I think everybody should be compelled to clean them off every year as they do more damage than good tearing down fences, and it doesn't do any good for one person to clean and the rest not, for some are bound to blow across the fence and seed your ground. We have taken Western Farm Life for about five years and like it fine. We always find some good in every paper.—Wm. Best, Rozet, Wyoming.

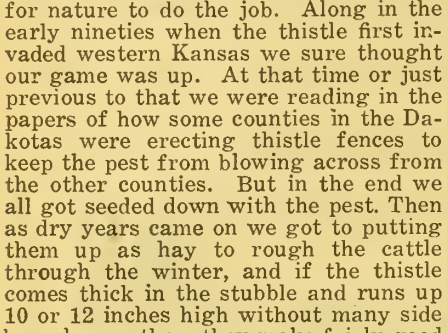
* * *

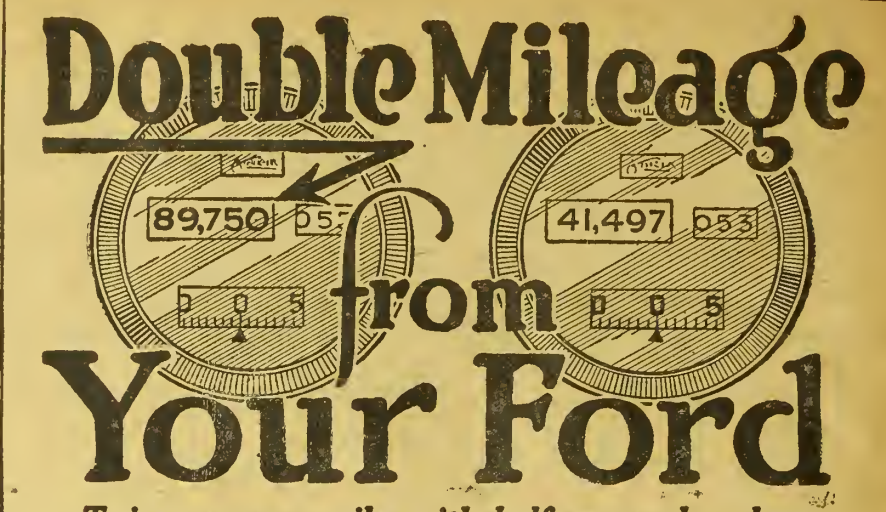
In the first place, the pest was imported with some seed from Russia. Our government sent agricultural specialists to foreign countries to secure seeds of all kinds to improve our conditions. These men carelessly imported seed of all kinds including the thistle, and now these experts don't know what to do! We, the farmers, are not to blame for this, for we all believed in their knowledge. So we shall call on the government to rid the country of what they allowed to become a pest. These county agents are young, inexperienced men and a mighty small help to the farmer. They expect the farmers to flock to town after a hard day's labor, say about 14 hours a day, and listen to the young, inexperienced boy that has never done a real day of farming. These meetings extend well into the night. What are the results? No attendance after a few meetings. Now if these county agents would go out and study the farmers' conditions once in a while they might learn something.

The season of 1919 was sure a thistle season. I had 20 acres in fall rye for hay and after the hay was removed from the 20 acres not a thistle came into appearance. The rye had completely killed the thistle. On the other hand









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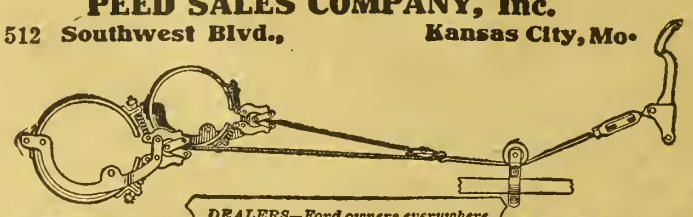

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Meeting the Demand

Meeting the demand for more efficient telephone service is just as difficult as meeting the demand on any other public concern—whether it be an over-crowded grocery store, a popular ticket window, a bargain counter or anything else where supply is running short.

Conditions are unusual throughout the entire manufacturing, mercantile and domestic world. Deficiencies in telephone service which have been quite obvious for some time are directly due to these abnormal conditions.

Materials are scarce—manufacturers are not able to meet the demand—telephone supplies cannot be had—the war diverted all activities in other directions, and they are just beginning to come back. Until the normal level is struck, there is bound to be shortage of supplies and this means unavoidable deficiencies.

The telephone service is probably no better or no worse than the general average of the business and domestic routine.

The telephone management is in a vigorous campaign to get its service back to the old standard of speed and accuracy. Patience and co-operation on the part of the public will greatly aid in bringing about mutual satisfaction.

THE MOUNTAIN STATES TELEPHONE & TELEGRAPH CO.

the land adjoining the rye was full of the pest.

Now if the same government that had this pest imported would take steps to remove it they can do so by giving the farmers a fair return for his work on all cultivated land seeded to rye for a couple of years east of the Rockies as far as the Missouri river. In this way we could exterminate the thistle seeds and the pest is removed. It is a tremendous job but it pays, for the world needs the foods that should be raised where the thistles now grow.

The farmers came to the rescue of the nation during the war. Why does the government not come to the rescue of the farmer? In the end the nation would benefit by it. If the government takes hold of this pest it can be worked out alright, but it can never be done by any other method. Now what is a wonder to me is the way these county agents stick around the town halls and afterward complain because they can't do a thing. Why gents, Dr. V. T. Cooke has done more for Laramie county in one week than the county agents have done in three years. Let the government take hold of the matter, for under government control the pest can be handed. Let them spend the money in a sensible way instead of letting young, inexperienced county agents stand around the towns. There is no farming done in town that I know of.—Daniel Meetz, Egbert, Wyo.

* * *

Mr. Meetz is mistaken when he attributes the introduction of Russian thistle to government agriculturists. There are two explanations of the way this pest came to America. One is that Russian Mennonite immigrants brought it with their wheat seed into Kansas during the seventies; the other, that it was brought by Russian immigrants with flax seed to South Dakota in 1880. Both explanations are probably correct. —Editor.

New Demonstration Agent.

Miss Jane Snow, who was recently appointed home demonstration agent for El Paso county, succeeding Miss Mary Coliopy, has had a wide experience and splendid training for her work. She was brought up in Illinois and is a

Miss Jane Snow.

graduate of the Illinois State Normal and of the Lewis Institute at Chicago, her education having fitted her for a teaching career with domestic economy as her special branch. She taught school in Colorado several years and was in charge of the domestic economy department in a school at St. Regis, Mont., when appointed to the El Paso county position. She found a warm welcome among the farm women of that county and her ability and experience as an organizer have been apparent right from the start. She is ably filling the place left vacant by the resignation of Miss Collopy, who retired from the work because of ill health.

Sugar Beet Acreage.

Colorado's sugar beet acreage for the present year is estimated at 243,783 acres. Reports from the Great Western Sugar Company show that company to have contracted for 183,783 acres in the state. The Holly Sugar Company reports 18,000 acres contracted in the Arkansas valley and 17,000 acres on the Western Slope. American Beet Sugar Company reports a total of 25,000 acres contracted, all of which is in the Arkansas valley.

The total acreage reported by the Great Western Sugar Company for their entire territory is 278,673 acres, as against 265,952 acres contracted in 1919. Following is the Great Western acreage by factory districts for the present year and for 1919:

	Contracted 1919.	Contracted May 1, 1920
Eaton	18,842	19,004
Greeley	16,691	18,228
Windsor	14,504	14,245
Fort Collins	21077	19,574
Loveland	14,377	12,760
Longmont	26,574	24,502
Brighton	22,439	18,793
Sterling	23,314	25,761
Brush	14,231	16,341
Fort Morgan	12,457	14,575
Colorado District	184,506	183,783
Mitchell	.....	6,405
Scottsbluff	27,690	28,588
Gering	17,875	20,413
Bayard	14,508	18,737
Nebraska District	60,073	74,143
Billings	14,452	15,313
Missoula	2,777	.....
Lovell	4,144	5,434
Montana District	21,373	20,747
Total Great Western	265,952	278,673

Western Farm Life: Enclosed find one dollar for subscription to Western Farm Life for two years. Also Simplicity Income tax service set. I take several farm magazines but they are all published in the east. After reading a copy of Western Farm Life, I have concluded that it is a real magazine for western farmers and ranchers.—Alva B. Yoast, Dunkley, Colorado.

The Dairy Farmer's Alphabet.

By Catharine Seymour, a student at Colorado Agricultural College.

A is for farmer, the Ambitious kind
B is for Barn on his farm that you'll find.
C means the Cows by which he will climb,
D to Dairying heights in a very short time.
E is the East he will have his barn face,
F is the Feed which he grows on his place.
G is the Grain that puts fat in the milk,
H for the Hides that are sleeker than silk.
I for the Increase he gets from his stock,
J is his Judgment on calves for the block.
K is the Knowledge he has of his fields,
L is the Land which returns double yields,
M the Manure he knows his soil needs.
N for the Nutriment grown from the seeds.
O is the Orders he soon has to fill,
P is the Price that is shown on the bill.
Q stands for Quirks in the mixing of feed,
R for the Ration that meets every need.
S is for Succulent Silage we know
T is for Triple the normal milk flow.
U for the Udder that's shapely and full,
V for Vitality in the herd bull.
W for Wallet, you'll need one, don't doubt it,
X for the Ten-Spot, no more you're without it.
Y is for You to whom this appeal,
Z ends my story, now go it with Zeal.

Logan County Breeders Organize.

Another breeders' association was formed recently when the breeders of registered stock in Logan county met and perfected an organization. Geo. B. Morris of Fleming was elected president, James S. Weeth of Peetz vice president, and P. N. Quist of Iliff secretary-treasurer. The executive committee elected are: H. A. Lambert, horses; N. P. Keim, cattle, and A. J. Wixon, hogs. They are planning on issuing a livestock breeders' directory listing all of the breeders of the association.—H. A. L.

If in need of advice, ask Western Farm Life Service Bureau.

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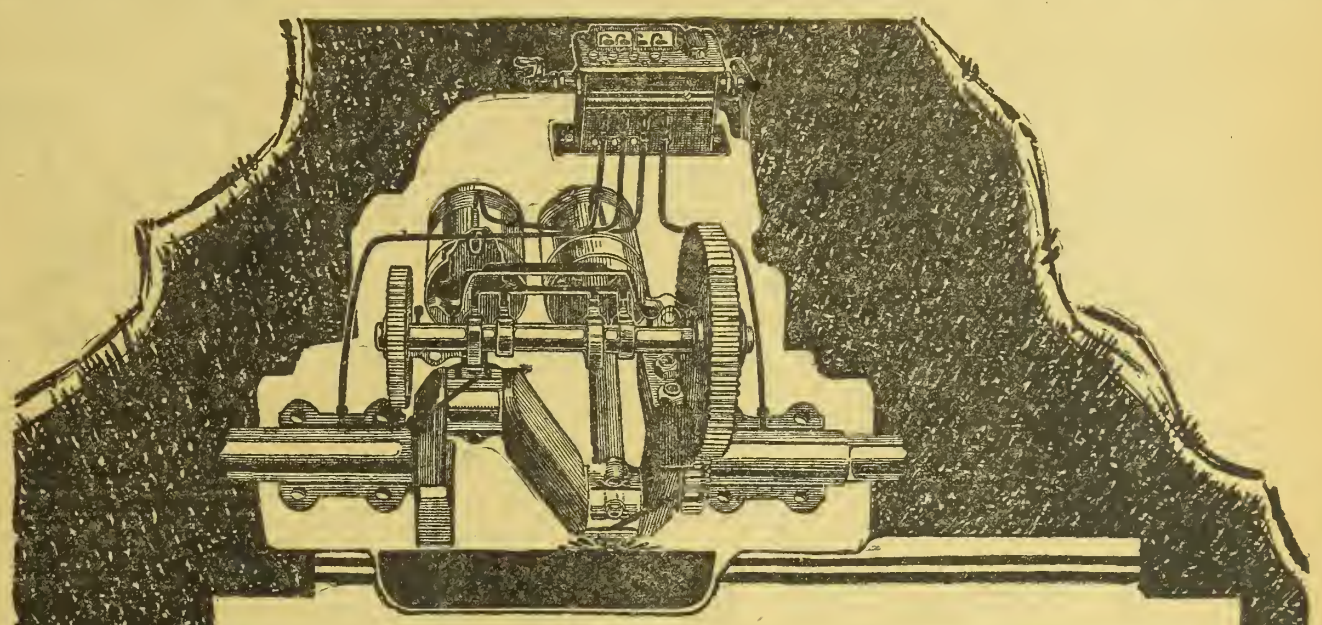

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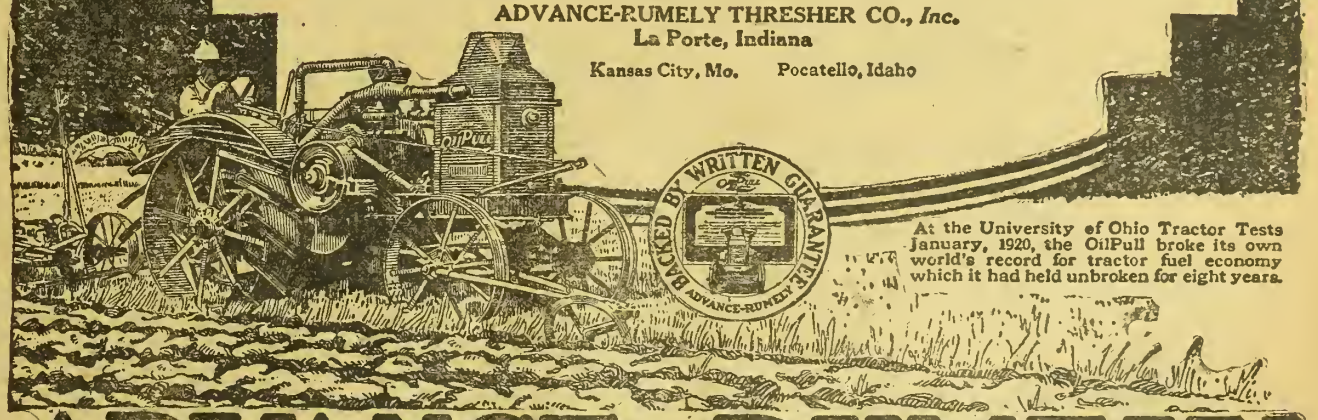

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ADVANCE-RUMELY

The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Work.

What are we set on earth for? Save to toil;
Nor seek to leave thy tending of the vine,
For all the heat of the day, till it decline
And Death's mild curfew shall from work assoil.
God did anoint thee with His odorous oil,
To wrestle, not to reign, and He assigns
All thy tears over, like pure crystallines,
For younger fellow workers of the soil
To wear for amulets, so others shall
Take patience, labor, to their heart and hand,
From thy hand and thy heart and thy brave cheer,
And God's grace fructify thee to all.
The least flower with brimming cup may stand,
And share its dew drop with another near.

—Robt. Browning.

What's Our Vote Good For?

Little, little old Delaware has gone and done it to the hopes of a lot of our national suffrage supporters—for they did want to help select our next executive and now it doesn't look at all possible. But thank goodness, most of the feminine readers of Western Farm Life don't need to trouble with the doings of so small a state as Delaware in the matter of "allowing" them to cast a ballot, and they can take a very real and vital interest in who's going to be who after next March 4th. It's a pity that the oversupply of presidential timber couldn't be used to make better and more reasonably priced homes, for that is what the women had much rather bother about. But by the time our national conventions have had seventeen different kinds of heart failure in selecting candidates out of the mass, it will take the calm vote of our western sisters to help straighten things out after all, and select a president who will really preside.

The country is entering upon a new era. Men and women with old habits of thought, beyond the power of readjustment, will no longer be tolerated as leaders. Our new leaders must be equal to our changed conditions. We had hoped that there would also be an influential class of new voters.

The men have the old habit of demanding that relief come from the government rather than from themselves. The political machinery seems to be making a deplorable mess of the new issues with their out of date gear.

The result is confusion, and public opinion is shattered and uninformed. The right of some of us to vote implies the duty to do so. If we neglect the duty to vote, we forfeit our right to complain of the results. If we do not take active part in the fall elections and so allow the old partisan influences to return, we will have no right to feel aggrieved by the manner in which our schools are administered, our prohibition law enforced nor immorality developes.

As for national and international problems, we women know well that a hungry man is a potential criminal, and that a hungry nation is dangerous. We fully understand agriculture's place in solving the problem.

So Delaware after all can't be blamed if the nation goes astray in its voting this fall. We have faith enough in the men of the nation that it wouldn't absolutely, and yet they may get sidetracked. We had better keep posted on how things are going and take a hand—for the government as it is, as it was and as it should be is a personal responsibility facing women as well as men. For goodness sake don't quarrel with the man of the house about how the family vote should go—but don't let John do it either. They are your officers as well as his to be elected this fall and yours the right to cast a vote.—E. D.

What Mary Wants.

Dear Sarah: This letter ought to have a perfect Rosary of a beginning. "The hours I've thought of thee dear heart are as a string of pearls to me, and the barren gain and bitter loss" I've had in taking no time for writing you letters. But your wee namesake is much more demanding than big Sarah ever was, I know. All her tummy troubles she has had these first six months of her life have come from your just suggesting the ice cream cone stunt. She has had indigestion ever since at the mere thoughts of having to learn to "lick efficiently without smearing a hair," as you so horribly said. Now in order to square yourself with her and me you must send me the name of that "child feeding" book upon which your Mary has safely arrived at the age of such gastronomic achievements as popcorn balls and lemonade. And when did you say orange juice was recommended? I can't find anything very definite about it.

I don't mean that wee Sarah is a puny wailing thing; far from it. But she has just enough disturbance to make her somewhat 'agerfretted" and "agrefrettin" at times, and I don't believe in anybody, even a half-year old, being called upon to think too much about her "workin's." And believe me even at six months Sarah has an utter disregard of the demands of gardening, baby chicks or the telephone, if her last received rations have proven unsatisfactory and she craves sympathy. I know things can't be as bad as she tries to make out once in a while, but it does take time to convince her.

All the best books agree that we should begin the baby's training toward reasonable obedience during the first week of its life. True, true, and I try religiously to live up to it—but I wish those authors wouldn't so persistently ignore in their fine sounding paragraphs that some babies have to try out whether you really mean it or not in every form of endeavor they undertake. Sarah is one of that experimental kind.

It sometimes seems as if there never have been babies enough in all the world to try out all the suggestions about care and training we get. And then think of all the Chinese, Hindu, Japanese, Russian, Timbuctoo and Madagascar mothers and imagine trying out the rest of the ideas in all these seven different languages and fifty dialects! Makes my brain whirl.

But there's just one thing I know I'm going to do and that is, keep Sarah outdoors this summer; the way the government bulletins talk about milk, "clean, cool and covered." She's going to have all the air there is, through a screen, for there may be some stray flies around, and if there's one thing I'm plumb afraid of it's flies. When I think of the children and children that go every year with typhoid and summer complaint—directly traceable to flies, I can't see why there's one of the brutes left.

We have manure boxes at the barn, covered garbage pails, fly traps and many screens, and all the food which happens to be left by dogs or chickens is either covered with earth or dragged into a pit. But beside that I have a screened-in play box—painted white, which will be plenty large for baby all summer, which can be set out on a shady spot on the lawn and not a fly can get in. There, preaching enough.

We are just beginning to have a decent garden, things are so late—and our peas haven't begun to bloom—when they ought to have been through ages ago.

My "Rodies" are coming fine—and I have two hundred—anywhere from two weeks to three months old. John says he's going to try capons, but I won't do it myself yet.

Please send me the book name—and any good romper pattern you might happen to have.

Lovingly, MARY.

Injurious Canning Powders.

Some of the books which speak of "painted ladies" in a hushed voice would seem rather old-fashioned now, for there has grown up a certain tolerance of complexions with some additions, especially powder. We are not going to discuss at length the morality, propriety, or excellent effect of using drugstore additions to a woman's attractiveness, but we will say by way of introduction, that the most expert of makeup artists is only trying valiantly but futilely to simulate a color and beauty which nothing but a close following of the best there is in nature can ever produce.

Now we haven't said a thing, except by way of introduction, in this first paragraph to anything we are going to talk about, but in the case of powder, and this isn't complexion powder, but canning powder. The principle is exactly the same in each case, and we are trying to simulate nature's best with means that aren't nature's own, which is the moral to this tale.

Canning powders may not be particularly injurious; mind you, we only said "may not be." Commercial manufacturers are not allowed to use them in most states because of their injuriousness, so why should a home canner try them? At any rate, they do not keep the best flavor in the vegetables, for they are not natural. But here are a few facts concerning one very well known brand.

It sells for 50 cents a package and contains nothing but common salt and a small amount of acid which is not expensive. We say "small amount." It is supposed to be a teaspoonful, but the packages are mixed by children and some of them contain any amount from less than a teaspoonful to a small handful, which shows that the purchaser doesn't know what he is getting.

Last year this company expended for

Have You Heard The Good News?

Pass it along to your neighbor.
Dr. Price's Baking Powder is now produced with PURE PHOSPHATE and sold at about HALF the price charged when the powder contained Cream of Tartar.
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10c for 4 oz.
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The Price is Right

This ends every excuse for buying doubtful baking powder because of so-called cheapness. The quality of Dr. Price's Baking Powder is assured and the price is a revelation in economy.

DR. PRICE'S Baking Powder

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rental, labor, supplies, shipping and everything concerned with the manufacture exactly $15,000. Their sales amounted to $85,000. Even if their product is "not in the least injurious," do you want to help swell their income tax? In many states their product cannot be sold; but unfortunately in Colorado we still cling to the old idea of every man for himself, and so many things are shipped here which are not salable in other states. That's proof enough that some folks think them injurious anyway.

This year in canning vegetables just consider that you aren't interested in canning powders because the vegetables taste better and keep just as well if you'll stick to clean water and heat for the principal preservatives.

New Fashion Service.

All Patterns Now 12 cents Each: Address WESTERN FARM LIFE, Pattern Department, 1518 Court Place, Denver, Colo.

9657. Ladies' Waist.—Cut in sizes 36, 38, 40 and 42 inches bust measure. This dainty blouse adopts the popular oval neck line and trims the collar, front and cuffs with ruffles.

8680. Men's Shirt.—Cut in sizes 15, 16, 17, 18 and 19 inches neck measure. This comfortable negligee shirt can be made with or without a back yoke.

9663. Ladies' One-Piece Apron.—Cut in sizes 36, 40 and 44 inches bust measure. Cut in one with the back and front are the kimono sleeves. The vest of white is set-in.

9645.—Ladies' Dress.—Cut in sizes 36, 38, 40 and 42 inches bust measure. The sleeves are kimono style in this dainty frock of voile. The waist buttons at the back and is trimmed with rows of Val. lace.

9661. Childs' Rompers.—Cut in sizes 1, 2, 4 and 6 years. Suspenders support the shallow waist section to which the full bloomers are gathered. The white waist with turn-back collar and cuffs is also included in the patterns.

9639. Girls' Dress.—Cut in sizes 8, 10, 12 and 14 years. The collar, like the waist, buttons at the back. Side panels give an air of grown-up smartness to this gingham frock.

8716. Ladies' Two-Piece Skirt.—Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. The wide belt which is worn with this two-piece model gives the effect of a deep yoke.

9644. Ladies' Two-Piece Skirt.—Cut in sizes 26, 28, 30 and 32 inches waist measure. Black silk braid and tiny buttons emphasize the interesting trimming features of this skirt.

Our Fashion Magazine.

Limited space prevents showing all the styles. We will send our 32-page fashion magazine containing all the good, new styles, dressmaking helps, serial story, etc., for 5 cents postage paid, or 3 cents if ordered with a pattern. Send 15 cents for magazine and pattern.

"Let's Go to Yellowstone!"

If you've been to Rocky Mountain National park and are yearning for still another camping trip this year, we are going to try another trip this time, and in our sister state to the north—Yellowstone National Park. Aside from the Grand Canon of the Colorado in Arizona, it is probably the best known of any of our national parks. One of our travelogue lecturers used to describe it as "the playground of the gods." We don't meet such celestial travelers often, but it's certainly the playground of plenty of others and if you want to be one of them, you won't miss a large number of thrills and a bit of enchantment you'll get nowhere else.

The first things that one aspiring to see Yellowstone thinks of are bears and geysers, and they are probably the most remarkable when you stop to think of it, for the geysers are nowhere else so remarkable or abundant, and certainly not in America, and bears wild are a relic of days gone by that only very wise legislative action has saved for our imaginative youngsters.

The park has been a protected game preserve so long that the bears know they belong there more than the visitors do. You can't hunt them with anything but a kodak of course, and there are many animals beside the bear to be hunted in the same way; antelope, mountain sheep, deer, elk and the most magnificent of all, the old bison of the great plains.

All the wonderful scenery of lakes, mountains and forests is here in abundance, only more so. Everything is "more so." The lakes are more numerous, the rivers swifter, the cliffs more beautifully colored, and then think of washing handkerchiefs in a natural wash tub of hot water and boiling your breakfast eggs in another pool close by, sitting on a marvelous terrace of many colored rock while it is being done. We can't begin to describe all the wonderful places, but will name some of them for you to see.

"Old Faithful" geyser is perhaps the first. The terraces of Mammoth Hot Springs. Liberty Cap, the Boiling river, and Yellowstone Lake and river are some of the most important. The canon of the Yellowstone river is one of the beauties that has taxed the adjectives of every writer who ever saw it. Kipling has said: "All that I can say is that without warning or preparation I looked into a gulf 1,700 feet deep, with eagles and fish-hawks circling far below. And the sides of that gulf were one wild welter of color—crimson, emerald, cobalt, ochre, amber, honey splashed with port wine, snowy white, vermilion, lemon and silver gray in wide washes. The sides did not fall sheer, but were graven by time and water into monstrous heads of kings, dead chiefs, men and women of the old time. So far below that no sound of strife could reach us, the Yellowstone river ran, a finger-wide strip of jade-green. The sunlight took those wondrous walls and gave fresh hues that nature had already laid there."

Yellowstone may be your playground this year, and if it is you'll know that we haven't been half enthusiastic enough about the northwest corner of Wyoming. Here as in Estes, you may hotel or camp with all the enjoyment to be gained from either. But whichever you do, do it right.—E. D.

Western Farm Life:

We find Western Farm Life alive to the interests of Colorado farmers. We would be quite lost without it. We do enjoy Thomas J. Putnam's articles, which are instructive as well as laugh producers, and Clark's Travel Letters are also fine.—Mrs. H. H. Briggs, Timpas, Colo.

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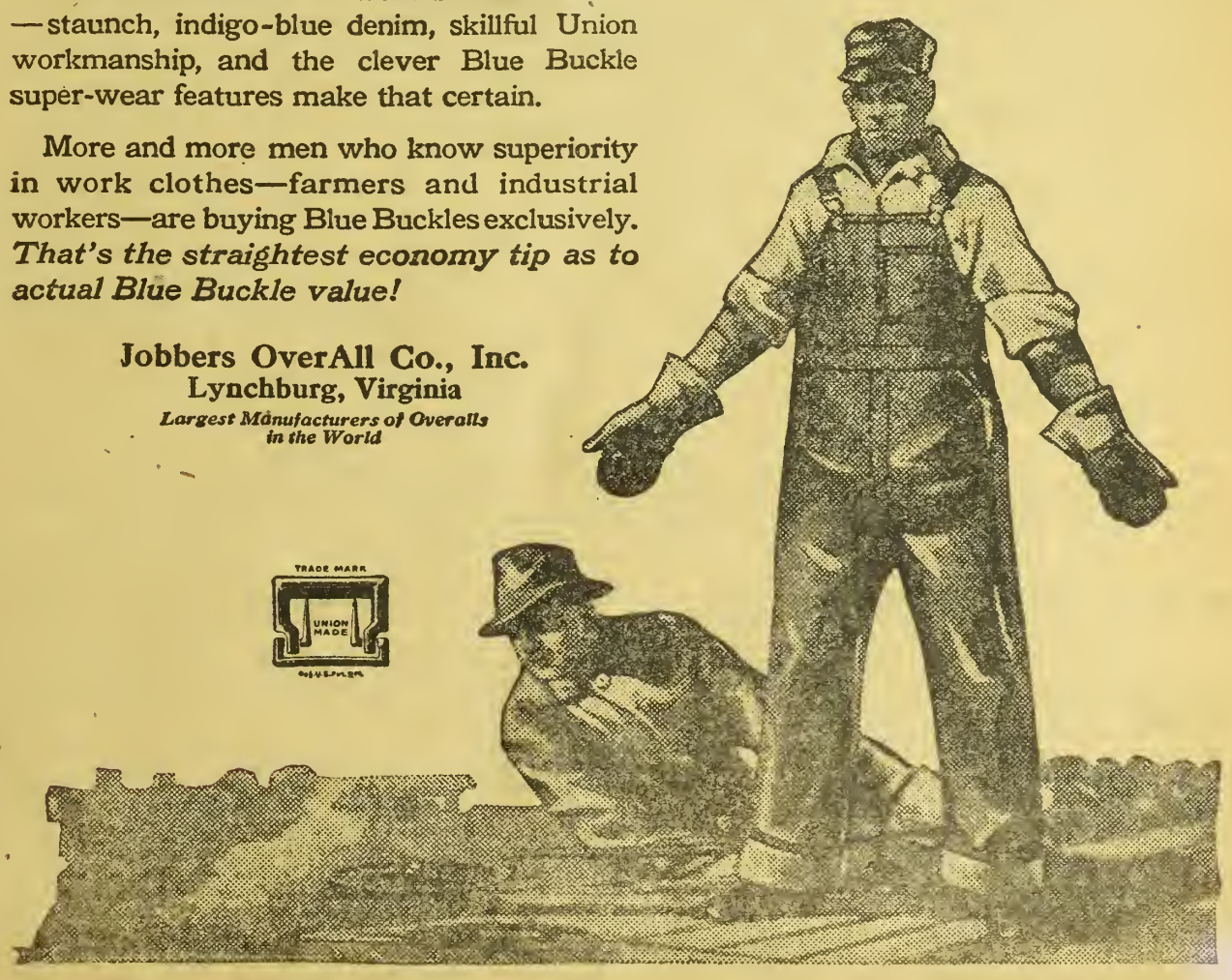

Profitable Farm Poultry

W. E. VAPLON.

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, Western Farm Life, Denver, Colorado.

Some Surprising Egg Figures.

Through the courtesy of the Colorado Office of Markets we are able to present to our readers some interesting egg figures. The report given us shows the number of eggs shipped into Denver each week during the year beginning April 1, 1919, and ending March 31, 1920. Knowing, however, that our readers are very busy people just now, we are giving only the monthly shipments:

1919—	Cases.
April	26,154
May	25,784
June	15,098
July	12,529
August	13,355
September	9,445
October	5,076
November	2,486
December	2,386
1920—	
January	5,784
February	6,927
March	9,997

Total for 12 months, 135,021 cases, 4,050,630 dozen, 48,607,560 eggs.

There is something very surprising in these figures; cover with a ruler or piece of paper the last three figures of the whole column; you now have 26 for April, 25 for May, etc.; let us take these figures all the way through for the number of eggs laid per hen during the year. The total is 129, a pretty good number. If you have kept tab on your egg yield for a number of years you will find the figures not far off, on an average. Perhaps your hens laid less from August 1 to February 1 and more in February, certainly more in March, but the lesson we get from the shipments is the certain, rapid decline in egg production beginning in June and the great shortage of fresh eggs for about six months. If the shipments in March were a criterion of eggs laid, this would be very surprising. As a rule the egg yield in March is about the same as that of April, both months being higher than that of May.

If, as has been estimated, each person eats 200 eggs a year, the eggs shipped to Denver are just about enough to give every Denverite his allotment; of course, the tourist and visitor get none. Wonder how many of these eggs are produced in Colorado, and how many Denver people supply themselves and their neighbors? A few years ago Colorado was supplying about half the eggs consumed; she ought to do more than that, but we doubt that she has kept pace with the increase of population.

Poultry Dip Grafters.

Farmers have reported to Pren Moore, poultry specialist of the University of Idaho extension division, that men selling an expensive poultry dip in various parts of the state have left the impression that they were representing the Idaho State Poultry association and that they were distributing this preparation and giving free advice on poultry as a public service.

Farmers are urged by Mr. Moore to understand that the Idaho state association is not in the mercantile business; that it has no such representatives with anything to sell, and that they can get all the information on poultry they need without buying any expensive preparations, simply by applying to their county farm bureaus for services already paid for by the taxpayers of the state.

Farmers have informed Mr. Moore of the appearance of agents who "go into people's flocks, giving advice regarding housing, feeding, diseases and every other phase of the poultry industry. They claim to be doing this as represented to me by a number of farmers throughout the state, as a public service.

"Incidentally, in the course of their demonstrations, they note, and call to the farmer's attention to the fact, that their fowls are lousy and immediately offer them, 'as a public service,' a dip that they sell and tell them that it is the only treatment that should be used in killing of lice and mites. They charge $5 per gallon. If a good order is taken, they issue a membership card purporting to entitle the holder to free poultry association advice.

"If the farmer states that he uses some coal tar preparation for lice and mites, and asks if this is not a good treatment, he is advised that coal tar preparations never should be used as disinfectants in any way where poultry is concerned, as it causes fowl tuberculosis.

"They make this statement as a public service and they tell the farmers that the selling of the preparation they have to offer is a public service and also that their business is to serve the public, and leave the impression that they are paid by the association to give this information. Coal tar preparations do not cause tuberculosis, but are among the best disinfectants there are for killing the tuberculosis germ."

Turkey Raising in Wyoming.

Eighty strong poults hatched, and eighty turkeys raised to marketable age, is the unusual record of Mrs. C. I. Hawkins, of Robertson, Wyo. These eighty sold for $242.00 to go on the holiday market.

Mrs. Hawkins states that it is easy to raise young turkeys if you feed them properly, do not allow them to become infested with lice and mites, and keep them dry. She feeds at first very sparingly. Where they have good range and are able to pick up considerable natural feed, she gives them a mixture of rolled oats, bread crumbs, and cottage cheese once a day. Chopped onion tops are also given. Where little natural feed is available, feed three times a day at first, giving only a small amount. The crop should never be round and full on a young turkey. When a small, soft mass of feed can be felt with the fingers, he has had enough. When cottage cheese is not available, boiled eggs are given. The young turkeys should be kept away from the chickens and induced to stay out on range as much as possible. A roomy coop is desirable so they may be confined in damp weather. Never allow them to become wet, as they chill very easily. Open water dishes can cause serious results. Lice and mites will prove fatal to poults. The hen should be freed from lice before hatching by at least two applications of commercial sodium fluoride during the incubation period. The coops must be kept free from mites by spraying frequently with good disinfectant. In case lice are found on the young turkeys, a light greasing with vaseline or olive oil on top of the head, under the wings, and around the vent will be effective. This grease should not be used too generously and the young turks should not be allowed to get out into the hot sun after greasing or injurious results may follow.—Niobrara County (Wyo.) Farm Bureau News.

Ridding Hens of Mites.

Please tell me what I should use to rid my chickens of mites, as they are covered with them, especially the hens that are setting.—E. G., Arizona.

We are asking the State Agricultural College to send you bulletins which will explain fully methods of eradicating mites and lice. Mites have the same habits as do bedbugs, sucking the blood of the fowls at night and hiding in crevices during the day; therefore the time to get them is when they have left the fowls and are hiding. We find a weak solution of any coal-tar product good; we generally use a heavy paint brush and go over roosts, roost supports, walls near roosts, nests and everything and every place where a mite might hide. If your hen house is badly infested two or several applications may be necessary, but after a house is once clean, one or two applications a year will keep them down.—W. E. V.

Tonics for Poultry.

I would like to know your opinion about feeding hens tonic to make them lay. If you advise it, what do you consider the best?—F. W. M., Adams county, Colorado.

Tonics and remedies have the same place in the poultry flock as they have in the home. The man who runs to the medicine closet for a dose of something whenever he feels a little pain somewhere will be inclined to keep a stock of cure-alls on hand for all the livestock on the farm; often, and perhaps generally, he will do more harm than good, to himself or stock. The fact that hens are now laying full time shows that four factors are responsible, viz: Maturity, as all young stock is now fully grown and developed; condition, all older stock is through the molt; season, the natural propagating season bringing with it warmer weather, long days, green feed, etc. Tonics and dopes would not help were these things absent, do you think? And with these things present, what need of tonics? Tonics may have their place where fowls are in poor condition, but prevention is better and fowls properly cared for seldom need anything of the kind. Egg producers are a myth, only egg material in the shape of good feeds can "make" eggs.—W. E. V.

Regarding Leghorn Hens.

Which do you find to be the better layers, single or rose comb white Leghorns? Do the single comb freeze badly in extreme winter weather? Is it hard to find a market for Leghorns when one wants to dispose of surplus stock?—R. J. S., Wyoming.

You will find no difference in the laying qualities of the two varieties of Leghorns. The single comb is more quickly frozen. The market usually pays two to four cents per pound more for large hens.

Prevent Egg Eating by Hens.

What would you advise in the case of hens which have acquired the habit of eating their own eggs?—G. P. G., Denver county, Colorado.

I have found only one cure for egg eating by hens. I have tried about everything that was ever recommended. It is my opinion that hens do not wilfully and maliciously and premeditatively and with malice aforethought devour eggs, but that the habit is acquired accidentlly. In fact, I know this is the case. Therefore, again, prevention is better than cure; rather, prevention is cure.

Soft shell eggs become broken in the nest; a good hen always takes a look at the finished product to see if it will pass the censor; curiosity prompts her to take a peck at the broken egg; she likes it, takes more, perhaps drags it out of the nest and the others learn to be naughty.

I have had this trouble in my flocks in a most aggravated form, so can sympathize with you. Dark nests is the cure. It stands to reason that if a hen cannot see an egg she cannot eat it. Make a small entrance into the nests and have them covered to keep out all the light possible. The hens will soon forget the habit.—W. E. V.

Protect the Mash Hopper.

Line your mash hopper with one-fourth inch sand screen to prevent waste. Turn over the upper edge of the wire about one-fourth inch. Hens pull the feed out with their beaks in looking for the ingredients they most prefer; the wire will prevent this. In very few instances have we found hoppers so made as to prevent this waste. Feed is too costly and profits too hard to make to allow waste.—W. E. V.

There is a world of interest in reading ADVERTISEMENTS

This publication is far brighter and more interesting for the advertisements it contains. You get information from them. You learn all about many things that are of so much personal importance in your life. They keep you posted. They tell you what is new and desirable.

Sometimes they keep you from making an unwise purchase by pointing out just the reasons why one article suits your needs better than another.

Reading advertisements helps you to economize. You know that economy is not alone a matter of saving money but of spending money to advantage. Advertising identifies goods of unquestioned value.

When a manufacturer puts a name on goods and tells you about them you may be sure they are worth while because it does not pay to advertise merchandise that is not good.

Make a practice of reading advertisements. Read them as news from the business world, published for your benefit. They will help you to live better and dress better and make more of your income in every way.

LAND OPENING

6,000 acres of Carey Act Land in Green River Valley, Wyo., under authority of State of Wyoming. Water right $25 to $35. Land fifty cents per acre. Free range, access to forest reserve, timber. Terms.
Also improved hay ranches at bargain prices.
FREMONT LAND CO., 114 West 17th St., Cheyenne, Wyo.

We Fix Radiators

AND FIX 'EM "RIGHT"

Honey-Comb Cores installed in automobile, truck and tractor radiators. Write for price list and information booklet.

PARAGON AUTO RADIATOR CO.
1455 Court Place Denver, Colo.

Auto Parts Auto Repairs

Save money on your auto parts, repairs or accessories. We can supply most anything in the line of auto supplies. Mail orders given special attention. All we ask is a chance to serve you. A few automobile motors in good shape. Priced reasonable.

The Western Auto & Parts Co.
1220 Curtis St.—At Speer Blvd.
Phone Champa 4919 Denver, Colo.

PIONEER AUTO WRECKING & METAL CO.,
721-739 W. 13th Ave., Denver, Colo.
Used Automobiles
New and Used Auto Parts for Any Make of Car. Tires, Tubes and Accessories. We have a good line of Trailers.

MOTOR EXPERTS
EARN $100 TO $400 MONTHLY
Learn Auto and Tractor Mechanics in 6 to 8 weeks by practical experience with tools. Largest and best equipped trade school in Southwest. Write for free book, "The Way to a Better Job." It explains everything.
BARTLETT'S WICHITA AUTO & TRACTOR SCHOOL
198 N. Topeka Ave., Wichita, Kansas.

Do you want to know how to increase your crop yield and add to your soil fertility?
WESTROBAC
literature will tell you.
WESTERN SOIL BACTERIA COMPANY,
313 Cooper Building Denver, Colo.

Farmers' and Stockmens' Exchange

Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

PLYMOUTH ROCKS

PURERED BUFF ROCK EGGS, $3 PER 15; PER 30, $5. Barbara Clinkenbeard, Wetmore, Kan.

PUREBRED WHITE ROCK EGGS $2 PER 15; $7 per 100. Mrs. Elsie Holderness, Dillwyn, Kansas.

RINGLET BARRED ROCK COCKERELS, SEVEN weeks old, $1.25 each. Mrs. C. N. Bailey, Lyndon, Kan.

BARRED PLYMOUTH ROCK EGGS FOR SALE, $1.25 per setting of 15; $6.00 per 100. John M. Mischke, R. F. D. 3, Loveland, Colo.

PURE BARRED ROCK EGGS FOR HATCHING —Prize winners; $5.00 for 15. Winter laying strain. E. Plessinger, Cheyenne Wells, Colo.

BARRED ROCK EGGS FOR HATCHING, FROM pens, either light or dark, $3 for 15; from range flock, $6 for 100. Send for mating list. Chester Blunt, Route 1, Greeley, Colo.

LAYMORE BARRED ROCKS—Eggs $5.00 for 15. Baby chicks 50 cents each. Nebraska State Fair and Missouri first prize winners. First in Colorado in profit with over $70 each in 1918. Rhode Island baby chicks, $20.00 per 100. J. R. Anderson & Son, Ft. Morgan, Colo.

LEGHORNS.

PUREBRED SINGLE COMB BROWN LEGHORNS, exclusively. Eggs $1.50 per setting. Incubator lots, 8 cents per egg prepaid. Jacob P. Miller, Fowler, Colo.

RASCALLY BAD LATE SEASON, BUT NOT TOO late for Buff Leghorn chix. You can have winter eggs from hatches to late July. Champney, 2057 S Broadway, Denver.

FARMERS IF YOU WERE BETTER ACQUAINTed with the Buff Leghorn you would have more eggs. Baby chix and hatching eggs now ready. Champney, 2057 So. Broadway, Denver

BABY CHIX—BUFF LEGHORNS MARCH 10TH, weekly hatches after this. Other breeds in any quantity. Book your orders early to avoid disappointment. Champney, 2057 So. Broadway, Denver

BLAKELAND EVERLAYERS, SINGLE COMB White Leghorns. The famous Tancred high-laying strain. Breeding birds, hatching eggs and baby chicks. Place orders now. Quality the best only. Satisfaction guaranteed. Blakeland Farm, Littleton, Colo.

RHODE ISLAND REDS

BEAUTIFUL ROSE COMB REDS. EGGS 30, $3, baby chicks 20c, postpaid. Lucy Ruppenthal, Lucas, Kansas.

ROSE COMB RHODE ISLAND RED EGGS FOR hatching. Big bone, deep red, 100 $7; 50, $4; 15, $1.25. Mrs. Mark Flanagin, Pawnee City, Nebr.

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

LOWER'S POULTRY FARM, ARVADA, COLO., is the oldest and largest breeder of thoroughbred S. C. Rhode Island Reds in the West. Our stock is line bred, from selected heavy laying type for seventeen years. Eggs for hatching, $12 per 100, $5 for 30. Send for catalog and price list of stock and baby chicks.

ANCONAS.

SUNNYSIDE EGG BRED S. C. ANCONAS—THE world's greatest egg machines; they hold the world's record for egg production. Do you raise chickens? Then why not raise the best. Our Anconas are from the best egg-producing strain in the world. We have culled and reculled our flocks until only the best are left, so you may be sure they have the egg qualities bred into them. 90 per cent fertility guaranteed. Eggs after May 15th, $1.25 per setting, $6.00 per hundred; baby chicks, $20 per hundred, 50 or less 25c each. Order at once. Mrs. J. B. Shenk, La Junta, Colo. Box L, R. No. 2.

LANGSHANS.

BLACK LANGSHANS, FARM RAISED. EGGS, 15, $1.50; 100, $8; chix, 20c. Mrs. G.. W. King, Solomon, Kansas.

WYANDOTTES.

PARTRIDGE WYANDOTTES—CHOICE STOCK and eggs. Fred Karre, Cotesfield, Neb.

SEVERAL VARIETIES

BLACK MINORCAS, BUFF ORPINGTONS; eggs; chicks. Frank A. Agnew, Southside, Omaha, Nebr.

S. C. R. I. RED EGGS, $1.25 SETTING, $7 hundred. R. C. White Leghorn eggs $1 setting, $6 hundred. Harry Knoll, Portis, Kansas.

BUFF ORPINGTONS AND SILVER SPANGLED Hamburgs. Orpington eggs $7 hundred, $1.25 setting. Hamburg $1.50 setting of 15 eggs. Leslie Chrestenson, Route A, Akron, Colo.

COLUMBIA HATCHERY—WE CAN SUPPLY you with any quantity of Baby Chicks. We have 14 varieties including all leading breeds. Write for our prices, you will save money. P. O. Box 1102, Denver, Colo.

IMPROVE THE FARM POULTRY AS YOU DO your cattle and hogs. The farmer is beginning to realize that poultry, scientifically bred to egg production, improves the farm flock and increases his profits in these times of dollar eggs. Look ahead a year. You probably need new poultry blood this year and will buy a cock bird to furnish it, but for next year—buy Harr's baby chicks now. Your new blood will cost you nothing. For the price of one good cock I will sell you 100 baby chicks from heavy egg producing stock. Buy these chicks now and next fall you will have plenty of fine cockerels for your own use; also you will have several pullets and the money you can realize on your surplus cockerels will pay the entire expense feed and all. I can offer you ten breeds as follows: Rhode Island Reds, White Leghorns, Barred Plymouth Rocks, Black Minorcas, White Orpingtons, White Plymouth Rocks, White Wyandottes, Buff Orpingtons, Buff Plymouth Rocks, and Anconas. Even tho my flocks contain many prize winners, I can offer chicks at the following prices: Twenty-five chicks, $6.25; 50 chicks, $12; 100 chicks, $22; 500 chicks, $105; 1,000 chicks $200. Order direct from this ad. Full live delivery guaranteed by Parcel Post. I ship by Parcel Post, special delivery and will guarantee live delivery of every chick. Can make shipment within two weeks after receiving order. Send 25 per cent cash with order and balance few days before shipment. Dean Harr, Box G 502, Wichita, Kansas.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HOGS

PEDIGREED HAMPSHIRE BOARS, $20 AND $25. Everett S. Rogers, Stratton, Colo.

BIG TYPE POLANDS—SPRING PIGS FOR SALE at weaning time. Correspondence solicited. Gad Barney, Haswell, Colo.

REGISTERED DUROC JERSEYS—BIG TYPE, choice quality sows, gilts, and March pigs. F. W. Ruppenthal, Lucas, Kan.

FOR SALE—REGISTERED BIG TYPE DUROC Jersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

FOR SALE—REGISTERED DUROC JERSEY pigs of Col and Orion Cherry King breeding; prices reasonable. Geo. S. Turner, Canon City, Colo

FOR SALE—POLAND CHINAS, BIG TYPE BRED gilts, young boars, weaned pigs; all registered and the real big boned kind; prices reasonable. F. L. Toliver Stock Farm, Ft. Collins, Colo.

FOR SALE—THREE DUROC JERSEY SOWS, bred to a son of the Grand Champion at Denver, 1919. Four young boars and one yearling boar. Roy E. Dickson, Route A, Calhan, Colo.

BUY YOUR DUROCS AT WEANING TIME, AND make the big profits yourself. I have prize-winning gilts and boars a few weeks old sired by champions that should be worth several hundred dollars each this year. Write for prices. J. N. Caldwell, Willow Grange Farm, Littleton, Colo.

REGISTERED BIG TYPE DUROC JERSEY hogs. We are now taking orders for boars and gilts of March farrow for May and June delivery. Have one fall boar left. All sired by Orion Cherry King 15th, and J.. O. D. Joe Orion, out of the best berd sows. Write for prices. Money back if not satisfied. J. O. D. Ranch, Aroya, Colo.

CATTLE.

FOR SALE—3-YEAR-OLD REGISTERED AYRshire bull. T. H. Dillon, Jr., Bethune, Colo.

FOR SALE—REGISTERED SHORTHORN AND polled Durham bulls and heifers. One double standard 4-year-old roan real herd bull. Please don't write unless you want to buy. J. H. Held, Sterling, Colo

REGISTERED GUERNSEY BULL, 14 MONTHS old, and one 6 months old for sale. Both sired by Auburn's Jackstone, champion Guernsey bull at Denver Stock Show in 1917. J. W. Purvis, Berthoud, Colo.

REGISTERED HEREFORD BULLS—THIRTY bulls 12 to 24 months old, of the best Anxiety breeding, hardy and in good condition, with best of bone and ready to go on the range. One 2-year-old bull, full brother to champion cow at Denver, and a 5-year-old bull, the sire of most of the above. Priced for a quick sale. J. O. D. Ranch, Aroya, Colo.

HORSES.

TWO AND THREE-YEAR OLD REGISTERED Percheron stallions for sale. The 3-year-olds proven breeders. R. R. Lucore, Arriba, Colo.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

RECLEANED SUDAN GRASS SEED, FREE from any foreign matter, at 15c per pound. Frank Matoush, Julesburg, Colo.

GUARANTEED SEEDS—ALFALFA $12.50 BU.; sweet clover, $17.50; red clover, $27.50; common millet, $1.75; German or Siberian millet, $2.25; red or black caneseed, $1.45; white cane, sumac or sourless caneseed, $1.75; seed corn, $3.50; white kafir, $2.15; pink kafir, $2.25; Sehrock, $2.50; Sudan, $13.50 hundred; red top, $13.00 cwt.; sacks free Satisfaction or your money back. Ship from several warehouses and save you money; there's a satisfied customer near you. Liberty bonds accepted at par. Meier Seed Co., Russell, Kansas.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

SOLDIERS—640-ACRE HOMESTEADS, SEVEN months residence. Duff, Casper, Wyo.

FOR SALE—IMPROVED 320-ACRE STOCK and farm ranch. Justus Gray, Purcell, Colo.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wisc.

WANTED—TO HEAR FROM OWNER OF FARM for sale. Mrs. W. Booth, H. P. Station, Des Moines, Iowa.

LARGE SHEEP, CATTLE, FARMING RANCH, 50 miles east of Denver. Terms if desired. C. G. Parrett, Byers, Colo.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

REAL ESTATE WANTED—SELL YOUR PROPerty quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., Dept 11, Lincoln, Nebr.

600-ACRE RANCH, TWO SETS OF GOOD IMprovements, 250 under ditch, some water, near Brighton; fine dairy or stock ranch; fine beet ground; 1 mile of beet dump. Address Owner, Box 215, Brighton, Colo.

TWO LOTS IN BEST RESIDENCE DISTRICT OF Denver, for sale or trade for Ford. Address Box 2-P, Western Farm Life, Denver.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description and cash price. Morris M. Perkins, Columbia, Mo.

FARM AND CATTLE RANCHES—CHOICE LIST. If interested call or write F. E. Wrockloff, Merchants Bank, Seventeenth and Curtis Streets, Denver, Colo.

320-ACRE FARM FOR SALE CHEAP—6 MILES south of Fowler in Otero county, Colo. All good land; 40 acres has been in crop. Price, $12.50 per acre, one-third cash. The Irrigated Farms Mortgage Co., Cooper Bldg., Denver, Colo.

RANCH, 480 ACRES, SITUATED ON PINEY Creek 14 miles from Wolcott, Colo., 5 miles from State Bridge. Best cattle range in the state. Also, for sale, 125 head of cattle, 16 head horses, farm implements, Case tractor engine, and saw mill. For information address owners, Edwards & Francis, Wolcott, Colo.

WYOMING WANTS FARMERS—WE HAVE 100,000 acres of irrigated land from $40 to $80 per acre, perpetual water rights, easy terms, bumper crops of alfalfa, grains, sugar beets, vegetables; near towns, railroads, markets, and sugar factories. Write for resource map, giving reliable information, to Wyoming State Board of Immigration, 315 State Capitol Building, Cheyenne, Wyoming.

COME TO MOFFAT COUNTY—NO HOT WINDS, tornadoes nor crop failures. Good well water 10 to 30 feet; springs on many ranches; deep rich soil; free range in National forests, fence posts, timber and saw mills; excellent schools, the one at Craig ranking in the highest class in the state. Wheat with good farming yields 20 to 45 bus., alfalfa yields well without irrigation. An ideal grain and stock country. Fine improved land, $12 to $40. Come now and take advantage of the rise in prices which is just beginning. Full information sent. Craig Realty Co., Craig Colo.

ATTENTION STOCKMEN — WE HAVE TWO stock ranch bargains. Just what you are looking for; each ranch comprises 320 acres deeded land with substantial improvements and large acreage under irrigation, and in alfalfa, timothy, clover hay, unlimited outside free range, with 4,000 acres of leased land under fence for fall pasture. These ranches are located three miles apart, 125 miles from Denver. Good shipping point, big money makers. Prices $12,000 and $13,600 on good terms. See us at once for these. Reynolds, Covey & Reynolds, 625 Exchange Bldg., Denver, Colo.

COLORADO LANDS NEAR DENVER — 160 acres, 20 miles to Denver and mile and a half to station, coal mine, beet dump and school; good soil; lays fine; 15 acres in alfalfa, balance beet and wheat land; good water right; fenced; small buildings. Price $125 per acre for land and water; $2,000 down, balance ten yearly payments, 6 per cent interest. Immediate possession or purchaser can assume lease with possession next fall.

160 acres adjoining Hudson, 30 miles to Denver, all under irrigation ditch, but not under plow; sandy loam; good beet and alfalfa land. Hudson has bank, two elevators, lumber yard, high school, beet dump, several stores, garages, hotels, etc.; fine growing town. Price $110 per acre for land and water right; $2,000 down, balance ten yearly payments, 6 per cent interest.

640 acres, one mile to Platteville, 35 miles to Denver; nearly all under irrigation and in crop; no buildings; fenced, 80 in alfalfa; good water right; will divide if purchaser does not want whole section, or can add two more sections adjoining if want more land. Price $100 per acre, $15 per acre down, balance ten yearly payments, 6 per cent interest.

1,440 acres, cattle proposition, five miles to Hudson, living water, fenced, shelter, fair ranch buildings, good grass land; not irrigated. Price $20 per acre, easy terms.

3,040 acres, wonderful colonization proposition, 8 miles south of Keenesburg, 35 miles to Denver; good soil, lays fine, all below irrigation canal, but no water rights now go with land, but within few years no doubt will have plenty of water for this land and will sell then at high figure; good wheat land, in well settled neighborhood. This land is retailing at $40 per acre to adjoining farmers. We will retail at $40, or make attractive price to someone buying whole tract. Very easy terms.

Note—We hold as Trustee nearly 20,000 acres irrigated and nonirrigated land near Denver which we are offering at forced sale under order of court at very low prices and on unusually easy terms. Write for map and come to see us. Chicago Title and Trust Company, Trustee, 701 Ideal Building, Denver, Colo.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WRITE FOR DELIVERED PRICES ON CEDAR posts. Pay after unloading. J. B. Overton, Sagle, Idaho.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

RED CEDAR SPLIT FENCE POSTS. GUARANteed full size and A-1 quality. You pay after unloading. Send for booklet and prices delivered your station. Kirk Co., Box 1138-S, Tacoma, Wash.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

INVENTIONS.

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

TOBACCO.

TOBACCO—KENTUCKY'S BEST "OLD HOMEspun" chewing and smoking. Direct from farmers. Trial offer, 2 lbs. postpaid $1.00. Kentucky Tobacco Assn., Dept. 50, Hawesville, Kentucky.

PATENTS.

PATENTS—BOOKLET FREE. HIGHEST REFERences. Best results. Promptness assured. Send model or drawing for examination and opinion. Watson E. Coleman, Patent Attorney, 624 F st., Washington, D. C.

APPLE BUTTER.

FIVE-GALLON CAN OF DELICIOUS OLD-FASHioned apple butter, $7. Check or money order with order. Sample 15 cents, refunded with first order. The Pee-Kay Co., Paonia, Colo.

TANNING

LEATHER TANNING RECIPES. ONE FREE guaranteed cheap way. Agents wanted. R. N. Gilley, Carlton, Texas.

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

HONEY.

"THEBESTO" ROCKY MOUNTAIN HONEY, light colored, thick, fine flavored; per can, five pounds net, postpaid, anywhere west of Ohio river, $1.50. Send remittance with order. The Colorado Honey Producers' Association, Denver, Colo.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

Students' Judging Contest.

Thirty-five students at the Colorado Agricultural College under the auspices of the Livestock Club competed for the Sweet-Tucker memorial livestock judging prize in an interesting contest recently. This prize, which consists of $100 donated by Stuart Sweet, Chief of the Bureau of Markets of Denver and the Livestock Club of the college, was divided among the winners in the contest. In addition to the money prizes cups were given to the individuals excelling in the various classes. Western Farm Life cup for excellence in sheep judging was won by J. A. Read. This cup is to be an annual trophy for this contest.

The contest was inaugurated at the instance of Mr. Sweet in memory of Victor Tucker, who was a graduate of the college and at the time of his death was county agriculturist in Douglas county, Colo. Mr. Tucker and Mr. Sweet were members of the stock judging team that represented the college at the National Western Stock Show several years ago, in which these two tied for first place.

Winners in the recent contest were J. A. Read, first in general judging; Chas. Stocker, second, and Sam Riggenback, third. Mrs. Catherine Seymour won the individual championship in judging horses. Prof. Geo. E. Morton, Prof. Chas. I. Bray and Mr. Sweet acted as judges.

There was much interest shown in this event by animal husbandry students. It gives the students some practical work in judging while developing them for more important contests at the stock shows.—H. A. L.

High Altitude Crops.

Western Farm Life:

In reading my May 1 number, I read a letter and the answer, about farming at 8,500 feet. I want to tell you that we are 8,500 feet, and what we grow. We are ten miles from Howbert, the place that O. B. of El Paso has his claim. We raise bald barley, rye, oats, and bearded barley, and have threshed the last three years and use or sell grain for seed. It does well. Our spuds are A No. 1 and lots of them. We are planting 25 acres this year. We have gooseberries, raspberries and strawberries. We have no alfalfa as yet, but are putting some in this year. The neighbors around here cut two crops of alfalfa and also two crops of rye for hay. One year I planted sweet corn, it made roasting ears, but did not mature although it made good fodder. Beans make string beans, but do not ripen; but peas, beets, radishes, lettuce, onions, carrots, turnips, rutabages, vegetable oysters and such garden truck do fine. Hoping this will help O. B. or some other fellow homesteader to select what to raise, I am—Mrs. A. R. Williams, Tarryall, Colo.

A painful mistake is reported from North London. It appears that a young lady who went to a fancy dress ball as "The Silent Wife" was awarded the first prize for her clever impersonation of a telephone girl.—Punch, London.

Let Western Farm Life Service Bureau help solve your farming problems. All questions answered promptly.

Electric Light and Power for Farm Home Use.

(Continued from Page 5.)

and this sometimes appeals strongly to those who do not like to absent themselves from the family meal, or who like to have things hot from pan to plate.

Electric cooking is no doubt a desirable asset to any household. It must be regarded as more expensive, when dollars and cents are considered, but many who use it rate the convenience and advantages as well worth the difference. Electric cooking, however, can not be considered as possible with the ordinary farm light and power outfit. Service from transmission lines, central stations, and even from some private hydro-electric plants of more than the usual capacity does make it available.

Lighting-Circuit Appliances.

There are several appliances that can be used on electric lighting circuits. Several types of portable disk stoves are available. They may be obtained for either 32 or 110 voltage. Bacon and eggs and griddle cakes may be cooked on these stoves. Toast may be made by placing a piece of wire netting between the bread and the top of the stove. They may be used in the dining room, sick room, etc. They are made in at least three sizes, and the largest ones are provided with a three-point switch which permits a regulation of temperature.

The electric toaster permits the toasting to be done where it can be watched without undue inconvenience. Many claim that the sooner toasted bread is served after toasting the more delicious is its flavor. To be able to toast bread at the table during the meal has much to recommend it to those of this opinion. These toasters may be obtained for either the 32 or the 110 voltage.

For those who hold that coffee should not be boiled and should be served directly it is made, in order to retain the delicate and distinctive aroma which may be lost in the form of vapor, the coffee percolator has much to commend it. They are obtainable in several sizes for both the 32 and the 110 voltage.

Being obtainable in a number of different designs and designed for perfect control and regulation of heat, the electric chafing dish permits the preparationof a small meal in any room where an electric-lighting plug exists. They too are procurable for either the 32 or the 110 voltage.

The hot-water bottle has seen so much use in many homes that some would not care to be without one. The application of heat is recognized by the medical profession as a very important and reliable means of relieving suffering. And the electric heating pad eliminates the danger of leaking water and provides or maintains a constant maximum temperature. A regulating switch permits adjustment for different degrees of heat.

For table cooking the table grill fills a long-felt want. With it one may fry, broil, toast, boil, or have a hot plate, each necessarily limited in capacity, but functioning perfectly. The utensil consists of a horizontal series of open radiant coils which glow almost instantly upon turning on the current. A vessel is supplied for boiling water or steaming eggs, the cover of which, when inverted, forms a frying pan. Under the heating coils is a compartment for broiling, while bread may be toasted on gratings directly over the heating coils.

Washing Machine.

The washing machine has perhaps done as much (if not more) toward relieving the housewife of much ofthe extra burden, which has been thrown upon her under present economic conditions, as any other of the labor-saving devices. There is no doubt that, in a measure, it replaces the washerwoman. Let no one have the impression, though, that it does the family wash and therefore offers a complete solution of the problem. The installation of a washing machine removes much of the drudgery and heavy work of washing, but when the job is once started practically all of one's time is required until the clothes are out on the line. It has thus made it possible for girls 14 years old to do the family wash, whereas under the old manual way it would have been considered that the labor required made that out of the question.

These machines are manufactured by many companies and require comparatively little current for operation. They may be operated from any lighting socket.

Electric irons are available in weights of 3, 4, 5 and 6 pounds. The lightest consumes about 350 watts, the heaviest about 580. The 4-pound iron probably is the most used. The electric iron is the most popular of all the household conveniences. It is manufactured in several shapes. In one, a pull-off plug makes the electrical connection to the heating element of the iron. In another, an indicating "on and off" switch is added, while in still another a permanently attached cord is provided. One type can not be recommended above the other two.

A dispatch received by the Bureau of Crop Estimates, United States Department of Agriculture, April 20, 1920, from the International Institute of Agriculture, Rome, Italy, gives the total area in winter wheat this year in Spain, France, Scotland, Roumania, Bessarabia, Canada, United States, British India, Japan, Tunis, as 94,962,000 acres, which is 92.3 per cent of last year and 91 per cent of a five-year average. The condition of cereals is good in Great Britain, Ireland, Denmark, Austria, Morocco; average in Italy, Algeria, Mesopotamia.

Illinois farm hands are certainly hitting a rapid pace. The last report comes from Bloomington to the effect that many first-class hands are asking $120 to $125 per month, with board and washing.

Livestock Field Notes.

Mr. August F. Borgmann of Longmont, Colo., has some excellent spring gilts and boars at the present time. Read his ad on the Livestock pages in this issue.

The Pahgre Valley Ranch of Montrose, Colo., is offering the opportunity of a lifetime to some live Holstein breeder to get a half interest in one of the best young bulls of the Holstein breed. The bull is Pahgre DeKol Ollie Homestead. Read the particulars of this offer in our Livestock department of this issue.

The Allen Cattle Company of Colorado Springs, Colo., have some fine young Shorthorn bulls for sale at the present time. They have some fall calves and a few yearlings that can be bought right. Read their announcement on the Livestock pages.

WESTERN FARM LIFE

Combination Offers

Reading Matter For All the Family.

WESTERN FARM LIFE, 2 YEARS

With McCall's Magazine	1 yr.,	$1.65
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Send All Orders to

WESTERN FARM LIFE

Denver, Colorado.

For Sale --- Registered Shorthorn Calves

EITHER SEX—6 WEEKS OLD—$50.

The mothers of these calves have three crosses on top of their pedigree which trace to Choice Goods, the St. Louis World's Fair Grand Champion.

The sire is a grandson of the famous bull March Knight.

Your Chance to Get Some Real Shorthorn Blood.

OTTO RAMSTETTER, Golden, Colo.

SOWS BRED TO

CRUSADER

For August and September farrow. Weanling boars at bargain prices. Write us.

DALY & THOMPSON,

Cambridge, Nebr.

FOR SALE

Some good March pigs, both sexes, suitable for boys' and girls' clubs.

Duroc Jerseys and Poland Chinas.

Colorado Agricultural College

Fort Collins, Colorado.

Edbrooke Durocs - Green Acre Farm

Registered Duroc Jerseys.

My Herd Boars Are Defenders of Col. Breeding.
Green Acre Defender 166505. Edbrooke's Defender 165263
The Biggest of the Big Type.
My Sows Were Prize Winners Denver 1920.
The Better Your Stock, The Better Your Returns.

H. W. J. Edbrooke, Prop., 6th & Wadsworth, Denver

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.

C. F. Burke, Mgr. Pueblo, Colo.

WHO NEEDS A PERFECT INDIVIDUAL TO HEAD THEIR HERD?

Son of a 23.23 lb. 3-year-old heifer—an unusually good yearly producer—by a son of our $5,000 bull—out of the 30-lb. cow who produced the great show cow and State Champion Junior 3-year-old Lilu Segis Pontiac, 34.25 lbs. butter in 7 days.

He is about one-half white, and a beauty. Ready for light service. The first check for $350 takes him.

SANBORN MEADOWS,

MRS R. G. DOUGLAS. RUSH, COLO.

15 Excellent A. R. O. Records

Made in past two months by

Wallie Farm Registered

HOLSTEINS

Thirteen of these made on junior 2-year-olds, ranging from 12 to 16½ lbs. butter in seven days. Bull calves from these dams for sale. Price $100 to $400. Also a few heifers.

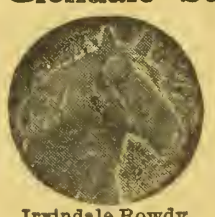
Herd Sire

KING JOHANNA SEGIS PONTIAC

"His sisters have broken over 100 world's records."

W. G. Foster, Owner, 4800 So. Penn.
Phone Englewood 122, Denver.

Glendale Stock Farm



Irvindale Rowdy Grand Champion Belgian Stallion Chicago, 1917, Denver, 1918 and 1919

Breeders of

BELGIAN HORSES

and

POLLED HEREFORD CATTLE

Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.

REGISTERED BIG TYPE DUROC JERSEY HOGS

Am offering some good Spring Gilts and Boars. Also some good fall gilts. Write for prices and breeding.

August F. Borgmann,

R. F. D. 4 LONGMONT, COLO.

Facts in BLACK & WHITE

Purebred Holstein Cows Yield Five Times More.

In the opinion of Supt. Smith of the Geneva Experiment Station, the average production of butterfat per year per cow in New York State is about 100 lbs. The State College at Ithaca has a cow descended from common stock on one side and from a line of purebred Holstein sires on the other. This cow has produced 479 lbs. of fat in a year. Not a startling record as several purebred Holsteins have records of more than twice as much, but it is interesting as proof that intelligent improvement of a herd of grades can multiply the butter yield by four and five

Send for Free Illustrated Booklets. They contain valuable information for every Dairyman.

The Holstein-Friesian Ass'n

186 Hudson Street

BRATTLEBORO, VERMONT

The Divide Herd

Young Bulls

We are now offering at very reasonable prices some good Shorthorn bulls suitable for small herds. Fall calves and a few yearlings priced for quick sale. Full particulars on application.

THE ALLEN CATTLE CO.,

SHORTHORN BREEDERS,

Colorado Springs, Colorado

Win-O-Dee Farm Holsteins

Herd Bull KING TWISK SEGIS PONTIAC 182200.

This sire's two nearest dams have a record of 35.38 lbs. butter from 733 lbs. milk in seven days. The average record of his six nearest dams is 34.38 lbs. butter in seven days. **Young Stock of Both Sexes For Sale.**

P. K. HUDSPETH, Pueblo, Colo.

Siloam Star Route.

WILLIAM UPP

Livestock Auctioneer

Purebred Hogs a Specialty.

DEER TRAIL, COLO.

REGISTERED

DUROC JERSEY HOGS

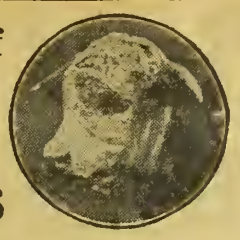
BRED GILTS FOR SALE.

R. C. VAN SCOY & SON

Highland Sta., Route 5. Denver

Phone Arvada 105-R-2.

The Hereford Corporation of Wyoming
Box 876, Cheyenne, Wyoming



Registered Herefords

We Offer For Sale

3 Loads Coming 2-Year-Old Bulls
2 Loads Coming 2-Year-Old Heifers

And can also take care of any breeder who wants a few good bred heifers and cows.

Denver office
406 Live Stock Exchange Bldg.
RAYMOND S. HUSTED, Mgr.

DeWITT HEREFORDS

HERD BULL—MISCHIEVOUS JR., by THE HEIR

His dam is Mischievous 3rd, a full sister of BEAU MISCHIEF and the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of
GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

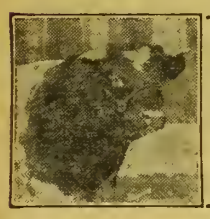
L. G. Davis Herefords

ANXIETY BRED

For Sale—3 cars of registered Anxiety Bred Open Heifers in lots to suit purchaser. Can be seen at my Wynnewood ranch six miles from Denver.

WE HAVE A FEW HIGH CLASS YEARLING BULLS FOR SALE

L. G. DAVIS, Saratoga, Wyo.
Or Wellington Hotel, Denver



THEY TOP THE MARKET

Weekly reports received from three of the leading beef markets show that Shorthorns sell at the top more frequently than any other breed. It pays to grow Shorthorn beef. You get weight and quality both. Ask for literature.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Avenue Chicago, Illinois

Registered Breeding Bulls and Heifers

HEREFORDS
SHORTHORNS

Young sctock of both sexes for sale at all times. Our sales yard is located within two blocks of The Denver Union Stock Yards. We are pleased to show our stock at all times.

THE LOWELL PUREBRED CATTLE CO.
Union Stock Yards, Denver.

Verdun Fairfax, 547803.
FOR IMMEDIATE SALE.
Six young bulls of Fairfax breeding, $300 to $500. Two choice herd bulls, and Fairfax Heifers. Also few choice heifer calves. All stock disease free, and guaranteed.
Prompt Attention to Inquiries.
SNEFFELS LAND & CATTLE CO.
RIDGWAY, COLO.

Straight and Polled Shorthorn Cattle

Valentine's Last X12316 452005 at head of beef herd. Claywood White 427350at head of milk type.

STATE INDUSTRIAL SCHOOL
Golden, Colorado

Cornforth Live Stock Co.

ELBERT, COLO.

Forest Glen Shorthorns

Our sales have been good the past year and still offer a few choice animals for sale.

BEAU ASTER

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions. Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER
Holyoke, Colo.

COL. H. C. JENNINGS.
Purebred Livestock

AUCTIONEER

Also conduct Sales of Real Estate.
534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

H. C. DENNIS, Auctioneer

FORT MORGAN, COLORADO
Registered Shorthorn and Jersey Cattle
Real Estate Sales Conducted. I can sell your real estate if it can be sold.
Wire at my expense for dates.
Phone: Res. Morgan 155J; Office Morgan 18

Partner Wanted

We have decided to sell one-half interest in our reserve sire PAHGRE DE KOL OLLIE HOMESTEAD. He is a three-quarter son of PIEBE LAURA OLLIE HOMESTEAD KING, the sensational young sire who has more 20,000-lb. two year old daughters than any other sire living or dead. Pahgre De Kol Ollie Homestead has great long time backing. His sire, his dam, and he himself are all show-ring winners. He is straight and deep and wide and long, and RIGHT in every way, and he sires wonderful calves. He is two and one-half years old and weighs 1,900 pounds. We will not sell more than one-half interest in this young sire, but we want him to have more opportunity than we can give him at this time, so we want some progressive breeder to use him half or more of the time. He is sure to put some breeder on the Holstein map in short order. This bull's brothers are selling for thousands of dollars in the east—our price to the right breeder on one-half interest in this remarkable young sire is but a fraction of that. You do not have to be a breeder on a large scale to take advantage of this opportunity. You do not even have to be an established breeder of registered Holsteins. If you are an experienced dairyman and are just starting in to breed registered Holsteins, and if you mean business, this opportunity is open to you also.

MONTROSE COLORADO PVR PAHGRE VALLEY RANCH QUALITY

Are you going to let it slip thru your fingers?

Pahgre Valley Ranch

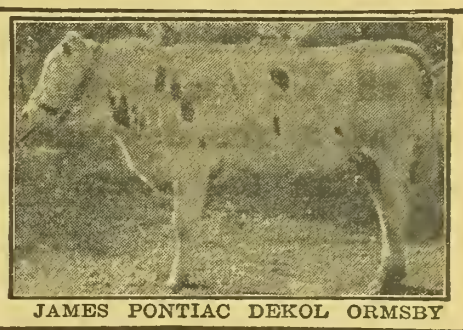
Montrose - - - - - Colorado

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
JOHNSTOWN, COLO.



JAMES PONTIAC DEKOL ORMSBY

High Class Jerseys

The demand for Jerseys has become so persistent that our Mr. Dixon is now in the east to get another car load. We hope soon to be able to supply the demand.

Remember we had the Grand Champions at the Denver Show, in fact, all the Championships.

Only one bull of serviceable age left, but have some corking good calves.

ALSO SOME EXTRA GOOD BRED GILTS.

McCLENAHAN & DIXON, Greeley, Colo.

Shorthorns That Milk

Victoria 228667

R. of M.—15,175 Lbs., 546.3 Lbs. Butterfat. Class A. Only a few cows of this breed exceed this record in Class A official test.

Bulls and Heifers for sale at Reasonable Prices.

The Pine Valley Dairy and Farms Company
Seeley G. Rose, Manager. COLORADO SPRINGS, COLO.

MILKING SHORTHORNS.
All Cows Officially Tested. 125 in Herd.
Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.
THE BONVUE FARMS CO.,
Stockyards, Denver, Colo.

MILK RECORDS

Do Not Replace Straight Bates Shorthorn Blood

FOR

Straight Bates Shorthorns are the "foundation source' of the Milking Shorthorns of England and America.

The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

Regist'd Holstein Bull Calves

Two Ready for Light Service.

Well grown, nicely marked from high producing dams. Sire, Western Sir Colantha Ascalon, he by Western Ascalon Champion Boy, a son of Colorado's Greatest Dairy Cow, and half brother to Colorado's Greatest Dairy Heifer. Write us.

W. B. & E. M. DOWNS, Yuma, Colorado.

REGISTERED JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.

H. J. VAUGHN, KIRK, COLO.

Forty million tires for 1920 What kind of tires are they

Here is a car that has run too close to the curb. Rubbing up against curbs will grind the rubber off the side of a tire, finally exposing the fabric to the action of sand and water.

A great many tires would last longer if their owners were only a little more careful not to scrape against curbs in stopping and starting.

IF the average motorist could spend an hour or two in a vulcanizing shop—watch the tires coming in for repair with all their weaknesses showing—talk to the shop manager away from the cheers of the tire salesmen—

He would see what comes of thinking too much in terms of "concessions" and "allowances."

* * *

Concessions and allowances are what the irresponsible tire dealer lives on.

He finds it easier to convince a man that he will make good on a tire if it goes bad than to convince him that it won't go bad.

What practical motorists are looking for today is good tires—not tires that may have to be made good.

And they are going more and more to the dealer whose business is based on *quality* instead of on chance.

* * *

The United States Rubber Company stands back of that kind of a dealer with all the tremendous resources at its command.

It has staked a larger investment on quality than any other rubber organization. Its first thought has always been of the tire user—putting his problem before the problem of markets.

Every important advance in tire manufacture has come from the United States Rubber Company—the *first straight-side* automobile tire, the *first pneumatic* truck tire, the *grainless rubber* solid truck tire, for instance.

The U. S. guarantee is for the *life of the tire*, and not for a limited mileage.

* * *

Nearly every man pays for U. S. Tire quality, but he doesn't always get it.

If he did the country wouldn't need forty million tires this year.

United States Tires

United States Rubber Company

Fifty-three Factories

The oldest and largest Rubber Organization in the World

Two hundred and thirty-five Branches

WESTERN Farm Life

Vol. XXII. *Denver, Colorado, June 15, 1920.* *Semi-Monthly*

Last Call for That Silo.

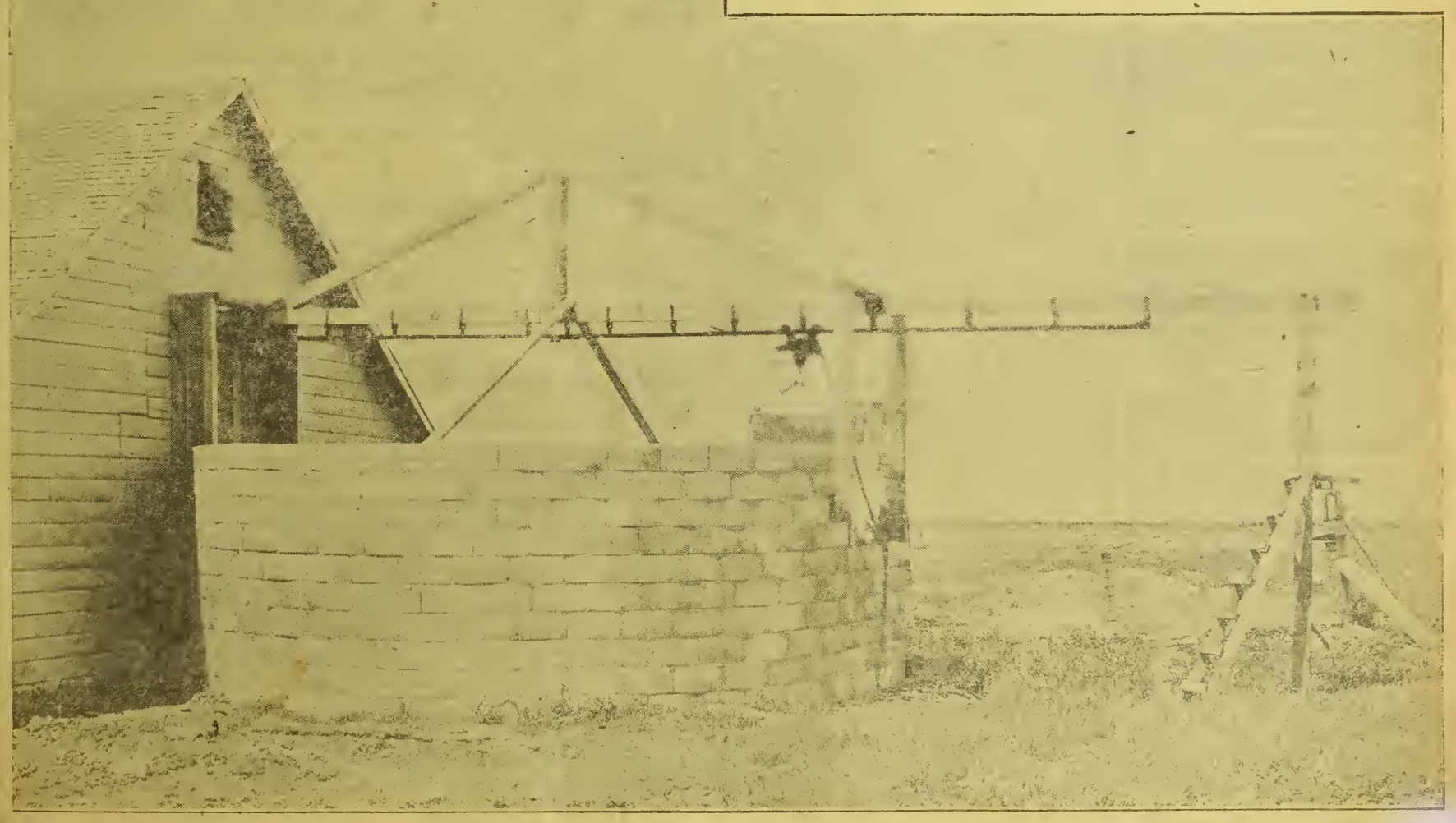
MOISTURE conditions are favorable throughout most of the territory of Western Farm Life. The season is backward, however, on account of cool weather which persisted well into June. A week or ten days cut from the frostless period in spring often puts crops in danger of the first freeze in fall. It is the sort of season when anything is liable to happen. May, with all its cloudy coolness, along the eastern slope, gave us little additional moisture, though the cool weather served to keep the evaporation down. In view of these peculiar conditions the wise course is to make provision for storing feed crops in the most convenient, useful and nutritious form, and for that we need the silo.

Corn, kafir, milo, feterita, cane and Russian sunflowers, according to elevation and moisture conditions, are all suitable for silage. Every class of livestock relishes silage. The dairy farmer can hardly succeed without succulent winter feed; the beef raiser finds silage a means of cutting feeding costs and keeping his stock cattle in good condition. Sheep men find silage effective in the ration for the farm flock or the feeder lambs.

Should the summer turn off to be hot and dry, or should hail happen along and cut the leaves from the corn, the stunted crops may still be preserved for use, if there is a silo. If we have another winter like the last—early fall storms and late blizzards in spring—a silo will prevent stock losses. If you have one silo and there is a chance for a big yield of forage crops, build another one this summer. A reserve silo for storage of feed is life insurance for your stock.

It takes only a week to build a pit silo. All the cost is cement and labor. Community labor and community silage cutters will solve the problem in many dry farming sections. The pit silo shown herewith is located in western Nebraska. It is forty feet deep, with a high rim above ground. A carrier system takes the feed into the barn for the dairy cattle, making feeding easy and convenient. Ask your county agent or your agricultural college for bulletins giving full directions for building pit silos, and descriptions of above ground silos. Or write Western Farm Life Service Bureau. Build a silo and build it now. If you want a high silo get busy quickly. The silo builders always have time for just one more good contract.

A Weld county farmer paid $700 for a silo in 1919. After one season's experience he says he figures that the silo doesn't owe him a cent. If a farmer has that experience with an above-ground silo, what of the man who can build a good pit silo for less than $100? It is not a question of the type of silo; that is for each man to decide according to his own condition and needs. The point is, BUILD A SILO and BUILD IT NOW.



A FORTY-FOOT PIT SILO ON A WESTERN NEBRASKA FARM.

Genuine Aspirin

Name "Bayer" means genuine
Say "Bayer"—Insist!

BAYER

Say "Bayer" when buying Aspirin. Then you are sure of getting true "Bayer Tablets of Aspirin"—genuine Aspirin proved safe by millions and prescribed by physicians for over twenty years. Accept only an unbroken "Bayer package" which contains proper directions to relieve Headache, Toothache, Earache, Neuralgia, Rheumatism, Colds and Pain. Handy tin boxes of 12 tablets cost few cents. Druggists also sell larger "Bayer packages." Aspirin is trade mark of Bayer Manufacture Monoaceticacidester of Salicylicacid.

Prevent Smuts

It is more necessary today to employ scientific methods on the farm than ever before. Cleanse all seed grain with *Formaldehyde* solution before planting. Positively destroys smuts of wheat, oats, barley, rye, etc.

FORMALDEHYDE
The Farmer's Friend

Spread the seed grain in a thin layer and sprinkle with diluted *Formaldehyde*. Shovel over thoroughly and cover the pile with bags for about ten hours. Dry out by spreading uncovered in a dry place. Disinfect the drill with *Formaldehyde* before planting.

One pint of Perth Amboy *Formaldehyde* treats 40 bushels of seed. New hand-book sent free on request.

PERTH AMBOY CHEMICAL WORKS
709-717 SIXTH AVENUE NEW YORK

Master Farm Gates Can't Sag Warp or Twist

The Farm Gate you need. Designed and built for long service. Erect it—then forget it. No continual repairing. Will last for years.

MASTER FARM GATES

are of the double bow, aeroplane construction. Light in weight; exceptionally durable and look well. Cannot sag, warp, twist or bend. Satisfaction guaranteed. It's the Master Gate. Free circular—write for it.

THE MASTER FARM GATE CO.
Suite 712
Equitable Bldg.,
Denver, Colo.

Reliable representatives get our proposition.

Stack Your Hay The Easiest Way the Jayhawk

Stackers and Sweep Rakes

Harvesting hay the Jayhawk way means time, men and money saved. Jayhawk Stackers and Sweep Rakes make it easy to harvest and save every hay crop. Pays for itself the first year. Fully guaranteed. Sold direct at manufacturers price. Write today for free catalog and price list.

WYATT MFG. CO. 934 N. 5th ST., SALINA, KANS.

An English View Of Our Milking Shorthorns.

The well filled classes of Milking Shorthorns at the Eastern States Exposition at Springfield last fall must have been highly gratifying to breeders of the great dual purpose breed. With a total entry of close upon 150 head they made a show which has seldom been equaled in the United States. The Milking Shorthorn has come right to the front at an opportune time, and it will surely take its place in America as in England as the farmers' cow, providing the regular weekly milk or cream check, breeding valuable beef or milking stock, and, whether on a mixed or purely grass farm, turning into valuable manure the hay and roughage.

No one could fail to be impressed by the grand class of aged bulls at Springfield, by the size and true Shorthorn character displayed by the cows and by the uniform high quality of the younger classes of both sexes. In the older cow classes the shape and development of the udder in many instances left something to be desired. One cannot ignore the fact that well set teats of a good medium size are as essential in the modern milking cow as is a wide, strongly hung bag, commencing with good width well up behind the thighs, and carried through right forward under the belly. Vessels so hung, although they naturally increase in size as the cow gets older, should retain their form even when a cow breeds regularly until ten or twelve years old.

The question of showing young heifers will be a point for the future consideration of breeders. At the present time they are rather essential towards making the most imposing display of the breed at the numerous state exhibitions, but care should be taken not to show these youngsters in too high condition. In a few years' time when, as will surely be the case, the entry of freshly calved cows and heifers will be sufficient in itself to make an impressive show in the female section, it might be found advisable to discontinue the junior heifer classes, which must to a certain extent encourage the over-forcing of the yearling heifers, at the risk of injuring their future milking powers.

Another danger that Milking Shorthorn breeders should bear in mind is that of endeavoring to beat the purely dairy breeds in milk production. That the Milking Shorthorn has won undying fame in miking and butter tests, and will continue to do so, I am fully assured, but at the same time the 2,000 gallon cow is not our aim.

What national or economic gain has the one 2,000 gallon phenomenon over three robust dual purpose cows yielding 700 gallons yearly? I fail to see any beyond the flash advertisement from the breeder's point of view. The thirty pounds of concentrated food consumed daily by the former would be a liberal allowance for the three latter which, in addition to consuming roughage and making more manure, would produce at far less risk three calves yearly, fit to rear for beef or milk, and at the finish they would produce three level carcasses of beef and three valuable hides. What an existence, too, has the attendant on three or four cows "on test" milking and feeding day and night, week in, week out, with punctilious regularity and consummate skill, keeping his bovine machines taxed to their utmost limit of productive powers. Small wonder is it that many fine cows are ruined under such a strain, and that it becomes increasingly difficult to find men willing to undertake such arduous labor. No cow at Kelmscott has ever yet been milked more than twice daily, neither is it the intention to go further than the morning and evening milking, which can be accomplished on ordinary dairy farms without either employing a double staff of workers at the present excessive cost, or expecting an employe to devote his whole time to the incessant work entailed by milking three or four times during each twenty-four hours.—Mr. R. W. Hobbs, Kelmscott, England, in The Shorthorn World.

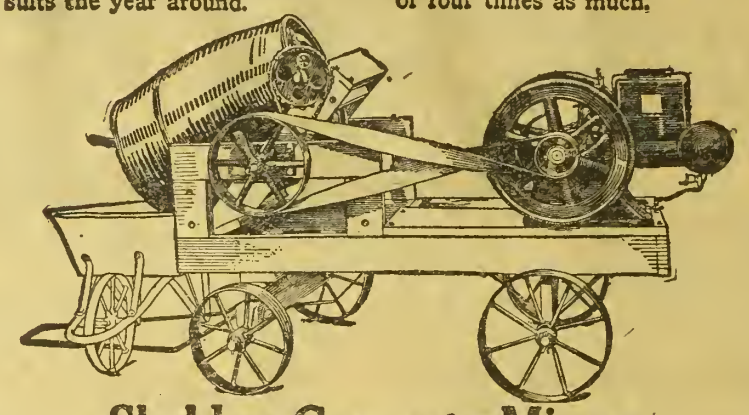
Gets Value Received.

E. E. Evans, Fort Morgan, Colo., sends us two subscriptions, a renewal for himself and a new one for a neighbor, and says: "Although practising medicine and not reading your paper very thoroughly, I feel that I get more than value received from its columns. I like to know something of what is going on throughout the state and consider it a good medium of information. To my mind you are filling a very important place in agricultural literature in Colorado."

A Concrete Mixer At Every Man's Price

We consider ourselves very fortunate in securing the exclusive agency in this part of the country for the Sheldon Concrete Mixer. It fills an old need of the contractor and farmer; that of a reliable low-priced mixer that will give perfect results the year around.

The price of the Sheldon Concrete Mixer puts it within reach of every man. In fact, it costs so little that it soon saves its cost in labor saved alone. And the work it turns out would do credit to mixers costing three or four times as much.



Sheldon Concrete Mixers

In this day every farmer and contractor is looking for an economical, labor-saving method of putting in concrete. The Sheldon fills the bill. Farmers and contractors all over the United States—thousands of them—are using the Sheldon and getting perfect results.

The Sheldon is a sturdy machine, built exclusively for the man who does not want to invest a lot of money in a mixer. However, when a big job comes along, the Sheldon will handle it. It will mix a batch of concrete in from one to two minutes—some users have written us that they have mixed as high as five yards an hour. That is enough concrete to take care of almost any job.

But on small jobs one man can run it and turn out just as satisfactory work as when he is using a whole crew.

Call on us and let us show you the Sheldon—or write us and we will send you a catalog describing every detail of the different models.

H. W. MOORE & Co.

DENVER EL PASO SALT LAKE

Sell Your Milk---and Feed

A. & C. Calf Meal

It Costs Only One-Third Of What Your Milk Sells For

It contains all necessary food elements to fatten calves quickly and keep them in good condition. Most dealers carry it in stock or will order it for you.

ORDER FROM YOUR DEALER
IN 25, 50 OR 100 POUND SACKS.

If your dealer cannot supply you we will ship you direct. A. & C. CALF MEAL is sold with a guarantee to give results or money refunded. A trial order will prove that you can raise better calves for one-third what it now costs you to raise them on milk. Manufactured and guaranteed by

ADY & CROWE MERCANTILE CO.
1900 Fifteenth St. Denver, Colo.

Contagious Abortion *the Scourge of the Cattleman* — Prevented

If your cows are dropping dead calves or immature calves, don't sacrifice either cows or future calves.

Our U S. Abortion Tablets (Calkins) will stop it, and prevent it in the future. OVER 12,000 COWS TREATED SUCCESSFULLY.

Seems to be just as effective and reliable as our Kansas Blackleg Aggressin (and that is practically perfect). Write for affidavits of users.

PRICE $1.04 Per Treatment, including war tax.

THE U.S. BLACKLEG SERUM CO.
INCORPORATED

Dr. F. S. Schoenleber, Pres.
Address:
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Why Are Women on Dry Land Farms Discontented?

WHAT A CENSUS ENUMERATOR DISCOVERED ON HIS ROUNDS

EARL LYND JOHNSTON.

Let Us Hear From the Women.

Is the writer of the accompanying article correct in his diagnosis of the situation among women on the dry land farms of Eastern Colorado? Does he depict general conditions? Are more than half of the women dissatisfied with life on the plains? Is the monotony taking the heart out of them? This is for the women themselves to answer. Mr. Johnston is writing about a restricted area in Eastern Colorado and he is sticking to the facts as he found them on his rounds as a census enumerator. He is himself a dry land farmer, in the center of the locality where he made his survey. There is food for thought in his statements and conclusions. What shall be done to improve conditions? Let the women on the dry land farms answer—Editor.

ARE the women of the dry land, as a class, more dissatisfied than their sisters of the irrigated farm region? This question occurred to me when I found, while enumerating the census, that more than one-half of the women on the dry land in my district want to leave the farm and the country. I base this estimate on the remarks, conversations and observations made as I visited more or less with the people as we filled out the farm schedules together. I do not know the answer to the question I have asked. However, when I found this condition of such general dissatisfaction, on the part of the farm women, so prevalent, I began to seek reasons for it.

I had ample opportunity to do this as I observed conditions, noted environments and listened to the remarks made by the women of the different households while spending 36 days going in and out of 124 farm homes scattered over a territory 24 miles long by about 7 miles wide, or 153 sections of land in the great non-irrigated area of northeastern Colorado. I live in nearly the geographical center of this district and thus I am not a stranger to dry land conditions. I had often heard that it was the custom of some women, when meeting together in a social way, to find fault with the country, but little did I think that such general dislike on the part of the farm women for the dry land country prevailed.

It seems to me that it is a calamitous thing to have one-half of the household discouraged and wanting to quit. It cuts the efficiency of that family trying to secure a living from the soil, for a man can only half heartedly enter into his work if his partner is not with him with her whole heart and soul.

I purpose within the word limit of this brief article to bring to the attention of the readers of Western Farm Life a condition of affairs which is more or less tragic if true and if it is only a ripple on the surface of the stream of farm pioneering due to the unfavorable condition for dry land farming the past two years, then it is not as deplorable as it seems. It would be interesting to hear from the women themselves through the columns of Western Farm Life.

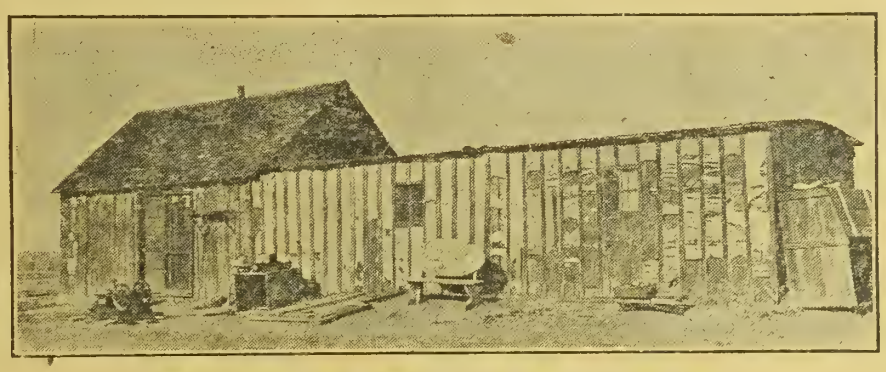
I also purpose to set forth some of the reasons which I think cause this unrest. These are based on my observations while taking the census, or were given to me by the women themselves. I shall give actual circumstances and conversations, with names omitted or changed for obvious reasons.

From my experience in this region I feel sure that the number of homes in which the women are contented and have no desire to leave the dry land could be counted on the fingers of one's two hands. Anyway, they are very much in the minority. Within the radius of less than eight miles of our farm home we are able to count some thirteen separations and divorces within the past five years. I believe that the wife has been the plaintiff in all of these. I cite this to show the visible evidence of discontent that must be present, although I want to make it clear that in any of the examples I may give I do not believe that this unrest has gone so for that a divorce or separation is imminent.

Some of the Reasons.

Some of the reasons why the women folks out here are so dissatisfied I have grouped under five heads:

First—The extreme weather conditions for the past two years; two hot and dry summers followed by the hardest winter ever experienced by those who have been out here even for a considerable length of time. The loss of stock on top of the lack of a money crop last season has brought discouragement to the farmer folk and the wife, being the more temperamental of the two, has shown the strain more than the husband.



The homesteader's first dwelling on an Eastern Colorado claim.

This reason seems to me to account for a great many expressions of dissatisfaction with the country on the part of both men and women. In nearly every home I entered, before I left, I heard some account of the lack of money or the loss of stock. I heard some tales of deprivations due to these causes that would melt the heart of a Hindu idol. The fortunate thing, however, is that when the good years return all thought of leaving the country, due to the lean years, vanishes and the usual optimism of the dry land family returns. The other reasons accounting for the dissatisfaction are more deep-rooted and should be studied more carefully, for they are not due to a whim of the weather.

Second—The isolation. So far from a town of any size; fifty miles and more to the county seat over poor roads; no near neighbors, homes averaging less than one to a section; very few community gatherings even in the school houses; very little trading done by the women at the local villages, especially in the winter. I remember that one woman remarked to me that she had not been to any town since the 16th of August, and I was in her home about January 16th. Five months, a great deal of it alone in her prairie home! Was it any wonder she wanted to leave and get back to Denver?

Her husband being present, I asked him how frequently he went to the local trading point some eleven miles away. He thought perhaps on an average of once every two weeks. I then asked the wife why she didn't accompany him on these trips. This precipitated a lengthy argument between the husband and wife. The gist of what I got from their discussion was this: The wife stated she would go if he would only inform her in time to get ready. His defense was, that when they first came out here he used to say to his wife, "Mary, I'll be going to town in half an hour or such a matter and should like to have you go with me," and that oftentimes he would hitch up and drive to the house and frequently wait half an hour or more until she could finish dusting, sweeping or something to put their fine, little three-room house in order as she said, "If any one should come the house would not look such a fright."

I know a woman who always goes whenever her husband does. Sometimes, on a ten-minute notice, she has been known to set the rising bread into a cool room and bake it when she returned, or even to slip on a coat over a rather soiled kitchen dress and with her two small children would go with him. I can hear the fastidious ones saying, "What a way to do things!" But then I do know that she was never heard to run down the country.

In this connection also I remember that one woman commented to me that there had been times in which she had not seen another woman in six weeks. I had noticed, as I drove up to their place, two houses not over a mile and a half or two miles away and I could not refrain from saying, "Why don't you surprise your neighbors across the way by calling on them unexpectedly?"

She remarked rather cynically, "Well, they would be surprised all right, for it is their place to call on us as they were here when we came."

Of all things! A woman eating out her heart all because a city convention was not in use in the open country.

Third—A change of the standard of living in many cases. Leaving a large house with modern appliances and taking up life in a one or two room shack. What farmer would be satisfied to give up modern machinery for that used a few decades ago? Yet that seems to be the lot of the wife. There is not enough money to furnish both house and farm and according to an age-old custom the house is the last to be fitted out.

How many times did I hear from the women a description of the home they left and the fine furniture they had either sold or stored I suppose as a sort of an excuse for the limited amount of furniture in evidence in their present home. One woman, lately of Chicago, told of the $7,000 flat she left and the conclusion one came to when comparing the vision of this well furnished home in one of our large cities with the small two-by-four one she was living in then, very easily accounted for her disgust with the country.

Happy in a Dugout.

As a sort of counterbalance to this I must relate a very different instance. I visited a home, a small, one-room dugout in the side of a hill with a dirt floor and five little children gathered around the mother as she answered my questions. The husband had gone to the irrigated section with two or three older children in order to earn funds for the support of the family. Surely, I thought, here I shall find a woman who will want to leave. But to my astonishment she was satisfied and told me how much cheaper she could raise her family on the prairie than in town and how much better the country was than the town for bringing up boys and girls. Her philosophy did me a world of good as I had listened to so many tales of dissatisfaction concerning the country from women who had far more evidence of this world's goods than did this loving mother living in the side of the hill. A few questions brought out the fact that she had been raised in a sodhouse in another western state. Thus it seems that it makes a difference where and how you were raised when it comes to farm pioneering.

Fourth—A large percentage of the farmers out here have been recruited from the ranks of professional men, business men and the like, and the women had little notion of what depriving one's self of luxuries, or even comforts, that seed or feed or machinery might be purchased, entailed.

I don't want to be misunderstood, for the women out here have deprived themselves of luxuries, necessities and comforts, in order to win out. Perhaps the breaking point has been reached with some. One woman who had never known anything of farm life until she came out here with her husband some nine years ago, said to me as we had our dinner together:

"Say, mister, it has been so long

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A few years later—the homestead has become a real farm. This is George McCurdy's place near Rush, in El Paso county.

Staking the New Homesteader to Dairy Cattle

AN OUTSTANDING EXAMPLE OF EFFECTIVE COUNTY AGENT WORK

ALVIN T. STEINEL.

Does It Pay?

Does it pay? That is the measure to be applied to any effort along agricultural development lines. That county agent work does pay, and pay big, is shown by an examination of the records such as is now being conducted by Western Farm Life. The present article is one of a series reviewing special projects undertaken by county agents and county Farm Bureaus. This particular project is known as the Dairy Cow Development Plan, carried out under the direction of Agriculturist Charles E. Smith of Las Animas county, Colorado. The net result of this work has been to provide a permanent and steady income for a large group of new settlers in the eastern section of that county, through a plan carried on co-operatively between the business men of Trinidad, the trade center, and the settlers. That it is successful is evidenced by the fact that other localities in the adjacent dry land sections of New Mexico and the Texas Panhandle have inaugurated similar schemes.

LAS ANIMAS County, Colorado, with an area of 4,800 square miles, a rural population of only 4,000 and less than 450,000 acres in farms, is a vast agricultural empire just at the dawn of development. Farming conditions show a great variation, with agricultural lands at altitudes ranging from 4,500 to 8,000 feet. There are mountain valleys, irrigated level plains, and dry land mesas many miles in extent, with every soil type imaginable, moisture and frost conditions that force a diversified program of cropping, and a most careful attention to methods that are new to many settlers, who have come into this county during the last four or five years. The county agent has a man's size job. Not only must he be able to advise regarding crops and methods, but it has devolved upon him to devise plans that would make permanent a population of homesteaders largely coming from the rented farms of Texas and Oklahoma.

The man in charge of this work is Mr. Chas. E. Smith, who is responsible for the origin and successful carrying out of what is known as the dairy cow development plan This is an example of co-operation between business men and farmers that deserves careful study by all who may be interested in the solution of rural problems. Without a good county agent in Las Animas county it is safe to say that many of the newcomers in the eastern section of the county would not be on the road to success today. The dairy cow development plan had its origin two years ago when Mr. Smith, in traveling over the eastern part of the county, found that a great many of the new settlers were producing much more roughage than they had stock to eat it. There was practically no sale for their extra feed and many of them were inquiring as to where they could secure livestock on shares. Mr. Smith then worked out a plan with was called the "Big Brother" dairy cow plan. This meant that individuals would be found with a few hundred dollars who would join with other individuals and furnish money for a few cows each, and place them out with farmers on shares, giving the farmer all the milk and one-half of the increase for a contract period of four years. However, before this plan was put into effect the Trinidad Chamber of Commerce arranged an excursion, at Mr. Smith's suggestion, through the dry land country. Business men were shown the immense quantities of feed and the need of the settlers for dairy stock. This resulted in the organization of the Dairy Cow Development Company, an incorporated concern which was an improvement on the big brother plan. It put the project on a business basis.

Business men readily bought stock in the company, this money financing the first importation of Holstein cows. Four carloads were brought in from Wisconsin, this consignment including six registered bulls. The stock was selected by Mr. O. H. Leibers, then Agriculturist for the Burlington railroad. The cows were put out with settlers on a four-year leasing plan, the principal features of which are further outlined in this article.

Last fall it was found necessary to bring in a second shipment, which came from the Salt River Valley in Arizona, where the producers of long staple cotton had been selling off their dairy stock because cotton looked like an attractive money crop. The second shipment consisted of five carloads of cows and heifers, a total of 176 head. This shipment was distributed among the settlers, who drew their cows by lot under the same plan as the previous shipment. The demand for cows has by no means been satisfied, but those backing the plan believe in developing the movement conservatively and safely. How it is working out is shown by the last annual report of County Agent Smith, who in addition to his other duties, acts as manager of the Dairy Cow Development Company.

Mr. Smith says: "In watching this project from month to month it is known definitely at the present time that those who have invested their money are making a good interest return, and it is also known that those who have the cows are exceedingly satisfied, because they are making a better living than they have before. They are stocked with more cows than they would have dared get credit to buy on the start. It is a pleasure to see these men, who a short time ago were not dairymen at all, milk their cows, go directly to a barn sheet and mark down the weight each time they milk. They are taking an interest in it and are asking about everything that goes to make up balanced rations because they see that the cows will easily take care of them. In this connection the county agent is working strongly on the production of sweet clover. It is proving to be a very good yielder in this section and with sweet clover and silage, which is insisted upon in the lease, and the other dry material which they can raise, they can make a very good balanced ration."

Mr. Smith makes periodical visits to each farmer having cows and he has learned from them that the cows have taken care of their families and they have been able to keep free from debt at the stores and at the same time start a dairy herd for themselves.

A significant indication of the success of the plan comes from the fact that when it was found expedient to bring in the second shipment, the business men who invested the year before were anxious to take up all of the new issue of stock to finance the second shipment. It is quite plain, therefore, that the dairy cow development plan is working out successfullly for both the farmer and the business man.

Registered bulls are used co-operatively by the farmers. Bulls are bought by groups and handled in the way which is usual under the co-operative bull association plan. Thirty-three farmers are included in this project. Farmers who got cows from the first shipment all have silos and those who received stock from the shipment arriving last November, were building their silos when the writer visited Las Animas county some weeks ago. Practically all are pit silos. Some of these settlers came to Las Animas county practically without capital; in fact, with only sufficient funds to pay their filing fees on the land and with very little equipment—only such as they brought with them from the rented farms in the south. Others had from $1,000 to $2,000. All of them, without exception, testify that the dairy cows have given them a start which could not have been got in any other way.

Most of these farmers live remote from the railroad, but auto truck service has been established and a few of them take advantage of the U. S. auto mail route, which brings a 5-gallon can of cream by parcel post to Trinidad from eastern Las Animas county at the low rate of 56 cents. Farmers along the route have not been slow to take advantage of this service. Most of the farmers are building small silos, 20 to 25 tons capacity, the plan being to add more silos instead of building only one of large capacity. Some plan eventually to have three or four silos, so they will be prepared not only for winter feeding, but to carry their stuff through any severe summer drouth that may rob them of the grass.

One of the merchants in the homesteading country told the county agent that 80 per cent of his business consists of cashing cream checks. Formerly he had a credit business and there are still many farmers who apply for credit because they base their operations exclusively on the grain crop, which brings them revenue at one period of the year—if they do not have a failure. The farmer who milks has a steady income from cream and does not have to ask for credit.

Stock in the Dairy Cow Development Company was at par a year ago and it is now quoted at $1.15. No dividend has been declared, although the figures show that the company could have paid 10 per cent on its first year's business. The project will be kept going until there is no further demand for credit for purchase of livestock.

Doubt was expressed as to whether some of these farmers would make a success of dairying, many having come from sections where dairy cows were almost a minus quantity. The story is told by one of the farmers that he was accustomed to cows of a type that could be milked into a quart cup and that he stood up to milk them. They were astonished when they saw what a high grade Holstein cow would do. All have taken readily to the extra labor necessary in handling a dairy herd because it pays. Most of the farms comprise 320 acres, on which they are reserving ample pasture. The county agent has insisted on this point because of a tendency to break up all of the land and put it into crops.

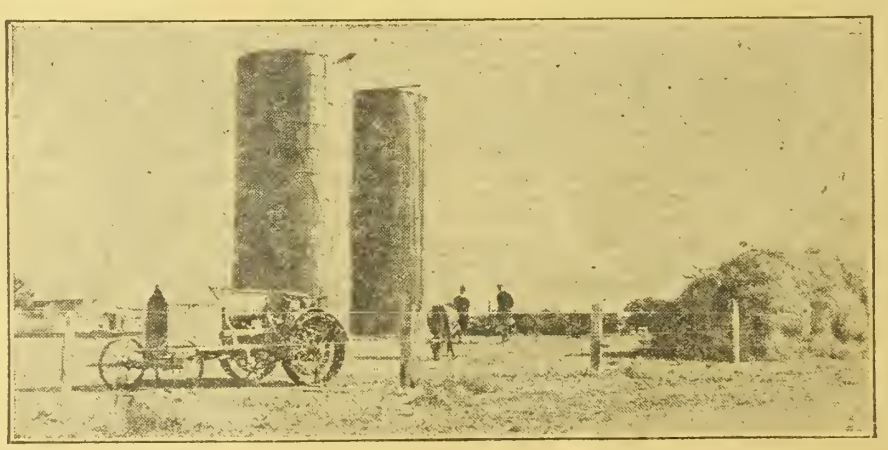
He has also been a strong advocate of deep plowing and careful methods of moisture conservation, as the rainfall is limited and the evaporation great. When he told a group of farmers in one community to fall plow 12 to 14 inches deep they threw up their hands and said it could not be done. One farmer, however, thought he would try it and he put six mules on a gang plow one fall and went down 12 inches on a ten-acre field. The rest of his field was plowed shallow. All of the land was put in corn. The following summer the county agent visited this farm and found a perfect stand on the deep plowed land and about one-third of a crop on the shallow plowing. Neighbors called to see this demonstration and they were shown that there was no moisture in the shallow plowed ground. The result was, deeper plowing throughout that community.

The principal features of the dairy cow development lease are as follows: The farmer agrees to provide sufficient food, shelter, and water, and to exercise due care of the livestock. He agrees to vaccinate all calves for blackleg; to brand the stock; to breed the cows to a registered bull of the same breed; to purchase a registered bull or join a co-operative bull association or circle; to keep all heifers raised from the herd until the expiration of the lease period. He also agrees to ground all barb-wire fences to protect the stock against lightning; to construct one or more suitable silos; to consult the agent of the lessor (county agent) on all points concerning the breeding and care of the herd; to report immediately the birth of each calf by mailing a post card to the county agent and also to report in like manner the death or loss of any animal in the herd.

The lessee agrees to replace any animal belonging to the original herd by death caused by disease, accident or starvation, which may be due to his fault or neglect. If there is loss in the original herd through no fault of the lessee, the lessor shall have the right to select from the undivided heifer increase, animal or animals to replace such loss. Lessee agrees to weigh all milk and keep accurate record of the same on a barn sheet and also keep a record in a book showing the butterfat production of the herd as shown by cream checks. The following specifications are provided regarding divisions:

"It is understood and agreed that each of the parties hereto shall receive one-half of the increase of said herd, same to be divided at the termination of this lease in the following manner: The lessee shall divide the female increase in said herd into two lots as nearly equal in value and number as possible. The lessor then has the right of choice in lots; but all steer calves shall be disposed of at any time between the ages of 12 and 18 months, upon terms to be approved by the lessor before sale, and the proceeds divided equally."

All the milk, of course, goes to the lessee. Provision is made in the lease for taking possession by the lessor in case the lessee fails to comply with its provisions. The contract term is four years. The county agent keeps a card index on every herd and makes periodical visits to the farms and receives constant reports concerning condition of the cows.



Silos on the F. W. Haupert ranch near Bennett, Colo.; stack of Russian thistles used for roughage is shown on the right.

Sweet Clover Supplants Russian Thistle.

Russian thistles have been an eyesore to F. W. Haupert, a farmer at Bennett, Colo. But he has not permitted his prejudice to blind him to the uses of the weed. On the contrary, he has put them up as hay and also tried them in a silage mixture. They have helped him carry through his stock, serving the purpose of roughage. Now, however, he has hit upon a new idea that is worth passing along.

Instead of having the roadway in front of his farm decorated with a pernicious weed he decided to sow this open space to yellow sweet clover. Moisture conditions this spring have been favorable and Mr. Haupert has broadcasted the sweet clover seed along the fence, in the hope that he will secure a permanent stand which can be grazed in summer and which, if it gets a good start this year, will re-seed itself and furnish a constant green border for his farm. Sweet clover is about the first thing to show up green in spring, the last to lose its color in fall, and it remains fresh and green even in the dryest and hottest part of the summer. The wide roadways in the plains country are fruitful sources of weed infestation for adjoining farms, so why not utilize this space for the growing of a crop that can be grazed by the farmer's cattle, or cut for hay?

Mr Haupert reports to County Agent Vanderlip of Arapahoe county that six acres of white sweet clover furnished more pasture for his stock last season than did 28 acres of rye.

Need Community Dipping Vats for Cattle Scab

DESCRIPTION OF PARASITES AND MEASURES OF CONTROL

DR. GEORGE H. GLOVER.

ETERNAL vigilance is the price of success in the livestock business, the same as in any other business enterprise. Animal diseases are becoming more numerous and some of them more virulent and difficult of control. The time has now come when stockmen generally realize that if they are to succeed, the factor of animal disease can no longer be left to chance. There must be a systematic and united effort, using such knowledge and means as we now have at our disposal. To this end, it is absolutely necessary to have a definite plan directed by constituted authority.

Scabies in cattle is perhaps the most persistent and troublesome disease among cattle on the western ranges. If ever the Oriental diseases, Rinderpest, Contagious Pleuropneumonia, and Foot-and-Mouth disease, become firmly established on our western ranges, then real trouble will begin. May each and all of us appreciate our good fortune in this respect and cheerfuly co-operate with state and federal authority in the control of scabies and other contagious or infectious diseases in our state.

Cattle scab is caused by minute parasites or mites which live on or in the skin. It is easy enough to perceive how these mites can be conveyed from one animal to another. Animals can not thrive when infested with mites. There is arrested growth, and in badly infested animals, shrinkage in weight, due to loss of albumen and nutritive elements in the tissue fluids, eliminated as the direct result of irritation from the parasites. Animals spend much time in licking, rubbing and scratching when they should be grazing. There are functional disturbances, lowered vitality, susceptibility to other diseases, and a tremendous loss during that critical period between hay and grass.

There are four species of these parasites affecting cattle: Psoroptes, Sarcoptes, Chorioptes and Demodex. A detailed discussion of the life habits of each will not be undertaken at this time. The psoroptic mites, which cause common scabies, live in colonies on the surface of the skin and spread gradually from the spot first affected. The sarcoptic mites burrow into the skin, each female making a separate gallery in which she lays her eggs. The chorioptics live in groups on the skin, but usually remain localized on the legs or tail. The demodex are microscopic in size and live in the sebaceous glands and hair follicles. Demodectic mange is practically incurable.

Psoroptic scab, while not so dangerous as the demodex or sarcoptic, causes a greater loss because it is more prevalent on our western ranges. Colorado officials, with the co-operation of the Bureau of Animal Industry, have fought scab on the ranges of the eastern slope for thirty years or more. While it has been kept under control, it has not been completely eradicated.

The mites which cause common scab are small gray colored parasites which when mature have four pairs of legs. They can be seen with the naked eye by placing an infected scab on black paper and exposing it to the sunlight. To see them well a low-powered glass is needed. A female will deposit from 15 to 24 eggs, which will hatch in three or four days. The young mites reach maturity and are ready to deposit eggs in ten to twelve days. This gives us an idea as to how rapidly they multiply and also has an important bearing on the interval which should elapse between dippings. Dipping, if properly done, will kill all the mites, but will not destroy the eggs, hence the reason for the second dipping in ten or twelve days. There should be no difficulty in recognizing well advanced cases of scab, but animals should not be allowed to reach this stage, for they have already lost in weight, have depreciated in value, have been spreading the disease to other animals, and are more difficult to treat successfully.

Animals will do more or less licking, rubbing and scratching when affected with scabies, lice or other parasites, or when shedding the winter coat of hair. However, it should be remembered that scabies is caused only by the scab mite. The mites will be found more plentiful around the outer edge of an infected area where the skin is moist. On the contrary, if the scabs and skin are dry, it will indicate that the mites are inactive at this point and they will be hard to find. In scabies the skin becomes uniformly hardened and thickened and this is not true of other parasitic skin diseases. The final test, however, is finding the mites. With the first symptoms of itching and rubbing, cattle should be examined carefully, and if there is evidence of scabies should be treated immediately, to avoid a serious economic loss.

While each species of domesticated animal has its own variety of psoroptic scab they are not intertransmissible, but this is not true of some of the other parasites mentioned. All classes of cattle are susceptible to the common cattle scab, regardless of breed, age, sex, season of the year or physical condition. Old, weak and poorly nourished cattle suffer most, but vigorous animals in feed lots when affected will fail to

(Turn to Page 19.)

Quarantine Order Against Mange.

On account of the prevalence of mange or scab in a number of eastern Colorado counties a quarantine order was issued May 1st compelling the dipping of all cattle offered for shipment in the infected area. The order issued by the State Board of Stock Inspection, and signed by Dr. Charles G. Lamb, State Veterinarian, is given below. The accompanying article was prepared by Dr. George H. Glover, head of the Veterinary Department of Colorado Agricultural college. It gives stockmen full information about scab and methods of treatment and suggests community dipping plants as the most convenient and least costly way of handling the matter.

Sanitary Order No. 24—Whereas, mange exists to such an extent in Kit Carson, Cheyenne, Lincoln, Kiowa, Prowers, Bent and Baca counties and that portion of Las Animas county lying east and south of the Santa Fe railroad, that all cattle in those counties must be considered either infected or exposed to the disease.

Therefore, It Is Hereby Ordered, that all cattle in the above described territory must be dipped and cured of this disease during the summer of 1920, and any cattle offered for shipment during the season of 1920 must present evidence that they have been thoroughly and properly dipped in a dip recognized by the U. S. Department of Agriculture, or they will be required to dip before shipment will be permitted and at time of such dipping and shipment any animals showing signs of being diseased will be retained for a second dipping.

STATE BOARD OF STOCK INSPECTION COMMISSIONERS,
CHAS. G. LAMB, State Veterinary Surgeon.

Kanred Wheat Being Tested on Colorado Farms

HISTORY OF DEVELOPMENT OF NEW STRAIN OF WINTER WHEAT

A. E. McCLYMONDS, Extension Agronomist, Colorado Agricultural College.

FREQUENTLY a new variety of grain gives exceptional yields for a few years, then falls down in both yield and quality. This sometimes causes the farmer, who has tried out a new crop and has expected great things from it only to find himself disappointed in a few years, to be a little cautious with the next new crop that comes out highly recommended. This is not always the seed man's fault. It is comparatively easy to isolate some strain that will give better results in a certain locality, but will fall down completely when tried out under a wide variety of conditions. It is very seldom that a strain is found that will produce better yields or better quality of grain or both.

Again, it is not easy to prove the superiority of a grain that fluctuates widely in grain from year to year. Even if it yields better than other varieties some seasons and falls below them in others, it is hardly safe to say that it is the best variety even though the average for several years is considerably higher.

A new wheat recently developed by the Kansas Experiment Station has given such consistently good results compared with the standard varieties that there is very little doubt but that it is a better wheat to grow wherever winter wheat is adapted than the common varieties. This wheat is called Kanred, taken from Kansas red or Turkey red wheat.

A history of its development might be of interest to the winter wheat growers of Colorado.

The new wheat is a product of a single head of Turkey wheat. In the fall of 1906 the Botany Department at Manhattan sowed 554 head selections and the following season 451 were harvested. In 1908, 79 additional selections were sown and 533 selections were harvested, and 122 of these were selected for increase.

Ten rows of each were sown in the fall of 1908 and 89 of these selections were harvested and sown in the nursery as before and turned over to the Agronomy department, with about 100 strains in June, 1910, for further trial.

From 1911 to 1916, inclusive, several of the more promising selections, including Kanred, were grown in field plots on the Agronomy farm. Since 1914 the Kanred has been grown on the branch station at Hays and in co-operative tests with farmers throughout the winter wheat belt. Milling and baking tests have been made at Manhattan each year.

Kanred is a hard winter variety characterized by the presence of awns, glabrous glumes and reddish grain of the well known Turkey type. The habit of growth and general appearance of the plant cannot be distinguished from Turkey or Kharkof except for one distinguishing characteristic. The awn on the outer glume is a trifle larger than in the Turkey or Kharkof wheats. It also ripens somewhat earlier but is not sufficiently constant for identification.

Outyields Other Varieties.

The early records secured by the Botany Department indicated the superiority of Kanred as compared with varieties usually grown. However, it was not until it had been grown in field plots for six years and in the co-operative tests with the farmers of the state that its true worth became fully demonstrated.

In 1908 it produced 29.5 per cent and in 1909, 30 per cent more grain than the check rows of Kharkof beside it. The average yield for Kanred grown at the station at Manhattan for the years 1911 to 1917 was 4.6 bushels higher than Turkey, and 5.2 bushels higher than Kharkof.

When grown in co-operative tests over the state it yielded higher than the local variety in nine cases out of ten. In the western part of the state Kanred yielded uniformly higher than the local variety.

In 1915 Kanred yielded higher than the local varieties in 19 out of 23 tests; higher than Turkey in 18 out of 23 tests and higher than Kharkof in 19 out of 23 tests. The average of these tests of all farm varieties shows a gain of 3.5 bushels for the Kanred when compared with the local variety, 2 bushels compared with Turkey, and 4.5 when compared with Kharkof. It continued to show an increased yield over all varieties every year since it was first put out over the state.

Earliness and Cold Resistance.

Kanred has headed and ripened on the average fully a day earlier than Turkey red. It was observed that this strain was the earliest to mature in some of the co-operative tests and in others it matured at the same time. It is safe to say it is fully as early, if not earlier, than any other winter wheat with which it has been tried.

It is much more able to survive severe winter conditions than common Turkey or Kharkof. In 1912, when severe winter killing occurred at Manhattan, 90 per cent of the Kanred survived, 80 per cent of the Turkey, and 77 per cent of the Kharkof. Again in 1916, when severe winter killing took place over large sections of the state, it survived. During that season one of the co-operators, Mr. Frank Carlson, in Cloud county, Kansas, reports Kanred survived almost perfectly, while 50 per cent of the Turkey and Kharkof on adjoining plots was killed. Kanred yielded 27 bushels per acre, while Turkey yielded 17.2, and Kharkof 16 bushels per acre. A uniformly higher yield was obtained all over the state that year.

Rust Resistance.

The rust resistance is another characteristic in which Kanred excels the Turkey and Kharkof strains. The red rust does not affect Kanred to the same extent as it does the other strains. It is much more resistant. Careful tests have been made at Manhattan by Prof. J. H. Parker, and Kanred has been found to be remarkably resistant or immune to certain kinds of black stem rust.

Stooling.

Kanred stools out much more readily than Turkey or Kharkof and this desirable characteristic has sometimes caused it to make a lower yield when put into the general fields. Unless the farmer realizes its ability to stool he is quite likely to plant it as thick as he is commonly accustomed to plant wheat.

Where it is the custom to plant Turkey or Kharkof at the rate of 30 pounds to the acre on the dry lands, 20 pounds is enough to plant of Kanred. On the irrigated farms a slightly lighter planting than is customary generally gives a heavier yield.

To show what the farmers of Kansas think of Kanred wheat, there were 50,000 acres of it grown last year, and it is estimated that 1,000,000 acres will be put in this coming fall.

Kanred in Colorado.

To show where Kanred has been tried out in Colorado I will give a brief history of it in this state.

Boulder county under the direction of County Agent Simpson has tried Kanred out for two years. An average increase over other varieties from 4 to 6 bushels has been obtained.

El Paso county has tried it out for two years also. Mr. Lauck, who was formerly county agent for El Paso county, had four demonstrations and it yielded from 4 to 8 bushels more than other winter wheats.

Morgan county bought a carload last fall through the efforts of County Agent Walter J. Ott. This was seeded late last fall, but came up and has made better than average growth so far this season.

Each county that has tried it is planning on growing a larger acreage the coming season.

One other thing that is worthy of notice. When Kanred wheat is brought from Kansas to Colorado the quality and plumpness of the grain improves to a great extent. This is probably due to better ripening conditions than Kansas is favored with.

A definite effort is being made by the county agents of the eastern slope and the Extension Agronomist at the college to get each county to take up the seeding of some demonstration plots of Kanred and compare it with the local varieties this year.

Mexicans shearing sheep by hand.

Shearing Time on a Sheep Ranch

A STORY TOLD IN WORD AND PICTURE.

FRANCES H. BROWN.

FIFTEEN hundred sheep, whether scattered over an area that would comprise several eastern farms in its boundary, or packed in a corral like sardines in a box, is an interesting sight. The numberless question that would arise in an uninitiated mind as to the management and care of such an immense herd are in all probability both amusing and somewhat tiresome to the owners.

However, the Derby Bros. on the Twin Hill Ranch in Cheyenne county, Colo., not only patiently and courteously gave all desired information on the subject, but cheerfully furnished kodak pictures that speak for themselves and add to the interest of the story.

It's a rather amusing thing that a great many eastern people believe that if one stays constantly with these big herds of sheep for a considerable time that they will lose their mind and go around bleating like the sheep!

As lambing season approaches the herd is divided and subdivided and extra men employed, a man to each division which has its own number. Pens are allotted to each small herd and are correspondingly numbered, so there is no confusion whatever in bringing the sheep either in or out.

About the middle of each afternoon the baby lambs that have arrived during the day are picked up and hauled in and numbered also. Sometimes they lead the men a merry chase before they are caught. They can run like a deer, and are often lost. If the treacherous coyotes don't find them they wander around to the neighboring houses, or join the herd the next day.

The task of reuniting the lambs with their mothers is not always an easy one. The distracted ewes cannot or will not always recognize their offspring and disdain to accept a substitute, consequently the orphan asylum is sometimes taxed to its limit and the helpless infants must be hand fed. When the task becomes too great for the busy ranches to handle the surplus they are sold or given to the neighboring children for pets and are successfully raised on cow's milk.

Lambs are fastidious little fellows and insist on the best of everything. My children had one pet that would drink water out of nothing at all except as it was freshly pumped from the well and the lead pipe lowered for him to help himself out of the bowl of it. Another insisted in helping herself out of the feed bins in the cellar and was especially fond of making informal calls via the kitchen door, when no one was in to prevent her from nibbling on anything that happened to suit her fancy, in reach of her dainty nose. Once she appropriated the flowers on her little mistress' new spring hat which had been carelessly left by that young miss on the sitting room couch. She did numberless other provoking stunts, but the children remained her loyal defenders always, absolutely refusing to part with their pets at any price.

Shearing time is another big feature and comes immediately after lambing season. It had usually been done by a band of expert Mexican shearers, consequently when the children learned the shearing was to be done by electricity they were all eagerness and could hardly wait to go over the hill to the ranch house. To be quite frank, I was anxious to see the performance myself. Four men did the shearing each of the two motors running two pairs of shears. The operators had nothing to do but hold the sheep and guide the shears, clipping the fleece clean and close; in fact, sometimes too close. One man sheared from ten to seventeen an hour, while an attendant rolled the wool out of the way. Each fleece is rolled and tied up and dumped into a long bag which has the open end fastened to a high rack. Another man stands inside and stamps the wool down tight. When it is full it is fastened securely and piled back to await shipment.

It keeps about four more men busy to catch the sheep and bring them in, as the shearers are ready for them. The sheared ones are turned out into another pen.

Shepherd or collie dogs are splendid assistants on this ranch. They are carefully trained and taught many tricks and display almost human intelligence in caring for the sheep. The ranchmen and the dogs are faithful friends and together they manage to cheat the wily coyote out of many a feast on lamb. The coyotes are trapped sometimes, but it's rather a difficult and uncertain procedure, their sense of smell is so acute. The most successful method seems to be chasing them in autos with a pen full of hounds in the back of it. When Mr. Coyote is all tired out the dogs, fresh for the fray, are turned loose and soon win the battle.

Truth in Fabric Bill.

This widely discussed bill now before both houses of congress is worthy of consideration by all those who are interested in lowering the cost of living and a square deal to the wool producer as well as the wearer of woolen clothing. If passed this will result in the lowering of the cost of woolens. Its purpose, as stated in the introductory paragraph, is "To prevent deceit and profiteering that result from the unrevealed presence of substitutes for virgin wool in woolen fabrics purporting to contain wool and in garments or articles of apparel made therefrom." If this bill is passed it will be necessary for manufacturers to label all cloth as to what it actually contains in the way of virgin wool, shoddy, hemp, etc. We are paying large prices for clothing which is largely made up of old rags and does not give the service that we should get from virgin wool cloth. The bad feature of the shoddy proposition is that it is sold as virgin wool material. The people are fooled by misrepresentation whenever they purchase a piece of so-called woolen cloth. Write to your congressman about it at once. Urge him to work and vote for the Truth in Fabric law.—H. A. L.

Machine shearing on the Twin Hill Ranch in Cheyenne county, Colorado.

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Prepare to Store Wheat.

With wheat nearing the harvest stage farmers are confronted by a car shortage and lack of facilities for transporting the crop that is more serious than at any time. The railroads are making an effort to secure better distribution of cars, but even with the best results this cannot provide more cars—and that is the problem. For the farmer there is but one thing to do and that is to assure himself of storage facilities. Metal grain bins are on the market from 500 bushels to 5,000 or 6,000 bushels capacity, which furnish absolutely safe and convenient means of storing wheat.

A good suggestion comes from a manufacturer of grain bins, who proposes to relieve the car shortage by placing steel tanks or bins on flat cars for hauling wheat. Platform cars are more plentiful than box cars and it seems perfectly feasible to equip such cars with twin tanks, each with a capacity of 500 bushels. The suggestion is worthy of consideration by the Interstate Commerce Commission. The world needs bread as badly as ever and while many farmers can help themselves by providing temporary storage, most of them need the money at harvest time. It is up to the railroads to take advantage of every practical plan proposed that offers a way of handling grain from the farm to the mill.

Morgan County Shipping Co-Op.

The first co-operative livestock shipping association to be organized on a county wide plan was formed recently in Morgan county, Colo. Prof. R. W. Clark, livestock specialist of the Agricultural College, who has been pushing organization at various points in the state, was present to inform the farmers concerning details. Preliminary work had been done by County Agriculturist Walter J. Ott and the farmers were eager to try out the plan. They decided that a county wide organization would answer their purposes better than the community plan. Morgan county shipped out in 1919 from various stations 667 cars of mixed stock, about one-third of which were hogs. These hogs nearly all came from different farms and it is this business which will be an important feature of the new shipping association. It is planned to secure a manager, who will devote all of his time to the work and who will travel over the county, giving farmers information about market conditions and lining up livestock to be shipped co-operatively.

The officers elected were as follows: Nels Christiansen, Brush, president; N. R. Lindburg, Snyder, vice president; R. L. Ripley, Fort Morgan, secretary-treasurer. These officers, together with E. E. Morse of Wiggins and John A. Holmburg of Orchard, constitute the directory of the association.

Following the organization meeting a session was held a week later with the directors and Prof. Clark, where detailed plans for putting co-operative shipping into actual operation were discussed. The new association will get in touch with the officers of the Larimer county shipping asssociations and the state organization with a view to working out their problems in the most practical way. Co-operative livestock shipping means for the farmer that he gets the highest market value, minus only a small commission paid to the manager for handling the shipment. Under the old conditions small bunches of livestock from individual farms were picked up by speculator-buyers at most any price the latter saw fit to offer.

There are now nearly thirty of these associations in active operation in the state.

A Plan for the Week.

Sunday, according to the calendar, is the first day of the week, but in the American home it is practically the last day—a climax toward which all the interest and activities move, making it a day for family life at its best. The family ideals determine, not only its use, but the nature of the household work for the day. One family translates the thought of a day of rest into habits of laziness, another considers it a day for feasting and emphasizes the heavy Sunday dinner; one believes it to be for the promotion of neighborliness and devotes the day to visiting, another thinks it is intended to be a change from the labors of the six week days and gives it to recreation and outdoors. Modern ideals of parental duty may produce a special responsibility on the part of the father toward the small children so that he assumes a Sunday care of them that turns the day into one of comparative rest for the mother. Some hold to the old and venerated ideal which sets apart the Sabbath to be a time for religious instruction and worship; these attend church and Sabbath school.

Monday usually finds the entire house in more or less disorder after the semi-holiday of Sunday; therefore it becomes the logical time for setting in order, sweeping, dusting and doing light cleaning. It is, too, a convenient day for baking and other general preparation that will reduce the cooking for the following day, which is to be wash-day. The clothes which are to go into the weekly washing should be collected and looked over; there are always some articles that need the kind of mending which can be better done before, rather than after laundering, such as darning table linen, and mending lace and other garment trimmings. Assorting and mending the clothes and putting to soak overnight such as require it, is a plan of work that divides between two days the time and labor that are required to do the family washing. Consequently it reduces the weariness of the task as a whole.

Tuesday should be the universal family wash day. It is early enough in the week to permit the ironing to be finished without dragging along to the very end, and yet it has a previous day of preparation, not only for the washing itself, but for lightening the daily work of household routine with its inevitable three meals on wash day. The plan of Tuesday's work will include an oven dinner, which reduces the necessary attention and labor given to the preparation of food.

Wednesday. It is left for the woman to decide whether or not this shall be ironing day. For many women, it seems desirable to separate the washing and ironing, both of which demand that she shall be on her feet almost continuously. The intervening day may well be devoted to sewing or some similar work that admits of sitting. There is a too prevalent tendency to conclude a piece of work by hurrying to "get it over," that may lead to an intemperate devotion to the task itself without a due recognition of the fact that efficiency is not so much a matter of time as it is in methods which finish the work in hand and then leave a residue of energy and a state of mind capable of enjoyment. If ironing is to be done on Wednesday, it deserves to be done with good tools that save the time, labor and comfort of the housekeeper.

Thursday is the day when the unusual, irregular, but necessary things may be given attention; there are a general looking over of cupboards and household stores, the polishing of silver, airing of bed clothing, and kindred tasks that can be grouped or separated. There is a bit of work that may properly belong to this day, namely, the planning of meals for a week. Competent stewards in hotels and restaurants plan the meals for a week or more in order to economize in material by properly combining foods. The housekeeper in her narrower domain can lighten her labor, save materials and reduce cost when she has a plan of meals for consecutive days.

Friday is popularly considered as sweeping day, although the housekeeper who is enterprising enough to have a plan for the week is likely to make every day a cleaning day, in a limited sense of the word. With her housekeeping well in hand, she may keep Friday afternoon for visiting, or permit the claims of a club composed of a group of neighbor women to have first place; it may permit a trip to town for shopping, or a real visit to a relative. Such use makes this an important day and its privilege is a duty, which, if properly discharged, is far from being a negligible part of housekeeping, because it brings into the home new topics of conversation, forms taste, and fosters friendships that have lifelong influence.

Saturday is the busy day when cleaning house and extra cooking in preparation for Sunday take a prominent place in the day's work. Putting on fresh sheets and special care of the beds, getting clean clothes in order for the family. All these things require time and should not be neglected.—HELEN HARBALL.

Pigs will need nutritious feed when they are weaned. Skimmed milk is one of the best.

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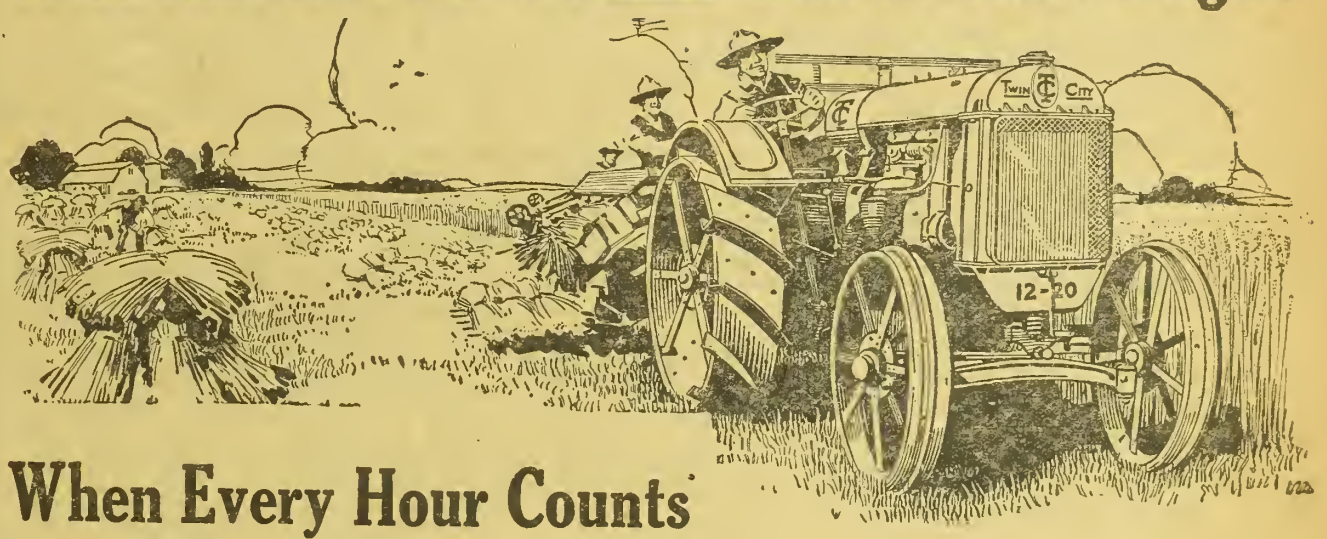

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The Lesson in the Hides.

"Will you please give me a recipe for tanning hides for leather and robes? I am offered only 10 cents per pound for hides at Joes and am asked $1.65 per pound for leather. Baby's first step shoes at Montgomery Ward, Kansas City, with a shipping weight of eight ounces, are $2.29.—Wm. A. Boyd, Kirk, Colo."

The above is one of many requests we have received lately for copies of the formula for home tanning of hides and fur skins. Hides are plentiful just now. They represent the stock losses that occurred during the April blizzards. The prices are low, because "the supply is plentiful." But at the other end of the hide there is leather to buy in the shape of harness, shoes and the like, and prices are still at the high extreme. It isn't any wonder that many farmers are anxious to try tanning. This like many another big industry, has been concentrated at a few manufacturing centers. The farmer who produces the raw product, ships it to market at the other fellow's prices and buys back his harness, saddles and shoes also at the other fellow's prices. Between the time the hide leaves the farm and its return as a manufactured product, transportation has taken a double toll, labor has exacted a tiptop wage, the manufacturer has skimmed off his profit, the wholesaler his, and then the retailer takes a whack at it. They all have to live. Modern civilization is a complex affair.

Is it any wonder that the man out on the farm often asks himself whether it is worth paying for? He has been hit both ways so often that he has begun to turn his thoughts back to primitive ways and days. Tanning, spinning, butchering, are lost arts that are being revived here and there in an effort to lighten the load. Other straws that point to changed conditions are the schemes for co-operative buying and selling; co-operative handling of livestock as a breeding proposition and for shipping small lots to market; co-operative associations of farmers for veterinary service, to reduce the cost of providing for the health of the stock and insure constant sanitary safeguarding; co-operative marketing of fruits and vegetables. Are these the signs of a new social order, or merely temporary outcroppings of discontent with established economic conditions? These things are worth thinking about. And the farmers are thinking.

If the mosquitoes have been bothering you and you can't find them to kill them, watch the screen door and windows at dawn and again just at dusk. They always try to get out of the house at those two times.—Oklahoma Farmer-Stockman.

If in need of advice, ask Western Farm Life Service Bureau.

What Is the Farm Bureau Worth?

We received a letter from a farmer recently objecting to an article in which county agent work was given favorable mention. This farmer said it was unfair to credit county agents with bringing silos, purebred livestock and better schools into a county. As this was the first letter of the kind ever received by the editor, it is worthy of attention and comment. The farmer who wrote it is honest in his opinion, but he has not had the opportunity for investigation that has come to the writer of these lines.

In any discussion of county agent work, let it be understood that personalities are not being considered. We are thinking of the work, not of the particular person who is paid for doing it. Even county agents, the best of them, are not perfect. They average up just like farmers; some are good, some are only medium and some are poor. The best men survive and hold the confidence of the farmers, just as the best farmers succeed at their business. That question is beside the point; we are dealing with the advantages of the work and presuming that it is in the hands of a man who has the necessary training and qualifications.

Originally county agent work was a one-man proposition, but under present conditions it has developed into organized form with the farmers themselves guiding and supervising the work through the Farm Bureau. This organization of farmers, by farmers and for farmers, is educational in character and conflicts with no other farmers' organization, nor does it seek to supplant any organization, whether the same be social, economic, political or whatnot. A farmer can belong to the Grange or to the Union, which are economic and social, or to the Non-Partisan League, which is a political organization, and still find it necessary to become a member of the Farm Bureau, if he wishes to keep his fingers on the pulse of agricultural development. Membership in any other organization is no bar to his membership in the Farm Bureau, neither does the Farm Bureau take the place of other organizations for farmers whose inclinations are toward a more intensive study of economic problems, or who desire the social features of the Grange or the Union, or who wish to accomplish certain objects politically.

Then the farmer asks, what are the particular things which the Farm Bureau does that make membership in it essential? The answer is that the Farm Bureau takes up problems that are local to its members. It begins with the community project organization; the voluntary grouping of farmers who have a common problem to solve. It may be the eradication of prairie dogs; a fight on grasshoppers; combatting the web worm; the need of purebred sires; a demand for co-operative livestock shipping; or co-operative fruit and truck shipping; an exchange of labor or machinery at silo filling time; the building of more silos; a feeding problem; tests of new varieties, or standardization of varieties of grains; better roads; better school facilities; better marketing facilities; cream grading; the application of irrigation water to crops; some method of soil handling for dry land crops, such as summer fallowing. Or, a dozen other things, the problem depending upon the locality and the farmers themselves being the judges of what should be taken up by any community group for their own improvement.

The community group leads to the general county organization, the plan of work being decided on usually at an annual meeting of all farmers interested in bettering their own methods and making the returns from farming surer.

The next point is the relation of the county agent to this outline of community projects. Why cannot the farmers proceed without his aid to the solution of their problems? They may do so and there are examples of Farm Bureaus that are functioning without a county agent, but in each case it is a temporary expedient. The whole plan hinges for its real success on the properly qualified, trained agriculturist whose business it is to keep things moving; to keep the groups of farmers in direct touch with the experiment station, the agricultural college and the United States Department of Agriculture; to keep the channels of information open in both directions; to provide the help of specialists from the college who may be needed on certain projects; to order and mix poison for killing the prairie dogs and hoppers, to deliver it and see that the men charged with the work do it properly; to go with a delegation of farmers before the county commissioners and get action on road work; or in the creation of pest districts; to select purebred livestock on the breeding farms at a distance and accompany the shipments back home; to get figures on the cost of silos; to give details on how to build such types as may be built by the farmers themselves; to get behind the county or community fair; to act as labor agent for the farmers; to assist them in getting blackleg vaccine and show them how to vaccinate their calves, if such service is demanded. In short, to act as the agent and representative of groups of farmers who are working out this betterment program; to keep projects moving forward. Space limitations do not permit of further details. Let it suffice to say that the writer has mentioned nothing in the way of county agent work that he has not personally seen accomplished and he has not attempted a complete list, but merely suggested a few of the things that are being done for the farmers and with the farmers by county agents in Colorado and neighboring states. Again let us emphasize that it is the work and not the person we are discussing.

The writer speaks from personal knowledge and conviction when he says that without county agent work (which means Farm Bureau work under present plans), Colorado would today be numbering its silos only by the hundred instead of by the thousand; purebred sires would be the exception instead of the rule; there would be no organizations of breeders of registered stock; there might be one or two livestock shipping associations, but there would not be twenty-six of them; no systematic posting of whorled milkweed areas would have been possible; no systematic eradication of prairie dogs; no community action on grasshopper infestation; no such impetus to corn production; no development of Russian sunflowers for silage; no standardization of grain varieties; no community good roads days; no large development along dairy and beef production lines as resulted from the trips of county agents to breeding centers and the importation of good stock. In short, take county agent work out of Colorado, and we would be ten years behind in agricultural progress.

We realize that not all of our counties are doing this organization work and there are many farmers in the unorganized counties who have not had opportunity to note this development at first hand. Such farmers are entitled to further information and Western Farm Life will gladly answer their questions by letter. To farmers who live in counties that have the Farm Bureau work and who are not taking part in it, we would recommend getting in communication with active members of the bureaus and learning from them what has been done and what is being accomplished through the educational program. The work speaks for itself.

It is wrong for a farmer who is successful on his own farm to withhold his support from community betterment plans on the ground that it can do him no good. The satisfaction of helping the less advanced and more poorly financed farmer is sufficient reward for the successful man who finds himself, as he thinks, beyond the aid of the county agent. We should never get either too prosperous or too self-satisfied to help our fellow man. The opportunity to join the Farm Bureau is to be presented to every farmer in every organized county of Colorado during the summer. Think it over men; you will find it worth while in dollars and cents and satisfaction.

Alvin T. Steinel
Managing Editor.

The Branding Iron

Dr. Glover, head of the Veterinary Department at Colorado Agricultural College, in a recent statement called attention to the fact that potatoes, among other common vegetables, contain a poison known as solanin. If this announcement was intended to discourage consumption it was superfluous, the high price having already accomplished that result.

* * *

County Agent Raymond Miller, in the Castle Rock Record-Journal, says: "We are encouraging all farmers to poison their own dogs this year." Don't get excited; the item was headed "Prairie Dogs."

* * *

Word has been sent out by Prof. R. W. Clark, Livestock Specialist for Colorado Agricultural college, that the Center Co-operative Livestock Shipping Association, formed last year, with a membership of nearly 100 farmers, has shipped out 56 carloads of stock and did a business to the value of $132,000 at a saving to its members of $4,200. The cost to the farmers of handling the livestock was $861.

* * *

A good suggestion worth trying comes from the Missouri Board of Agriculture, to the effect that Sudan grass and cow peas, sown together, provide splendid midsummer pasture. The combination of the two plants is excellent and should give a heavy stand for grazing, if put in on good soil and well watered.

* * *

"Is your husband much of a provider, Malindy?"

"He jes' ain't nothin' else, ma'am. He gwine to git some new furniture providin' he gits de money; he gwine to git de money providin' he go to work; he go to work providin' de job suits him. I never see such a providin' man in all mah days."—San Francisco Chronicle.

* * *

No Gas—No News.

Owing to a break at the plant of the Otero Gas Company in La Junta, there has been no gas this week and consequently the Tribune, like other consumers, has been forced to worry along in the best possible way.—Rocky Ford Tribune.

* * *

Some of the weekly newspapers have been advocating that the government pay for information from the Department of Agriculture that is now published free for the benefit of the farmers. The line between news matter and advertising is well defined and well understood by all publishers. It would be folly for the newspapers to expect the Department to buy space for the publication of informative and educational material developed by research and extension work. The interest of the reader is paramount and the reader is the taxpayer who contributes his share to the upkeep of departmental activities. Government bureaus often seek to impose on newspapers and farm journals, but very little real advertising "gets by" the editorial desk these days. There is a legitimate field for the development of advertising in various governmental activities, but no advantage can come to any group of publishers who seek to restrict the output of educational information by classing it as advertising.

Uncompahgre Valley Wool Pool.

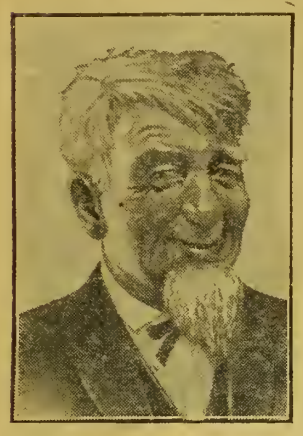
The farmers of the Uncompahgre valley are this year pooling the small clips of wool. This is being done through the Farm Bureaus of Delta and Montrose counties. While the amount of wool consigned this year will be small, it will nevertheless demonstrate the practicability of this method of handling the clips from the small flocks.

Most of the wool pools in the country today were started in a small way and have grown at a rapid rate as the growers learned to appreciate their value.

Not only will it tend toward better returns in cents per pound, but the quality of the wool brought in will be better. This will be accomplished by furnishing the farmers with information as to the way of handling the sheep while the wool is being grown and the best method of preparing the wool for market. Often the wool comes in in a dirty condition, which has depreciated its value greatly. The results obtained by this pool will be watched with interest.—H. A. L.

Comment by Farmer Putnam

OUR MISSOURI FRIEND ATTENDS A DAIRY MEETING AT THE CASTLEWOOD SCHOOL IN THE CLARK COLONY



THE Bible sez a prophet is not without honor save in his own country and I guess that's the truth. I found that out when I went to a meetin' in the Castlewood school house. Nobody there knowed who I was and that school is right in my own county! Even the new county agent Mr. Vanderlip, didn't know me. He called on the editor to git up and tell all about who Farmer Putnam is and what he is. Well the editor kind-a roasted that poor county agent. He sez a county agent is supposed to know all the prominent farmers of his own county, and that if he would take a little time to look around at Salem he would find Farmer Putnam. Well all this time I was a-settin' in the back of the hall listenin' to the conversation and laffin' about them not knowin' me. Since I've had my whiskers shaved off lots of farmers don't know who I am. They say, "Why that young lookin' feller couldn't be Farmer Putnam; we know Putnam; he's got a beard. We seen his pictur' in the papers."

This here Vanderlip is a new man in Arapahoe county, fatter than their old county agent, but just as lively and full of pep. He comes from Kansas, but has been out in Colorado long enough to git used to our way of doin' things. He comes from the western part of Kansas, havin' swum in and fished fur bullheads in the Solomon river. He likes his new work, but he don't think fishin' is quite as good in Kiowa and Wolf cricks as it was in the Solomon.

Well this was a Grange program on dairy feeds, Mr. Lindgren doin' the talkin' on balanced rations and the rest of us goin' along to demonstrate how a balanced ration could be assimilated.

Castlewood school is located in the Clark Colony off southeast of Denver and is mostly small farms with alfalfa and fruit trees. Lots of the farmers has got cows because they know it pays to use the alfalfa on the place. They sell whole milk to Denver distributors and they has lots of trouble with their test. People livin' in Denver and buyin' milk from them distributors sez the test runs purty even—nobody ever got more than 3½ per cent butterfat in the milk. The farmers that produces it sez their cows vary in test but the returns they gits from the dealers is allus low. One man said he thought he'd try and see whether the dealers really give 'em a fair test or whether they paid on a "flat rate," so he put a gallon of water in every can of cream fur a week and he got the same test right along! He was a tellin' us that he thought of sendin' in a empty can next, and seein' if this would give him the same "low test." I reckon it would.

Our Dairy Commissioner, Prof. Morton, is gittin' after the creameries and milk dealers. Two creamery firms got fined not long ago by a Denver court fur cheatin' the farmers on the test. They been gittin' by with it a long time—some of 'em—but the farmers is raisin' a fuss about it and so our courts is gittin' busy.

We was tellin' them folks in the Clark Colony that the way fur 'em to do was to git a Babcock tester and put it in their school, have a teacher that kin test cream fur the farmers and teach the high school pupils how to do it, then they will have somethin' to go on if the Denver dealers cheat 'em.

One of the farmers, Mr. Faulhaber, sez the dairy business don't leave the farmer much profit. They git 80 cents a pound fur butterfat now, but grain costs three times as much as it did when butterfat sold fur 40 cents. That's the way with most everything the farmer has to buy, it costs three times what it used to cost and the price he gits has gone up only half that much.

Mr. Lindgren told 'em some things about feedin' their stock. He sez, the cow's instinct is to produce milk fur her calf and we have to feed her so she'll give more then the caff needs, and we kin then take the surplus. Now a cow's milk is made up of protein, carbohydrates and fat and to make her give milk we has to give her feeds that has them three things in it. When we give her enough of each of them things it's called a balanced ration. Now, when we give her only enough to keep up her body. she'll take the fat off her back and put it in the milk. The way it works is, the more of the right kind of feeds the more milk a cow will give. But you cain't take a beef cow and feed her up, so's she'll give much milk. The cow has to be fixed up on the inside with a milkin' system—barrel, tank, faucets, etc., just like a modern plumbing system—and she's got to have more than that. The thing behind it all is her breedin'. If she ain't got that her fancy fixin's ain't a goin' to make a good milk machine outen her, even if we give her 15 pounds of grain a day. Breedin' ain't nothin' but natural inclination. That's got to be born in a cow.

It's just like a man who wants to be a great painter. He might have a long slender hand that kin hold a paint brush artistick like; he might have hair hangin' down to his shoulders in long curly locks; he might wear a long, loose bow tie and still if he wasn't born with talent to paint and a eye fur mixin' colors he couldn't produce a chromo that would ornament the offis of a livery stable.

It's the same way with a good dairy cow, milkin' qualities is inherited and by qualities I mean that she likes to give milk jest like the real artist likes to paint pictures, or the writer loves to write books or pieces fur the paper. (See present article fur example of rare talent.)

Now that kind of a cow is born and not made and she cain't do her best work onlessen she gits kind treatment and lots of feed of the right kind. I reckon them farmers in the Clark Colony is good feeders, but many of 'em ain't acquainted with their cows. Mr. Lindgren told 'em they ought to keep a barn sheet and put the weight of every bucket of milk down and figger out the combination of feed that gives 'em the best results. Most of 'em has got plenty of alfalfa hay and a few has got good corn silage. If the silage is rich in grain and the cow is just a ordinary fair to middlin' producer why not much dry grain is necessary, but if she's got good milkin' capacity and wants to keep busy why it'll pay to feed her purty liberal grain on top of the alfalfa and silage. Alfalfa is a protein feed and our corn silage is generally cut late, so's it's purty well matured and that gives us a good balanced ration and one with lots of succulence. Mr. Lindgren told the farmers that if they didn't have no silos they ought to raise root crops, rutabagas and such, because cows has to have juicy stuff to keep the milk machinery goin' right. It's just like fruit fur humans. We soon feel it in our system if we don't eat some fruit right along.

Some farmers expects their cows to keep producin' when all they give 'em is dry feed and some cold water. They kin live on that and it might be a balanced ration, accordin' to the books, but no cow kin do her best under them conditions, especially if it's winter and the water is ice cold. If you chill the cow her milkin' apparatus gits kind-a contracted and clogged up and she has to eat more grain to keep her warm inside. If she gits water that has the chill took off, and some silage and then enough grain and hay to balance up things she'll give you milk in gratitude, if she's built right and bred fur milkin'.

Now in summer it's easy to satisfy her because pastur' grass has got all them ingredients and the juice too, so cows is at their best on grass. But that don't last long and the dairy farmer has to have a income all year round or he cain't afford to stay in the business. They lose money—lots of 'em—on their herds if you just figger on milk sales, but the buildin' up of the farm by manure, the hogs that follers the cows and eats what's left over and the calves that goes to the butcher is the by-product that keeps us from doin' business at a actual loss. We got to look after the caff end a little better. Some of them Holstein bull calves is big enough in frame to make fair beef steers and a little work in feedin' 'em to bring out the fat would be a good thing.

Thos. Jefferson Putnam.

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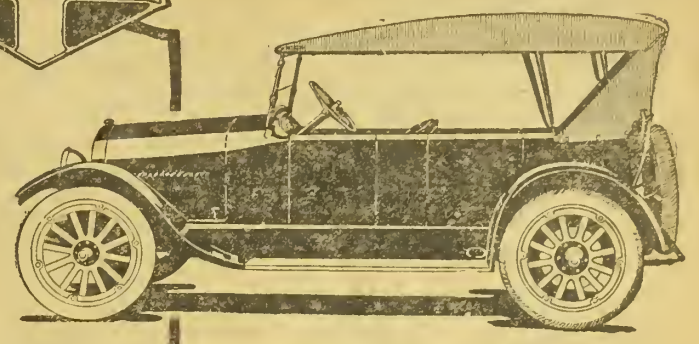
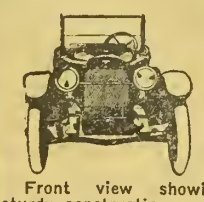
TULSA



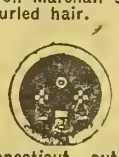
Side Curtains snap on quickly—open with the door.



Front view showing sturdy construction.

Spring bolts quickly and easily oiled with can.

French pleated upholstering on Marshall springs and curled hair.



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Rear view showing plate glass window, extra tire carrier and long crown fenders.

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The profiteers not only take the world as they find it, but also try to take it all at once.—Kansas City Star.

"If you stand with your back to the south what have you on your left hand?" asked the teacher during the geography lesson. The small boy thought, considered his hands, and gave the right answer. "Fingers, sir," he replied.—London Chronicle.

Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and through the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

ANNOUNCEMENT.

In future no inquiry reaching the Service Bureau will be answered unless the questioner signs his name and gives address, so that a reply may be made by letter. All inquiries are answered by letter, but it is possible to publish only such answers as are of general interest. Only initials are used in publishing questions and these are omitted in case the subscriber asks it. Please sign your letters if you wish them answered.

Sunflowers at 8,500 Feet.

Will Russian sunflowers do well at about 8,500 feet? At what stage should they be cut for fodder? I have no silo. Can they be used without a silo?—J. M., San Miguel county, Colo.

We do not know whether the crop will do well at such an altitude, but would advise you to give it a trial. Sunflowers were raised to maturity last season in Saguache county at around 8,500 feet in one case, but not sufficient information is at hand to say whether they will do well in your locality. They can be used for fodder, but if you succeed in bringing them to the proper stage of maturity we would certainly advise putting them in the silo. In Europe they are used sometimes in the way you indicate, namely, cutting them before they are mature and piling them up to a height of 4 or 5 feet in ricks and covering with straw and a layer of dirt, so that they will be packed down tight. This keeps them green and makes a palatable feed for winter use. We do not know of any trials made in this way of handling them in Colorado, but would suggest that you test them out. If you handle them in this way it is best to cut the sunflowers before they begin to bloom. If you grow them for silage, they should be about one-half in the blossom stage when cut.

A Naturalization Question.

Is it required by the naturalization law for me to produce two witnesses that have known me for 25 years in order to obtain final papers? My understanding of the law is that these witnesses must know me for five years only. —J. M., San Miguel county, Colo.

Witnesses need know the applicant five years. If you wish to assure yourself further you may write either the clerk of the United States District Court at Denver, or the clerk of the State District Court within your district.—Hamlet J. Barry, 724 Equitable Bldg., Denver.

Starting With Milking Shorthorns.

Ans. to A. A. M., Lincoln county, Colo.

I have your inquiry asking for advice on the starting in the dairy business with $1,000. You state in your letter that you are interested in Milking Shorthorns. There is a very strong demand for this particular breed at the present time and you may experience some little difficulty in locating what you want. You also mention that you want to use a part of this money in the purchase of a bull. As this is one of the important steps in livestock breeding you should be careful to select something that will be able to increase production on any of the cows that you may select.

I would suggest that you purchase grade cows as you are anxious to get started in production immediately. In buying the cows you could buy those that have been bred, which would do away with the necessity of your having a bull the first year; or you might purchase a calf and let him develop by the time you are ready for him. In this way it would require less money for you to get a bull than to buy one ready for service right on the start. A Milking Shorthorn bull of serviceable age will cost you at least $250 for anything that would be at all desirable. By purchasing a calf you may be able to get something for as low as $150. The strong demand for Milking Shorthorns makes it rather hard to find what one would want to buy without considerable looking around. I would suggest that you spend some time with the county agent at Castle Rock, Mr. R. G. Miller, where there are quite a number of this breed. You may be able to buy some very good bred heifers or cows in this section by taking one or two at a place. Grade cows will cost you from $125 to $200 each, purebreds from $300 to $500 each.

By buying the bred heifers and cows you would have no need for a bull until next year, and by that time you would probably have money to purchase what you would want. I believe this would be the best advice for you under present conditions. There is some difference in opinion at the present time regarding the type of Milking Shorthorns to select. Every herd of cows of the Shorthorn breed has some very good milkers. Some of these would not be considered strictly Shorthorn type, but by selecting that kind and buying a bull of the Milking Shorthorn type, you might be able to get in the business gradually and in a desirable way. It might be advisable for you to visit some of the herds where this type is being developed, such as that of the Hinman Silo Company at Golden, Colo., or the Pine Valley Farms at Colorado Springs. Both parties are developing some excellent Milking Shorthorn cows.—H. A. L.

Cattle Run On Highway.

Are cattle allowed to run in the county road that crosses my place? I have a legal fence on both sides of the road. Adjoining neighbors do not have their road fenced. If I can stop this, how must I proceed and what is the punishment?—A. S., Pueblo county, Colo.

Yes, this is against the law, if the road or lane is fenced on both sides by a lawful fence. We quote from the law the following paragraph covering this point: "Section 8. It shall be unlawful for the owner or owners of any animal or animals knowingly to cause or permit said animal or animals to graze or run at large in any road, lane or public highway that is fenced on both sides with a legal fence, and in case any animal or animals, while so running at large, shall be killed or injured by any vehicle of whatever nature, the owner or driver or person in charge of the said vehicle shall not be liable for damage; provided, that said killing or injury shall not be willful or malicions. Nothing in this section shall be applicable to animals having a person or persons in charge, which are being driven on public highways."

Complaint against parties running cattle in the road should be made to your county sheriff or to your local constable, calling the attention of this officer to the above quoted paragraph. If the officers do not show an inclination to enforce the law, take the matter up with the district attorney at Pueblo.—

Ownership of Driftwood.

A. owns a farm bordering a river that forms the boundary line between the land on his side of the river and an Indian Reservation on the opposite side. Does A. own the logs or driftwood that lodges in the river and bars opposite his farm? Has he a preferred right to driftwood which lodges on open land from

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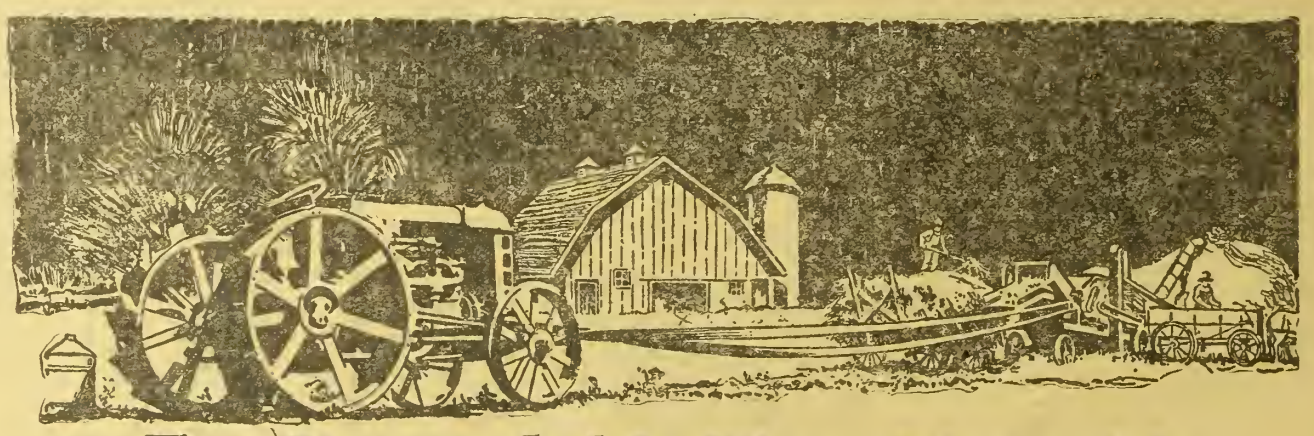

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the fact that it is nearer his farm than it is to B.'s farm? The land occupied by the river is not included in the deeds or patents of the farms bordering it.—M. E. C., Wyoming.

In my opinion the owner of the land is entitled to mere driftwood upon which no labor has been expended by anyone and in which there is no property right. He is not entitled to logs upon which labor has been bestowed and in which there is a property right.—Hamlet J. Barry, 724 Equitable Bldg., Denver.

Starting Alfalfa.

I live at Seibert, Kit Carson county, Colo., and want to start some alfalfa in three different fields. I have a mania to grow alfalfa, probably because it is declared it will not grow on high land. Anyway I want to try. This spring, I had three fields of old ground double disked. Since then we have had four fine rains. The ground is now wet down as far as I can dig with a spade at least six feet. My intention had been to summer fallow these three fields this summer, and then to plant my alfalfa either this fall or next spring. But these rains have made me ambitious, and I have been wondering whether it would do to plant this summer. What would you advise, and what should be my next move and subsequent moves in preparing my seed bed?—C. T. Kit Carson county.

If the ground was well plowed last fall, double disked this spring and is in a moist condition to a depth of 6 feet, it will certainly raise alfalfa if you can succeed in obtaining a stand at this season of the year. Alfalfa being a small seed it cannot be planted much more than half an inch deep and in summer time with the surface a little dry, there is always danger of its drying out in the sprout between showers. For this reason we always recommend planting this seed at the wettest time of the year, usually April, when it germinates best under a wet snow. Some have succeeded in obtaining good stands in June and July; but there is no doubt some risk incurred. When planted in the fall there is some danger of winter killing. Further east on account of more precipitation to germinate it and promote the growth it is much safer to plant it in the summer or fall than it is here.

It should be seeded with the press drill and if conditions are right and the seed good, 10 pounds will plant an acre. The ground should be first harrowed down as fine as possible. For the uplands the row system is the best because the weeds can be kept out with the cultivator. The space between is usuallly 30 inches to allow room for this implement, but 24 inches is considered better by some because the ground is well shaded when the plants are large and the field looks like a solid stand of alfalfa. The weeds do not come up as much in the narrow rows because the alfalfa smothers them. The chief objection is that a special or homemade cultivator must be used, since the regular two-horse corn cultivators are too large, but some makes can be used by taking off the outside teeth, one off each side.—E. R. Parsons.

Answers to F. M. J.

Is there a law to prevent chickens running at large?

Can a railroad company be held responsible if the fences along the right of way are down and cattle break in on adjoining property because of the condition of these fences? The railroad company has been notified about it.—F. M. J., Arapahoe county.

1. There is no state law to prevent chickens running at large. Some cities have ordinances on the subject, but these, of course, apply only within town limits.

2. The law provides that railroads must fence rights of way and must keep fences in repair. Failure of any railroad company to fence on both sides of railroad makes such company liable to owners of any livestock killed, injured or damaged. The law, however, says nothing about crop damage by cattle which might be due to railroad fences being in bad repair.

Judgment on Homestead?

Suppose a person owes a store bill or other bills, could the creditors get judgment on homestead? It so, could they sell the said homestead?—Subscriber.

If the entryman has not proved up the creditor cannot come against the homestead. If he has, the creditor can do so. However, should the places be homesteaded under the state law, it would be exempt from execution up to $2,000.—Hamlet J. Barry, 724 Equitable Bldg., Denver, Colo.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Mule's Hoofs Were Frozen.

I have a mule that got down in the snow in the recent blizzard and froze her skin in places, and now both front hoofs are coming off. Will they grow on again or will the bone harden so she can get around? One hoof is off and she walks on that foot with considerable less pain than the other where the hoof is loose. —M. A. B. Crowley county, Colo.

The sloughing of the hoof wall from freezing is serious. In all probability the coranary band, from which the hoof wall grows, was destroyed, in which case there will be no possibility of the hoof becoming normal. There will probably be some effort in this line but the hoof will more than likely be deformed. The results will depend on how badly the feet were frozen. It will probably pay to keep the mule for a while, when it should be determined whether there is any possibility of her ever becoming useful. Antiseptic dressings should be used where the sensitive structures are exposed.—G. H. G.

Blood in the Milk.

Ans. to D. P., Wyoming.

Mammitis (garget) or inflammation of the udder, is a very common disease in cows, but is comparatively uncommon in mares, sows, ewes and other females. It is usually associated with the disease commonly known as contagious abortion. Mammitis is probably always caused by infection of the udder and this may take place through the natural opening in the teat or by way of the blood stream. The milk it clotted in the udder by the acid secretions and the presence of blood indicates irritation and extreme congestion of the tissue of the udder.

In case the udder is badly congested a sheet or canvas may be placed around the body in such a way as to support the udder. This will also provide a convenient means of applying warm poultices. A laxative of salts and laxative food should be given. Gentle massage of the udder, with external applications of stimulating liniments are useful. Special equipment is necessary to administer internal treatment to the udder. Sometimes mastitis is infectious and will spread through the herd. While the udder is caked, and the milk stringy or bloody, conditions are abnormal and the milk is unwholesome.—G. H. G.

For Lousy Cattle.

Ans. to A. B., Jefferson county, Colo.

The commercial lime and sulphur dip, or tobacco dip, may be used as a hand dressing. Most any drugstore can supply coal tar preparations with directions for using. A convenient hand dressing for lice is the following: Oil of tar, one pint; crude carbolic acid, three ounces; lard oil, one gallon; sulphur sufficient to make proper consistency. Make the quantity needed in these proportions. The remedy used must be rubbed in, with a stiff brush, against the hair, being sure to remove scabs. The treatment should be given on a warm day, stabling or using blankets if necessary.—G. H. G.

If in need of advice, ask Western Farm Life Service Bureau.

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One Man Saws 25 Cords a Day

The Ottawa Log Saw falls trees or cuts off stumps level with ground. Saws up logs, cuts up branches, ice cutter, runs pump jack and other belt machinery. Mounted on wheels. Easy to move anywhere. 10 Year Guarantee. 30 Days Trial. Write for Free Book and Cash or Easy Terms.
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BEST TRACKLAYER TRACTOR

Why it Dominates:

BECAUSE the principle of construction is right. Best design was not arrived at over night—it is the product of years of experience and actual operation under the most exacting conditions.

Because it is built right. From engine to cotter pin, the material that enters a Best Tractor is the finest the market affords.

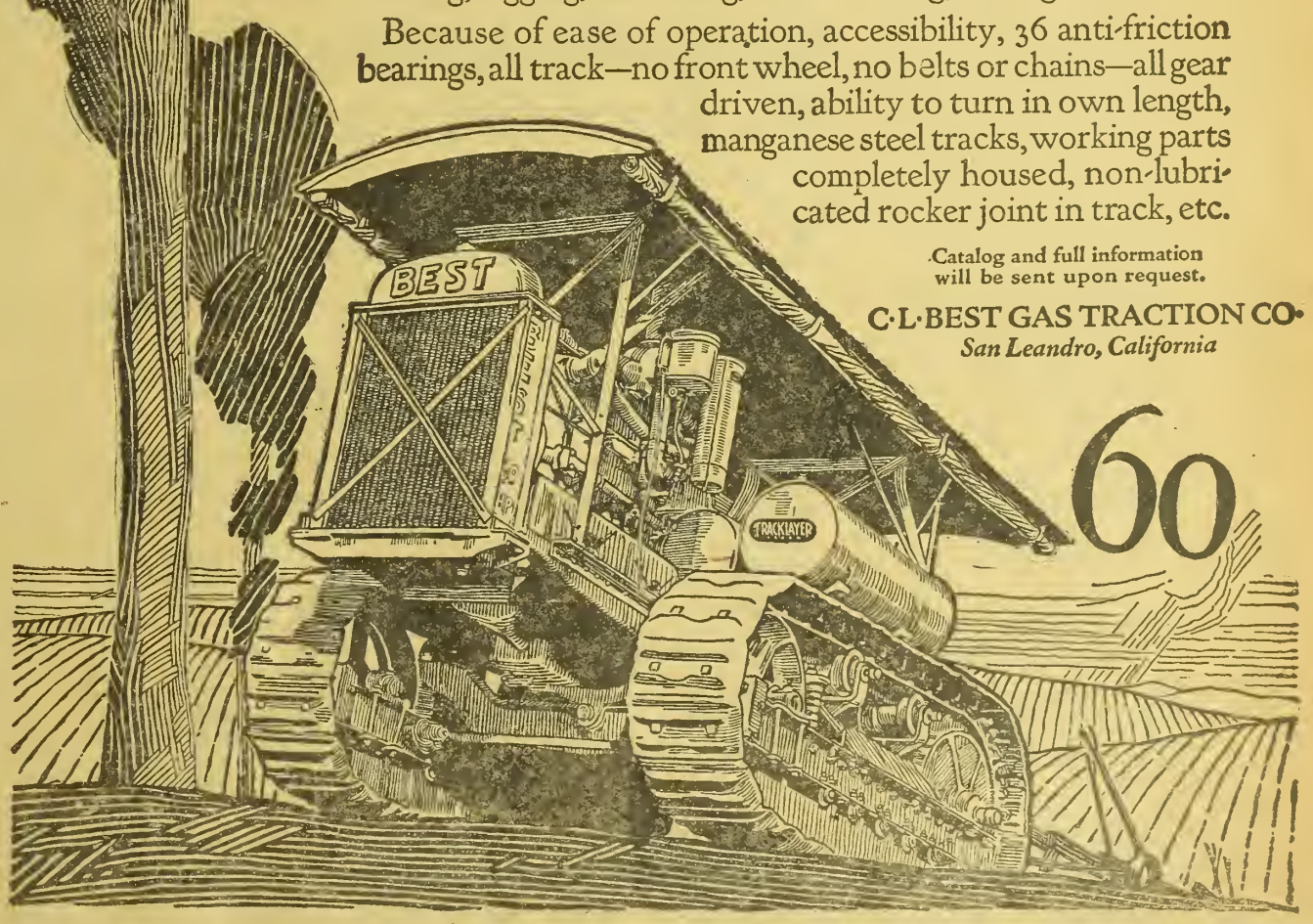
Because it will stand up year after year at a minimum expense for upkeep.

Because it is adaptable to all classes of heavy duty farming, hauling, logging, lumbering, road building, mining, etc.

Because of ease of operation, accessibility, 36 anti-friction bearings, all track—no front wheel, no belts or chains—all gear driven, ability to turn in own length, manganese steel tracks, working parts completely housed, non-lubricated rocker joint in track, etc.

Catalog and full information will be sent upon request.

C. L. BEST GAS TRACTION CO.
San Leandro, California



Adventures of a Nature Guide.

That there is a splendid field in the Rocky mountain states for professional nature guides is the opinion of Enos A. Mills, the noted naturalist and author of Estes Park, Colo., who deals with the subject at length in his latest book, "The Adventures of a Nature Guide," just received from the press of Doubleday, Page & Co. "The people of the United States have within the past generation," says Mr. Mills, "created national parks, state parks, city parks, and made wild life reservations, recognizing their higher value to the people, for their uses in education, recreation and hopefulness. I wish that every park had a nature guide and that every wild place might early become a park."

With natural beauty all around us there is a woeful lack of appreciation on the part of many who are too much absorbed in the business of making a living, or rearing a family, to enjoy these God-given wonders of mountain

Enos A. Mills. Children and chipmunks are his pets.

and plain, of bird, beast and blossom. Mr. Mills has given us new views of nature in this volume, which is recommended for study by women's clubs, rural or city schools, and in the home. From the chapter on "Trees at Timberline," we quote the following:

All day I followed the dwarfed, battered, uppermost edge of the forest through the heights of the Rockies. My barometer steadily said that we were two miles higher than the sea. From a stand of dead timber I cut eleven small trees and carried them in one load to my camp-fire. They were so gnarled and ancient-looking that they aroused my curiosity, and with a magnifier I counted the annual rings in each. The youngest was 146 years of age, and the oldest 258. The total age of these eleven trees was 2,191 years! These and other trees had blazed in my fire and fallen to ashes long before I fell to sleep beneath the low and crowded stars.

With rare exceptions the trees at timberline are undersized and of imperfect form. A forest only eight feet high is not uncommon. One winter a tough staff that I used was almost an entire tree which had been nearly 400 years in growing. A tree that I carried home in my pocket the microscope showed to be more than three score and ten years old. Annual rings in many of these timberline trees are scarcely 1-100 of an inch in diameter, while a fate-favored cottonwood or eucalyptus may in one season envelop itself with a ring that is more than an inch in diameter.

The age of the timberline tree cannot be approximated by its size or appearance, or by the size or the age of its neighbors. It may have lived twice as long, and it may have endured more hardships than its near-by fellows of similar size and appearance.

Environment has shaped many timberline trees into huge and crooked vines. Still others are picturesque, bell-shaped individuals formed by the deeply drifting snows pressing the limbs downward and against the trunk. During the summer months the limbs partly regain their natural position, and the result is a slender bell shape in tall trees and a heavy bell outline in stocky ones. Instead of symmetrical limb development many trees are one-sided. Imagine a tree with storm-threshed limbs all flung out on one side of the trunk, like a tattered, wind-blown banner. Then imagine thousands of bannered trees scattered and grouped, in a mountainside forest front!

The climatic conditions at the forest frontier are trying, but timberline trees are hardy and probably have as long or even longer lives than the majority of their more fortunately placed relatives. The oldest timberline settler that I ever studied had been permanently located at an altitude of 11,437 feet for 1,182 years when finally killed by fire. Much-branched and stocky, its height was 12 feet, and its diameter a foot above the earth was 4 feet 6 inches. What these timberline trees lack in symmetry and heroic size they make up in hardiness and aggressiveness.

Timberline in the far northland marks the latitudinal limits, while the mountain timberline shows the altitudinal limits of the forest-life zone. The forest farthest north ends in a ragged, battered edge against the Arctic prairies. The polar storms that sweep across broken icefields and barren lands meet with first resistance in the advanced, low-crouching timberline of sturdy spruces.

Timberline far up the sides of high mountains is as strange and as abrupt a boundary as the crooked and irregular shoreline of the sea. This mountainside timberline is the forest's uppermost edge. Above are the treeless distances and barren heights of the Arctic-Alpine zone. Below and away from the ragged edge drapes and rolls the dark and broken robe of forest. Like old ocean's shifting and disputed boundary line, timberline is a place where contending forces ever surge and roar. —(The Adventures of a Nature Guide, by Enos A. Mills.)

Signs of Undergreund Water.

Ans. to Subscriber, Colorado.

In regard to your question as to the finding of water: Willows and aspen trees are considered signs of shallow water, but their presence does not always mean the location of a well. Sometimes it merely indicates an unusually moist spot that catches and holds drainage from snow banks above. There is no sure way of determining whether you have water in the place described except by drilling down and finding out.

CANVAS AND RUBBER THRESHER BELTS

The Western Belting and Packing Co.

1751-61 Wazee Street, Denver, Colo.

Manufacturers of Oak Tanned Leather Belting, Suction Hose, Steam Hose Water Hose. Phones Main 5795, 5796, 5797, 5798.

Thousands of Happy Housewives in WESTERN CANADA

are helping their husbands to prosper—are glad they encouraged them to go where they could make a home of their own—save paying rent and reduce cost of living—where they could reach prosperity and independence by **buying on easy terms.**

Fertile Land at $15 to $30 an Acre

—land similar to that which through many years has **yielded from 20 to 45 bushels of wheat to the acre.** Hundreds of farmers in Western Canada have raised crops in a single season worth more than the whole cost of their land. With such crops come prosperity; independence, good homes, and all the comforts and conveniences which make for happy living.

Farm Gardens—Poultry—Dairying

are sources of income second only to grain growing and stock raising. Good climate, good neighbors, churches, schools, rural telephone, etc., give you the opportunities of a new land with the conveniences of old settled districts.

For illustrated literature, maps, description of farm opportunities in Manitoba, Saskatchewan, and Alberta, reduced railway rates, etc., write Department of Immigration, Ottawa, Can., or

K. HADDELAND

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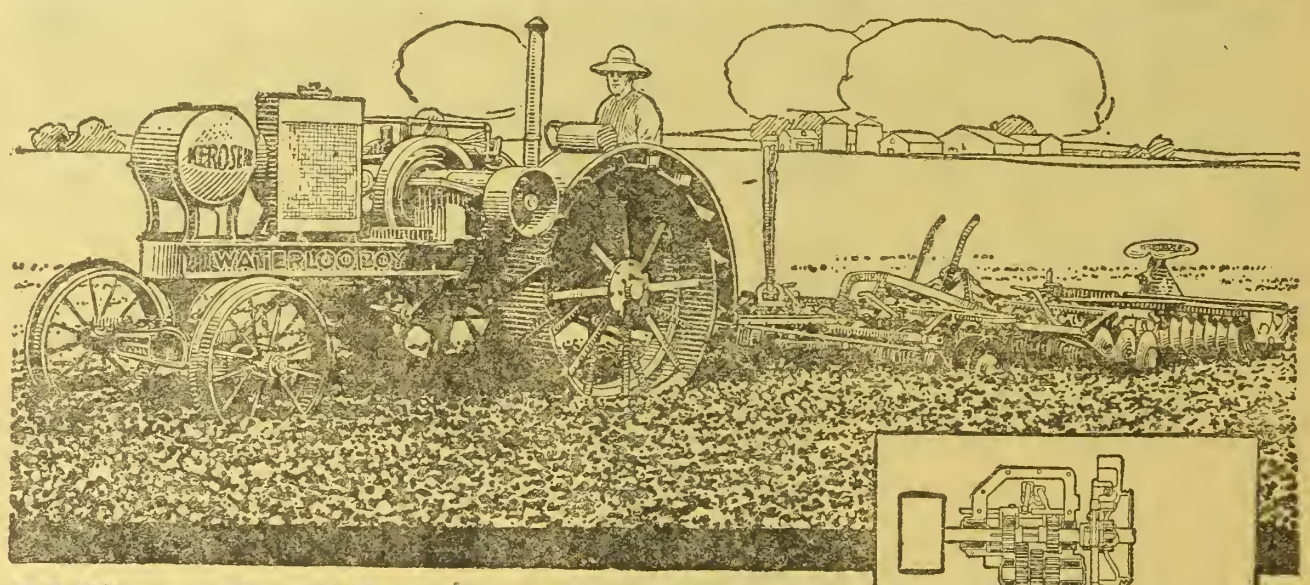
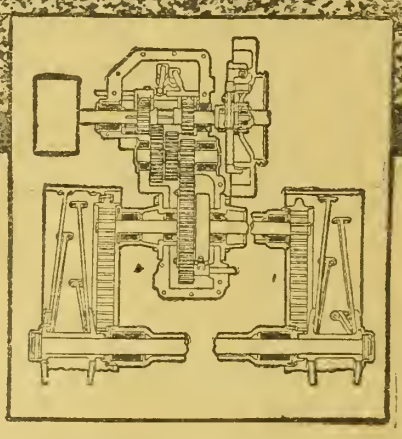
Canadian Government Agent.

WESTERN CANADA Farm Lands Low Prices The Wheat Belt of America





Why the Waterloo Boy Gives Maximum Power At Drawbar and Belt

The engine of any tractor will deliver its maximum power only when shaft and axle bearings run without friction. Friction means wasted motor energy.

The Waterloo Boy Tractor is equipped with heavy-duty roller bearings. Friction is reduced to the minimum. Engine efficiency is increased. Maximum power is delivered at drawbar and belt.

WATERLOO BOY
BURNS KEROSENE COMPLETELY

Eleven Hyatt roller bearings are used on the Waterloo Boy. Three are on the engine extension shaft which operates the belt pulley, and carries the high and low speed gears. Two are on the intermediate shaft, whose gears transmit tractive power to the differential. Four are on the differential shafts, which drive the tractor, and two on the rear axle, carrying the rear weight of the outfit. These particular bearings have an established reputation for their special ability to reduce friction and conserve power.

The Waterloo Boy engine is placed crosswise on the tractor frame. This eliminates bevel gears. Bevel gears cause friction. Waterloo Boy drive is direct through straight gears, another power-conserving feature.

There are many other superior features of Waterloo Boy construction and operation. Its simplicity and accessibility, its powerful 12-25 H. P. engine, its ability to burn kerosene and burn it right, a pump, fan and radiator cooling system, all contribute to make the Waterloo Boy an especially good tractor for your farm.

We have a booklet describing the Waterloo Boy fully. You will want to read it. Address John Deere, Moline, Illinois, and ask for booklet WB-754

The small shaded portions in the above illustration show the exact location of the heavy-duty Hyatt bearings on the Waterloo Boy. They reduce friction, thus giving maximum drawbar and belt power. All the gears shown above are enclosed in a dust-proof case, and run in oil.

John Deere Implements, and Waterloo Boy Tractors and Kerosene Engines are distributed from all important trade centers. Sold by John Deere dealers everywhere.

JOHN DEERE
JOHN DEERE MOLINE, ILL
THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

Sally Johanna De Vries 2nd 293541, owned and developed by American Beet Sugar Co., Lamar, Colo.

Repeats Thirty Pound Performance.

Sally Johanna DeVries 2nd, owned by the American Beet Sugar Co.'s Center Farm at Lamar, Colo., has repeated her thirty-pound performance. Calving last year as a junior 4-year-old, she made the splendid seven day official record of 34.74 pounds butter from 682.9 pounds milk, giving 104.5 pounds her best day. She was awarded fifth prize for milk and tenth prize for butter for cows in her class tested all over the United States, there being 749 competing records.

This year as a 5-year-old, after recovering from a case of milk fever, she made a seven day official record of 30.52 pounds butter from 579.9 pounds milk, and is continued on semi-official yearly test, being milked three times a day. She is crowding the 100 pound mark.

George S. Penley, farm superintendent, says: "We feel very fortunate in having three heifers from this great cow in our herd, two of these being sired by our senior herd sire Smithdale Alcarta Pontiac, who now has 18 A. R. O. daughters and one producing son; two daughters above 30 pounds, one a 3 and the other a 4 year old. This latter heifer also made a great thirty day record of 131.96 pounds butter from 2,455.1 pounds milk. This daughter of Smithdale is soon due to calve again and weighs over 1,800 pounds. She will be put on semi-official yearly test. We have just completed official test on six of our cows, all making quite creditable records, and are making a good start on yearly test. It may be of interest for breeders to know that Smithdale Alcartra Pontiac is from the same cow as the sire of Tilly Alcartra."

Dairy Herd Problem.

Will you give me any information you can as to the profitableness of managing a dairy herd under the following conditions:

Cows average about 800 lbs. of milk, testing 3.5 per cent each per day. Most of them are well along in lactation period. Alfalfa hay costs $16 per ton. corn chop $3.10, milo chop $2.50, bran $2.50, shorts $2.75, whole oats and barley $3, oil meal and cake $4 each per 100 lbs. Fair wild grass or range pasture is available in summer, but not silage at present. The condensery pays $2.80 per 100 for 3.5 per cent milk, deducting 30 cents for hauling, and the local creamery pays 63 cents per lb. for butterfat. How many of such cows should one man care for by spending practically all of his time at the work?—P. H. C., Bent count, Colorado

Alfalfa should be the basis of the ration. A silo would be a paying proposition for you. Under ordinary conditions alfalfa hay and silage will give a ration that will supply the wants of the average cow and in a cheaper way than if attempted with grain. The succulence obtained from silage or grass is hard to substitute for in the ration.

Taking into consideration the cost of your grains, the following mixture will prove of value: 100 pounds of milo chop and 200 pounds of wheat bran fed at the rate of one pound of the mixture to every 4 pounds of milk; and all the alfalfa hay they will eat. This is not a balanced ration. It is a little strong in protein, but all of the feeds you mention are that way. However, it should give you as good results and is cheaper than one that might balance a little better. I would urge you to consider the silo proposition as it will give you real results and save you a great deal of money in the long run.

You state that the condensery pays $2.80 per hundred for milk, less 30 cents for delivery, and that the creamery pays 63 cents for butterfat. With the 3.5 per cent test the creamery will pay you $2.20 per hundred for the butterfat and you have the skim milk which has a feeding value of about 75 cents per hundred for pigs. This gives you, under the creamery plan, $2.95 per hundred. You have, however, your delivery to take into consideration and also the separation. It is difficult to say just how many cows one man can take care of as it depends entirely on the man. He should, however, be able to care for all that he can milk if he does nothing else but the dairy work, such as milking, feeding, barn cleaning and care of milk and utensils. I have known men to care for 30 cows under that plan. Few men are able to hand-milk that number, however. If hand-milking is done, would say that 16 to 20 cows would keep a man busy.—H. A. L.

Ask Your Dealer

Dealers handling Red Seal Dry Batteries have the Sparker Buy it—get the convenience and saving it will make for you. Also ask dealer for our book "How to Run the Gas Engine—Simplified" Free to users of Red Seal Batteries and Sparkers.

Red Seal Sparker

A gang of Red Seal Batteries handled as one. Best wherever a spark is needed! For Farm Engines, Fords, Tractors, Trucks, Bells, Blasting, etc. Handiest thing in the battery line you ever saw. Only 2 posts to connect —large and square to turn easily with fingers. Broad web strap for carrying. Can be moved from one job to another in the day time and to farm lighting plant at night.

MANHATTAN ELECTRICAL SUPPLY CO., Inc.

New York Chicago St. Louis San Francisco

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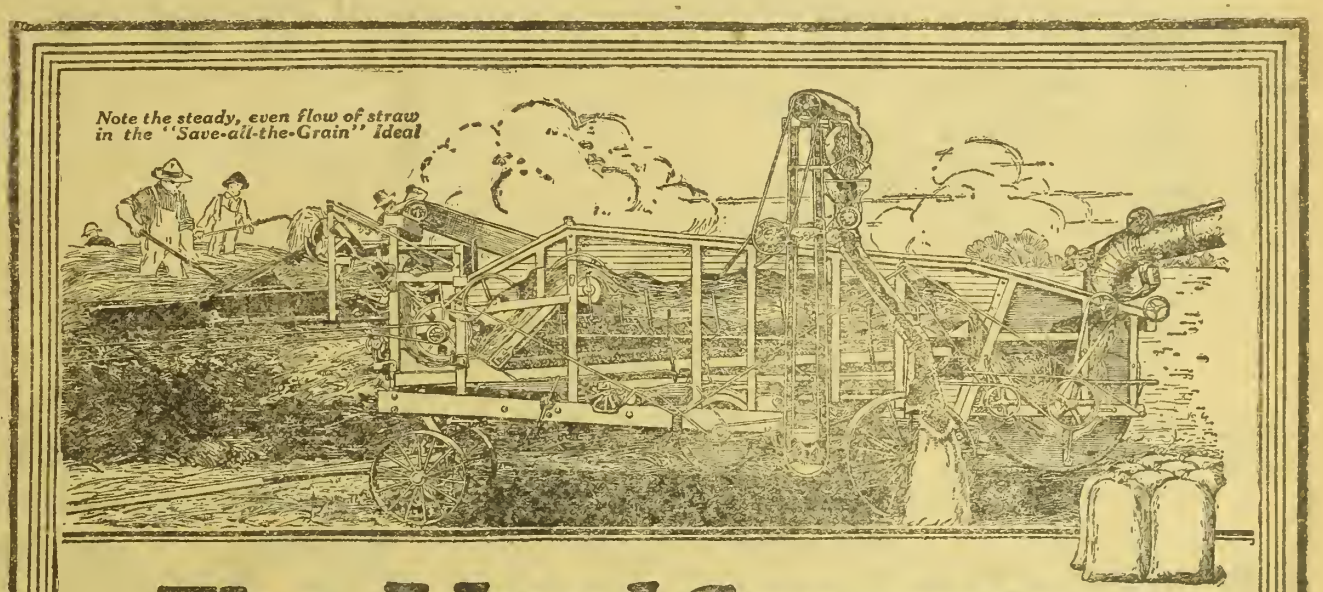

The *Ideal* Separator Provides—

Greater Grain Saving—A special grate design, right behind and beneath the cylinder—the Ideal traveling rake, that carries the straw from the cylinder in a *steady, even flow*—the Ideal straw rack, with its series of lifting fingers that tear the straw open, rake it, beat it from beneath, all contribute to compelling complete separation in the Ideal.

Cleaner Work—The extra large chaffer area, the adjustable sieve in the shoe and the Ideal system of wind control, guarantee a perfect job of cleaning without waste under every condition. The Ideal does the kind of cleaning that eliminates "dockage" at the elevator.

Larger Capacity—With the greatest grain saving device in the world the Ideal secures over 90% of the complete separation almost immediately after the bundles enter the machine. This with the unusually long straw racks and the extra long sieves, explains its larger capacity.

Easier Operation—You don't have to crawl inside the Ideal to adjust and regulate the separator. All bearings, concave adjustments and regulations of the blast are on the outside of the machine, also all oil and grease cups, where you can take care of them even while the Ideal is running.

Stronger Construction—The Ideal frame has no spliced or bolted members—it is practically a one-piece job—sills, posts, deck rails. It simply can't pull apart, sag or rot. This, with the heavy, substantial trucks, and all shaker hanger bearings running in adjustable boxes, gives a construction that insures long life.

No Vibration—In the Ideal the cylinder is perfectly balanced and all moving parts are counterbalanced. This makes for steady, smooth running that eliminates harmful vibration, minimizes wear on the bearings, preserves alignment of shafts and greatly lengthens the life of the machine.

You have a choice of five sizes—22 x 36, 28 x 44, 28 x 48, 32 x 52 and 36 x 60. See your Rumely dealer or have us send you further information.

ADVANCE-RUMELY THRESHER COMPANY, *Inc.*
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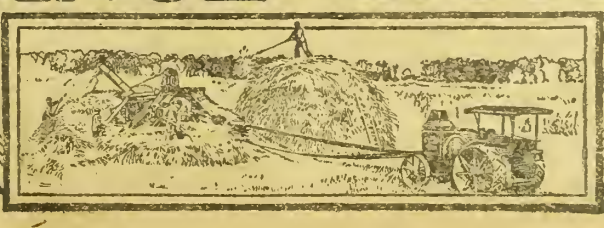

Dairying and Hog Raising

H. A. LINDGREN

All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, Western Farm Life, Denver, Colorado.

National Holstein Sale.

It doesn't happen often in the experience of an agricultural journalist to see nearly a million dollars' worth of pure-bred livestock go through an auction ring in three days, consequently we may look forward to something of unusual interest in the account of the National Holstein Association meeting and sale, to appear in the issue of July 1st. Mr. Lindgren returned from St. Paul just as the present issue was ready for the press, with big news concerning the Colorado animals that went into the sale; with a fund of information regarding progress of the breed and with an inspiring story about the great gathering which marks the beginning of a new era in the Holstein-Friesian Association, by infusing real western vim and enthusiasm into the organization.

As was anticipated, the top price in the sale went to the son of Tillie Alcartra and Carnation King Sylvia: Alcartra King Sylvia, aged three months, who sold for $50,000. Mr. Lindgren saw him knocked down to the highest bidder at that extraordinary figure.

Remember that the dam of this bull was bred by McKay Brothers, now of the Holly district in Colorado, and she has been developed by California breeders and is owned in that state. The West is right on top in the Black and White game.

There were other big figures, the sale of Pabst Korndyke Cornflower, a four-year-old cow, considered by many the best of her breed in America, who brought $30,000, and King Korndyke Pontiac Acme, sired by King Korndyke Pontiac 20th, and out of a 1034-pound dam, who sold for $41,000.

Mr. Lindgren will give full details concerning the splendid showing made by our Colorado breeders, who were there "with bells on," as the saying is. Hall Brothers' record cow, Western Ascalon, brought home the bacon for Colorado with a price of $5,500. Three animals were purchased by Colorado breeders—but the telling of it will be reserved for Mr. Lindgren who saw the big show.

Incidentally our Holstein breeders will be interested in knowing that there is a plan on foot for a big Holstein picnic in August in Colorado—probably at Palmer Lake—and that we will have with us some of the biggest men in the game from the east. This is another of Mr. Lindgren's ideas which found immediate backing from our progressive breeders. I know we will all get behind the plan to help make it a huge success. Colorado Holsteins match up well with those from Minnesota, Wisconsin and New York, and the world ought to know it. Western Farm Life will do its share in giving that fact publicity.—A. T. S.

Idaho Farmers Buy Jerseys.

An interesting report from the University of Idaho brings the information that the farmers of Payette county have recently purchased 37 Jersey cattle from the herds of J. B. Stump & Son and George Conner of the Willamette Valley in Oregon. The deal was consummated by the Jersey Cattle Purchasing Association as a result of the activities of the Farm Bureau executive committee and of the co-operative creamery. Assistance in the selection of these animals was given by County Agriculturist P. T. Fortner and State Dairy Specialist F. R. Cammack. All of the cattle purchased are of register of merit caliber. Some of the cows have records as high as 750 lbs. of butterfat in a year. It required $10,000 to finance this proposition, all of which was raised by representative dairymen of the county through the assistance of the bankers.

Bulls for this venture are provided through the organization of a bull association, which gives the dairymen the services of high record bulls at a minimum cost.

Several other counties of Idaho are purchasing dairy cattle of various breeds. They include Ada, Canon, Camas, Elmore, Gem, Gooding, Jerome, Madison, Minidoka and Washington counties. All of the purchases are to be on the co-operative plan and will include Guernseys, Holsteins and Jerseys. The Idaho farmers are rapidly appreciating the value of dairying in their farming operations.—H. A. L.

A Simple Sterilizer for the Dairy.

Farmers' Bulletin No. 748, U. S. Department of Agriculture, describes a practical steam sterilizer that should be used on every dairy where other means of live steam is not available. This simple device will assist greatly in improving the quality of the cream taken to market, as it will destroy all germs that are secreted in the seams and crevices of the dairy utensils that would otherwise contaminate the milk. Any tinner can make one by following the description given in the above named bulletin. It can be used on any stove or heater. This bulletin may be had by writing the Division of Publications, U. S. Department of Agriculture, Washington, D. C., or by a request to the Dairy Department of Western Farm Life.—H. A. L.

"My wife made me what I am!"
"Have you forgiven her yet?"—Satire

How about your Tractor, Wagons, Plows, Harrows, Binders, Etc.?

A good protective paint coating keeps them tight and in good repair. Wear and rust begin at the surface.

A CAN OF

McPhee & McGinnity Co.'s

Wagon and Implement Paint

keeps the implements in good shape when you need them, prevents breakdowns and saves you time and money.

This Wagon and Implement Paint is a quick drying, hard and long wearing Enamel, in five bright, attractive colors. It is made especially for all kinds of farm machinery.

Paints, Varnishes, Stains and Enamels for the barns, silo, automobile, house, floors, furniture, walls, and every conceivable purpose.

Ask your local dealer or write for Color Card and information

McPhee & McGinnity Co.
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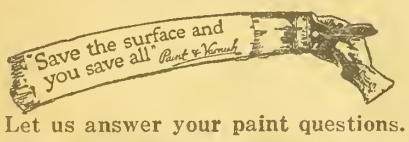
SUPER QUALITY
ZIP *SERVICE*



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Big Money Boring Wells

One Man One Team

Have water on your own farm. In spare time make wells for your neighbors. It means $1000 extra in ordinary years, double that in dry years. No risk—no experience needed.

Outfits for Getting Water Anywhere

Earth augers, rock drills and combined machines. Engine or horse power. *Write for easy terms and free catalog.*

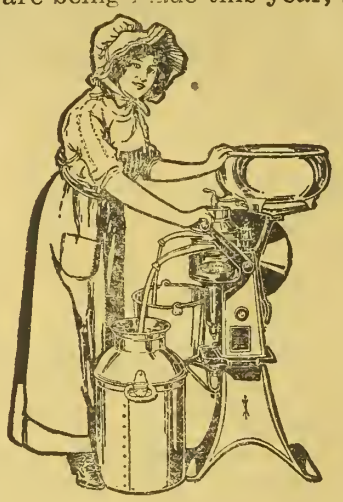
LISLE MFG. CO.,
Box 743 Clarinda, Iowa

You May Not Wisely Delay Ordering Your 1920

DE LAVAL
CREAM SEPARATOR

There are a dozen reasons why this is so.

For three years it has not been possible to make enough De Laval machines to meet the demand. More than ever are being made this year, but the demand is still greater.



Cream Separators have advanced less in price than anything else used or produced by the farmer during the war years. If labor and material costs continue to advance so must separator prices.

Such an advance must very soon come from increased freight rates, if from no other cause.

Freights are still slow and uncertain. There may be unavoidable delay in getting a machine when you badly need it from this reason.

The flush of milk and hot weather are near at hand, when a De Laval saves most and an inferior or half-worn-out separator wastes most.

There are still other reasons, which a De Laval best demonstrates for itself. You will have no difficulty in observing them. Every local De Laval agent will be glad to afford you the opportunity to do so.

If you dont know the nearest agent simply address the nearest main office, as below.

The De Laval Separator Company

165 Broadway NEW YORK | 29 East Madison Street CHICAGO | 61 Beale Street SAN FRANCISCO

50,000 Branches and Local Agencies the World Over.

ROSS
Ensilage Cutters

For BETTER Silage--at LOWER Cost. Flywheel and Cylinder Types--and sizes to match your present power--Kerosene, Gasoline or Steam--from four H. P. up.

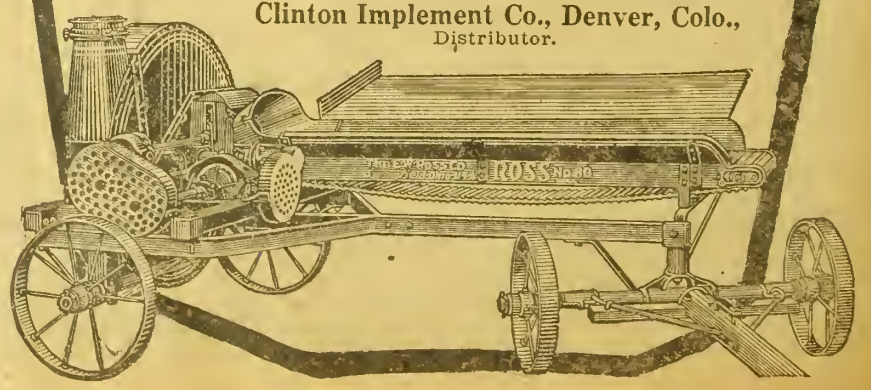
HERE'S a suggestion that will mean money in your pocket if you follow it out. Just write, asking "Who sells Ross Cutters in my locality?"

We will send you *facts that will open your eyes* on this silo-filling proposition. We will prove to you that the Ross will not only *save* you money, time and trouble, every fall, but will *earn* you bigger profits every winter by furnishing more succulent, more palatable and more nutritious silage for your stock. We will explain why *the Ross cuts clean always*--keeping the natural juices in every slice of silage.

A one-cent stamp is all it costs to get the facts before you. Your name on a postcard will bring you the story of the simple, powerful, smooth-running and clean-cutting Ross. Write today. No obligation. We'll send Catalog and the name of nearest dealer.

THE E. W. ROSS CO., 508 Warder St., Springfield, O.

Clinton Implement Co., Denver, Colo.,
Distributor.



Farm Butter Making.

The making of butter on the farm is one of the duties which falls to the housewife. Some of the butter made on farms compares favorably with that made by creameries. Very often, however, butter made on the farm does not stand up and often in a short time becomes too rancid to be considered palatable. It is difficult to make good butter without facililties for the control of temperatures of the cream or butter after it is made.

The first consideration is clean milk and cream. Good butter cannot be made from dirty cream, tainted with barn or other flavors. Every care possible needs to be exercised to bring the milk in in a clean condition and to keep it that way through all stages in the making into butter. This means clean cows, clean milkers and utensils. After the cream has been separated it should be cooled immediately. The degree will depend on the temperature of the water available. It should be cooled as low as 50 degrees if possible, keep it at that temperature until placed in the ripening can or jar at which time it should be raised to a temperature of about 75 degrees. Keep it there until mildly sour. Cool to a temperature of 52 to 60 degrees and churn. Before using the churn it should be scalded. Then fill it half full of cold water and revolve until churn is cool. Drain the water and pour in the cream. It is a good idea to strain the cream into the churn, as that will make it smoother for churning. It is not necessary to dwell on the method of churning, as that is well known by all. This might be said, however, that the churn will do better work if turned slowly. This applies especially to the revolving types.

Stop churning when the butter granules have been formed about the size of wheat grains.

Draw off the buttermilk and wash the butter in the churn with water about the same temperature as the buttermilk. Revolve the churn with wash water in, as this will aid in washing out all buttermilk. Usually two washings in this manner is sufficient. After drawing off the water the butter should still be in granular form. Salt at the rate of ¾ ounce to the pound of butter. Work until the salt is thoroughly dissolved. Do not over work. This is often the trouble with poor farm butter. The amount of working can be determined by the way it breaks. A clean break like broken steel, granular in appearance, is desirable. When that condition is reached it is time to stop working.

Next prepare the butter in marketable packages and keep in a cool place until sold.—H. A. L.

Co-Operative Bull Associations.

Bull associations in dairy communities have proved their value in many instances. They should appeal especially in the newer dairy communities, where there are few cows on each farm, or not enough to make it practicable for each farmer to own a bull. The common mistake is often made by the farmers in such sections to purchase a cheap bull for the first few years. Time is money in that connection. If several farmers or dairymen who are living reasonably close to each other would put the same money they spent for a cheap bull into one fund and buy a bull that has been proven, they are farther ahead in the long run, as the calves from such an animal would be far more valuable as producers than from the cheaper bull.

A bull association consists of three or more of such clubs. It is not usually advisable to have more than five blocks, as it complicates the business of the association.

Bulls in each block or club are kept on one farm all of the time, in a place especially provided for that purpose. The expense of his upkeep is assessed to the shares of stock in him. Each member dairyman takes a share of stock for each cow he owns. The management of the association is vested in a board of directors chosen one from each block, and one at large. When a bull has served his time in one block, he is transferred to another block; that is, if he is still serviceable. In this way the first outlay for the purchase of bulls will be sufficient for some years to come.

If there are enough who are interested in the same breed in a section the plan is one that can be satisfactorily worked out. Assistance in the detailed arrangements can be had from the Western Dairy Division Office, 318 Federal Building, Salt Lake City, or from the Agricultural College of any state.—H. A. L.

Alta Drummond of Oakdale No. 29249, owned by John Linn & Son, Manhattan, Kansas.

This Ayrshire Breaks Records With the Perfection

"Since we have been using Perfections, we have made two short-time state records with our cow, Alta Drummond of Oakdale," say John Linn & Son. "She produced 84.7 pounds of milk in twenty-four hours with three-time milking with the Perfection, and 96.2 pounds of fat in thirty days. Both of these are state records for Ayrshires. We have also completed some very good two-year-old records since using the Perfection: Alta Drummond Bell, No. 42471, making 11,017 pounds milk and 404.06 pounds fat, and Bell Corndike Cook, No. 42474, with 10,458 pounds milk and 399.25 pounds fat. Our fourteen records completed figured on a mature basis would average 11,529 pounds of milk and 462.93 pounds of fat."

Milk Three Times a Day

About two years ago these men saw the Perfection Milker and decided that this was the milker for their thoroughbred cows. Since then they have used it constantly, often milking three times a day for long periods while on test. Their experience is the experience of thousands of dairymen owning valuable cows. Let us send you the names and addresses of dairymen owning registered herds which the Perfection is milking.

We will also send you free the book, "What the Dairyman Wants to Know." Write to Perfection Mfg. Co., 2152 E. Hennepin Ave., Minneapolis, Minn.

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ARE YOU VACCINATING AGAINST BLACKLEG AND STILL LOSING CALVES?

If so, you must be using an inferior Blackleg Vaccine.

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Reliable products are always subject to imitation, therefore, be sure you find this trade mark on every bottle you use. IT IS YOUR PROTECTION.

Price 40c per dose; for 10c additional per dose, we issue a written guarantee against loss from Blackleg. Comes ready to use in 5, 10, 20, 45 and 90 dose bottles. Our special make syringe $3.00. Free Booklet on request. Order through our local agent or from our nearest office.

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You cannot afford to buy without getting our *latest propositions* and Factory-to-Rider prices. Boys, be a "Rider Agent" and make big money taking orders for bicycles and sundries. *Liberal terms* on a sample to introduce the new "RANGER".
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We are experienced and reliable builders. We do good work and stand behind it.
Of course you want our silo and our service. It costs no more. We have an agent near you.

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$44 Buys the New Butterfly Jr. No. 2½ Light running, easy cleaning, close skimming, durable. EASY TO CLEAN
NEW BUTTERFLY Separators are guaranteed a lifetime against defects in material and workmanship. Made also in four larger sizes up to No. 8 shown here; sold on
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Write today for prices. Good territory open for live agents.
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1506 Fifteenth Street, Denver, Colo.

Clean Up the Stable Fly.

Have you ever tried to sleep on a hot summer night when just one mosquito had crept through the window screen? Imagine your state of mind if that single mosquito were multiplied by 100 and you had your hands tied!

That sensation, according to the Bureau of Entomolgy, United States Department of Agriculture, is something comparable with what a horse, mule, or cow endures when the stable fly is present in great numbers. The stable fly greatly resembles the ordinary house fly but for the lance with which he is armed. It is known that he carries disease from infected animals to healthy ones.

The eggs of the fly are laid in loose, warm straw heaps and piles of stable refuse. A plague of flies always starts from these sources, and the control of the pest is best managed by scattering the straw early in the spring before the beginning of warm weather and plowing it under, or by burning it when the former method can not be applied.

Stable refuse should be scattered at regular intervals of one week or less throughout the season, starting with early spring. In this way the first generation of the pest is destroyed and a plague averted. A recent publication of the department, Farmers' Bulletin 1097, gives in detail the life history of the stable fly, methods for its control, and some facts concerning the amount of damage done by the insect.

Harvesting hay with a sweep rake is suggested by the United States Department of Agriculture as a means of relieving the shortage of farm labor. Farmers' Bulletin 838 gives complete information on harvesting hay with a sweep rake. This bulletin may be secured from the Division of Publications, United States Department of Agriculture, Washington, D. C.

The Fifty-Thousand Dollar Calf.

Fifty thousand dollars was the price paid at the National Holstein sale in St. Paul for the royal son and heir who is cartooned in the above illustration reproduced from the Holstein-Friesian Register. This represents "Queen" Tillie Alcartra, the world's greatest producing cow of any breed, and Carnation King Sylvia, the highest priced sire in history, for whom Carnation Farms paid $106,000 two years ago. The royal son and heir, now scarcely three months of age, brought a price in keeping with his breeding. The mother of this calf has produced a total of 180,460 pounds of milk in her seven lactation periods, which, translated into fat, would amount to over 7,000 pounds of butter. She is the mother of seven living calves.

New Poison Plant Found.

A plant of the pea family, known to botanists as the astragalus tetrapterus, growing in the foothills of southern Utah and western Nevada, has been found to be poisonous to cattle and sheep. Further search may indicate a wider range of growth. The United States Department of Agriculture, which has been making a preliminary investigation of the effects of this plant, considers it a sufficient menace to warrant a preliminary warning.

The plant occurs in scattered patches, never in large quantities as is the case with some of the recognized loco plants. It blooms early in June and generally dries up later in the summer. It is a perennial leguminous plant belonging to the same family as the locoes, alfalfa, etc. It stands from 1 to 2 feet high. It has linear leaves, small and rather inconspicuous flowers of a light purple color, and peculiar pods possessing four wings—a feature which makes identfication rather easy. Early in the season before new pods are formed those of the preceding year ordinarily can be found on the old plants.

Apparently the symptoms caused by eating this poisonous weed are not especially characteristic. The animal affected staggers as it walks, the weakness being more pronounced in the hind legs. In the case of a steer there were mild spasms with violent expirations. In a sheep, which was killed by eating the plant, there was nausea and an excessive flow of saliva in addition to depression and weakness.

That stockmen and others interested in this question may be able to identify the plant definitely, the Department of Agriculture has published an illustrated Department Circular, No. 81, copies of which may be had by writing to the Department, Washington, D. C.

Question of Right of Way.

I bought a piece of ground which has been patented for 40 years or thereabouts, but being in an estate has lain unimproved or practically so while ground all around it has become fine ranches. The south of this ground is bordered by a ranch whose fence is exactly on the line. The man refuses to let me tie onto his fence. What can I do about it? Also his land borders on one county road on the east, but he has just driven across this ground to reach the county road on the north, there being no fences to prevent him doing so. Now he wants to force me to give him a right of way through my ground, rather than to fix a road through his own place. He is as near to the county road through his own ground as through mine. Can he, by law, compel this right of way under those circumstances and what shall I do?—A. G. D., Gunnison county, Colo.

In my opinion, you have a right to tie to the fence exactly on the line. In my opinion, your neighbor cannot force a right of way through your ground.—Hamlet J. Barry, 724 Equitable Bldg., Denver.

Let Western Farm Life Service Bureau help solve your farming problems. All questions answered promptly.

$25.00 Sweep Feed Grinder | $31.00 Galvanized Steel Wind Mill.
We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.
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Kill All Flies! THEY SPREAD DISEASE
Placed anywhere, DAISY FLY KILLER attracts and kills all flies. Neat, clean, ornamental, convenient and cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed.
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WHAT quality *means to your satisfaction*, you'll know as soon as you smoke Camels! Camels quality plus Camels expert blend of choice Turkish and choice Domestic tobaccos pass out the most wonderful cigarette smoke you ever drew into your mouth.

And, the way to prove those statements is to compare Camels puff-by-puff with any cigarette in the world!

Camels have a mild mellowness that is new to you. Yet, that desirable "body" is *all there!* And, *Camels never tire your taste.*

Camels leave no unpleasant cigaretty aftertaste nor unpleasant cigaretty odor! Your say-so about Camels will be:

"My, but that's a great cigarette".

Camels are sold everywhere in scientifically sealed packages of 20 cigarettes for 20 cents; or ten packages (200 cigarettes) in aglassine-paper-covered carton. We strongly recommend this carton for the home or office supply or when you travel.
R. J. Reynolds Tobacco Co.
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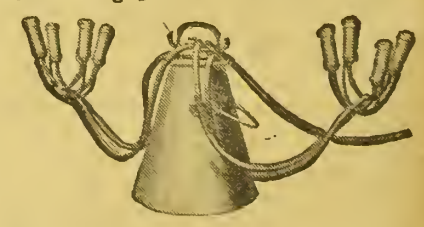
Fagged Out

AFTER a hard day in the field with the temperature up in the nineties and then milking 20 to 30 cows, a man may not cave in as this boy has done, but he's certainly often near doing it.

The Empire is doing a lot to correct this and keep the young man on the farm, and the best part of it is it's making money for his dad at the same time. Milking the Empire way is the sure way to better dairying.

It cuts the time, the cost and the drudgery out of milk production.

Empire Teat Cups have a gentle soothing action that coaxes the cows to let down easily and give more milk. If you are without an Empire you're paying for it. Better investigate! Ask for catalog 4-M.



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EMPIRE CREAM SEPARATOR CO., Bloomfield, N. J.
Also manufacturers of The Separator with The MILLION DOLLAR BOWL
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EMPIRE MILKING MACHINES

Mystic Pontiac Polkadot Lotta 528535, owned by W. G. Foster, Englewood, Colo.. Milk seven days 540.7, butter 15.5. Age 2 years 5 months.

Holstein Heifer Makes High Record.

Mystic Pontiac Polkadot Lotta 528535 is the name of a Holstein heifer owned by W. G. Foster, Wallie Farm of Englewood, Colo., who has recently made an excellent showing under official test. She produced 540.4 pounds if milk and a little less than 16 pounds of butter in seven days, at the age of 2 years and 5 months. This, according to the opinion of M. H. Gardner, A. R. O. supervisor, is the highest milk record in the state at that age.

This heifer was sired by King Segis Pontiac Polkadot. Her dam was Mystic Pearl Josephine Lotta. The heifer is of good conformation with an unusually well balanced udder. The picture shown herewith does not do her justice. She was not forced in making this record. Her feed consisted of grain and hay. The highest daily grain ration was 12 pounds. Her best day's milk was 83.6 pounds. She is an excellent prospect and will be watched with interest by Holstein fanciers.

Mr. W. G. Foster has been in the state but a comparatively short time and has a large herd of foundation cows. Everything on the farm is registered and is being handled with the idea of developing a high producing herd. Mr. Foster recently purchased a herd sire, King Johanna Cedarside Pontiac, who came originally from Arden Farms in Minnesota. This bull is a son of King Segis Pontiac Count, the famous sire of 1,000 pound record daughters. The bull is developing beautifully and has every right to become a noted sire. Mr. Foster is much interested in Holsteins and is a valuable addition to the list of Holstein breeders in Colorado.—H. A. L.

Byers Farmers Grow Corn.

The farmers in the Byers section of Arapahoe county are planning a strong corn growing program for this year. County Agriculturist Vaderlip and Extension Agronomist A. E. McClymonds have been engaged in lining up the work. Several farmers in this section will plant and produce certified seed. Mr. McClymonds has scoured the state to get enough of Minnesota No. 13, Reid's Yellow Dent, Golden Glow and Iowa Silver Mine to supply the farmers with seed.

On April 29 the farmers met and the seed was distributed as far as it would go. This test of varieties planted under certified seed rules will enable the producing of some good seed from the variety best adapted to the section. The idea of these tests is to encourage the growing of seed in each corn producing community. A corn growing contest is also a part of the plan in which a substantial premium will be given for the best acre, taking into consideration yield, type and quality.

Splendid moisture conditions make the outlook for a corn crop quite favorable. Those who will grow certified seed are Roy Allen, Jas. Palmer, A. T. Warner, Chas. Ludwick, R. C. Meader, Walter Morgansen, Floyd Gorham, Jas. Johnson, Emil Stepputtes, M. F. Smith and Leo J. Lucy, all of Byers.—H. A. L.

Says Stock Losses Were Heavy.

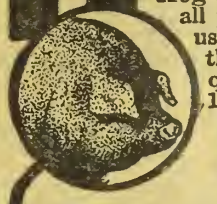
It looks like spring was going to come soon now and I do hope summer comes on Sunday so we can all dress up and enjoy it. The mountains are white and the grass is just getting up enough for the sheep to pick at, what few there are left. All estimates are short and the stock loss is greater than most people think. The recent storm killed thousands, drifted them against fences and into gulches, and one band drifted into a shallow lake and killed several hundred. About July, Wyoming will wake up to find herself far from the front rank as a sheep state. The ones that shipped out to winter in different states don't seem to think they gained anything and had better staid at home and shipped in feed. It was reported two men shipped out 5,000 cattle and brought back 1,800, and several herds of sheep came back short. It don't seem possible such losses could occur. If our dry farmers would get busy we would have something to feed and not have to ship it in. One sheep man has put in a 1,700-acre-foot reservoir and had a tractor plow up 500 acres, and is offering all anyone can grow on the land for three years if they will sell him the feed. This is something like preparation for winter feed.—Del Pratt, Moneta, Wyo.

A hotelkeeper in a town in Scotland was helping one of his tourist guests to plan an outing.

"Are there any deer in these parts?" asked the tourist.

"Waal, there was yin," replied the host, "but the vesitors kept a shootin' at it an' a shoocin' at it till finally it left the neborhood."—Exchange.

HOGS Make 'em Grow Fast



Hog and poultry raisers in all parts of the country are using Semi-Solid Buttermilk because they know it is the "Best Hog and Poultry Feed on Earth." It gives quicker gains, earlier marketing and bigger profits. 100 per cent digestible.

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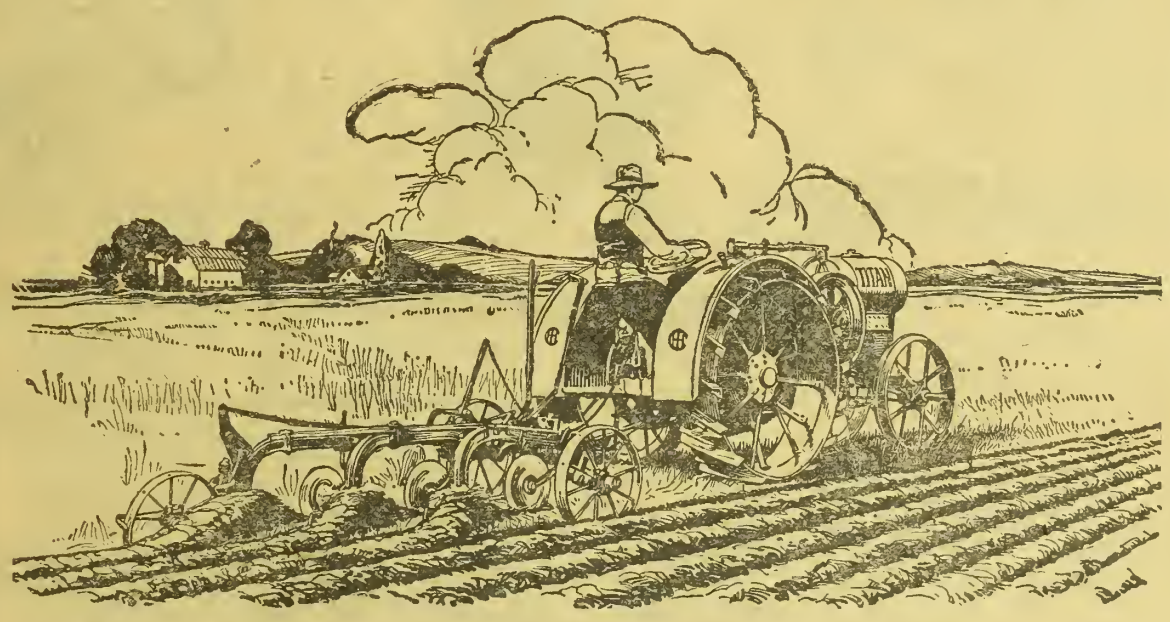
Just creamery buttermilk with the water removed and nothing added. The same as home churned. Contains high percentage of protein and natural lactic acid. Contains no sulphuric acid or other injurious preservatives. Natural lactic acid keeps it fresh indefinitely. Semi-Solid Buttermilk is pure enough to drink or use in batter cakes. Don't use a substitute or so-called modified buttermilk. Get the Genuine Semi-Solid Buttermilk, absolutely pure and unadulterated, for quick results.

Better Than Grain Feeds. Order a barrel of Semi-Solid Buttermilk (average weight 500 pounds). One barrel makes 1000 gallons of pure, rich, buttermilk feed. **Order today.**

CONSOLIDATED PRODUCTS COMPANY

Dept. 205 **Lincoln, Nebraska**

The Matter of Tractor Speeds



IN SELECTING a tractor it is important to consider the matter of speeds—the speed of the engine (number of revolutions per minute) and also the field speed of the tractor (miles traveled per hour).

Heavy, dusty work, such as plowing, requires a slow-speed engine—an engine that will not burn itself up and grind out its bearings on life-sapping high speeds.

The **Titan 10-20** tractor engine loafs along at an easy, comfortable speed that is especially well adapted to heavy-duty work.

In the matter of field speeds, it has been demonstrated that less work is accomplished by a tractor at fast speeds than at the normal speeds of between 2 and 3 miles an hour, for as the speed increases both friction and plow draft increase. A tractor that will pull four plows with ease at two miles an hour will experience difficulty in pulling half as many at double the speed, and it travels twice as far even though doing less work. As the field speed increases, the strain on both tractor and plow increase. And striking a buried boulder while traveling rapidly will do much more damage than contact at an easy gait.

The **Titan 10-20** has two forward speeds—2¼ and 2⅞ m. p. h.—the right field speeds. Think this over when considering the purchase of a tractor—and see your nearby **International** dealer.

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(INCORPORATED)

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Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

Toliver's White Rock Winnings.

This is F. L. Toliver's prize winning cockerel No. 99, the White Rock that created such a sensation at western shows during the past winter. He took first in his class at three of the big shows, the National Western at Denver, the Pike's Peak Poultry show at Colorado Springs, and the Greeley Poultry show.

Mr. Toliver, whose farm is located at Fort Collins, sent only six birds to the Pike's Peak show, three cockerels and

Prize Winning Cockerel.

three pullets. He won first, second, third and fourth on cockerel and the grand championship cockerel over all birds, and first, second and third on pullet.

At the Northern Colorado show in Greeley he made it one, two, three and four on both cockerel and pullet, the same on hens, and first on pen.

At the Loveland show his winnings were one, two, three four and five on cockerel and pullet, one, two, three and four on hens, first on cock and one and two on pens; also sweepstakes for best cockerel, pullet, cock and hen.

At the National Western in Denver he won three out of five firsts offered; cockerels one, three and five; pullets one and two; cocks, third; hens, one and four and third on pen. This is a record to be proud of.

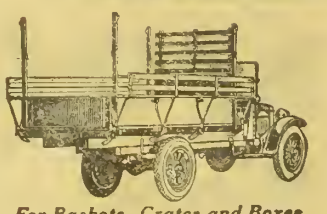
Another Thistle Letter.

After reading your issue of the 15th regarding the Russian thistle, I decided to give you my idea. Our homestead is located in northern Colorado fourteen miles south and east of Cheyenne, Wyo., so we are in the so-called dry farming country.

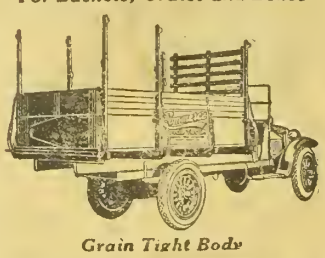
During the first part of the growing season of last year it was very dry; small grain I made into hay about July 1st. We had a few rains; the thistles came up as thick as they possibly could grow on the stubble field. I double disked all that I had time to do, for being all alone on the place, I could not keep at it. I was confident that this would stop them, but again they came up like a green carpet. It was then the idea of listing came to me. I listed 100 acres, 66 of this had been double disked; where I had disked after it became dry seemed to be of no value. The ground I had disked while moist I could glide right along, while on the other I could not list more than four hours at one time without sharpening the share and do good work. This spring the ridges will all be thrown open, for small grain, leveled and drilled, while for corn they will be thrown open and planted at the same time. Now while this is merely an idea of my own and you may not consider it at all, I see no reason why it should not be satisfactory, as none of the thistles had developed to seed, for none were over 3 inches high and they never re-appeared after the listing. I am interested in mixed farming, such as dairying, hog raising with corn, rye, oats, and sweet clover to support same, and potatoes as a cash crop. —Benj. A. Lacy, Fairfax, S. D.

Many farmers erect silos that are not in proportion to their farms. In determining the size of a silo one should build, the matter of quantity of feeding material is not the only consideration. The size of the herd is very important. A tall narrow silo is better for a small herd than a short broad one. For best results, a certain amount of silage should be taken from the top each day. If the herd is too small, not enough silage will be removed and the results will not be so satisfactory.

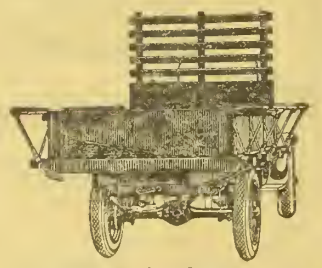
Commerce TRUCKS



For Baskets, Crates and Boxes



Grain Tight Body



Handling Hay, Straw, etc.

For Sacks and Similar Load

The Modern Truck for the Farm

The ponderous, slow, costly solid tire truck is out of date for farm use. Commerce trucks carry loads up to 2 tons capacity on big pneumatic cord tires that cushion truck and load, increase speed, reduce gasoline, oil and repair costs.

There is a larger proportion of payload weight to truck weight in a Commerce chassis. A truck built of the stuff Commerce is made of could not fail to make good—**and they have for ten years.**

The farmers of America without any special efforts on our part were quick to realize the value of the Commerce truck—during the past 2 years this 10 year old factory sold 60 per cent of its output for farm work. We are the largest producers of 1 to 2 ton capacity trucks in America.

Commerce Trucks are scientifically designed, sold on their merit by a Company that is strong financially and assured of continued success.

There is a Commerce Sales and Service station near you—where necessary parts can be secured and courteous service rendered. Invariably you will find the Commerce dealer among the foremost business men of his locality.

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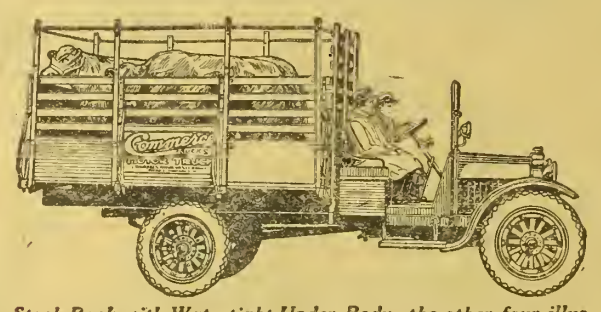
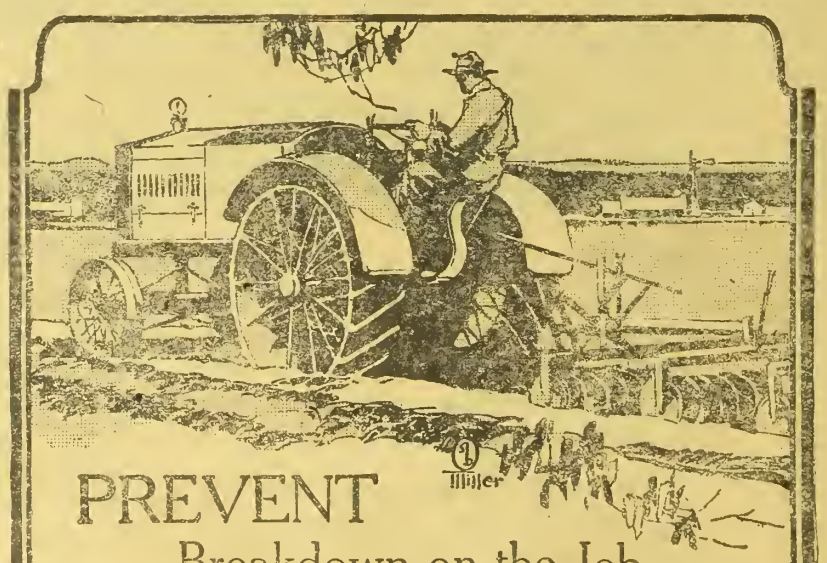
Tenth Year Manufacturers of Motor Trucks



Stock Rack with Watertight Under-Body—the other four illustrations are this same body which can be instantly converted by one man with no tools into the types shown herewith



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Stanolind Tractor Oil is manufactured to meet the particular conditions of tractor work. It keeps the heat units where they are needed. Covers bearings and valves with a protecting oil film, cushioning them against racking engine blows. The name guarantees it.

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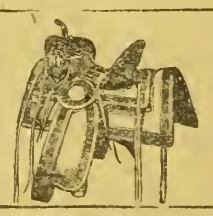

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118 West 31st Street, New York

Need Community Dipping Vat for Cattle Scab.

(Continued from Page 5).

make normal gains on full feed. The disease spreads much more rapidly among cattle that are closely confined. In the spring when cattle are on green grass and have shed their winter coat the disease subsides, only to appear again with the winter conditions of confinement, long hair, and less succulent food.

Though the infected animal itself is the most important factor in spreading the disease, it may nevertheless be contracted from the premises where infected cattle have been kept. The mites will not propagate except on the bodies of cattle, but when removed will survive under favorable conditions for several weeks. Dislodged eggs under favorable conditions may retain their vitality as long as a month. It is apparent that infected premises should be thoroughly disinfected before using them again for clean or dipped cattle. Treatment consists in some external application that will kill the mites and not injure the cattle. A great many remedies have been tried, but only three seem to have survived practical tests and are now recommended officiallly by the Bureau of Animal Industry. These remedies are lime-sulphur, nicotin solutions and crude oil. Crude petroleum is used more for sarcoptic scab since it seems to destroy the eggs as well as the mites, but in either case is objectionable because in some instances it has been injurious to the animals.

Hand dressing of a large number of animals is of course out of the question. Between spraying and dipping the latter has proven to be the most practical. For information respecting the construction of vats and dipping of cattle write to Washington, U. S. Department of Agriculture, for Farmers' Bulletin 1017. Ready-prepared dips are usually satisfactory and preferable to the home-made product. Unless one is experienced in making the dips, it will be better to rely upon the proprietary brands.

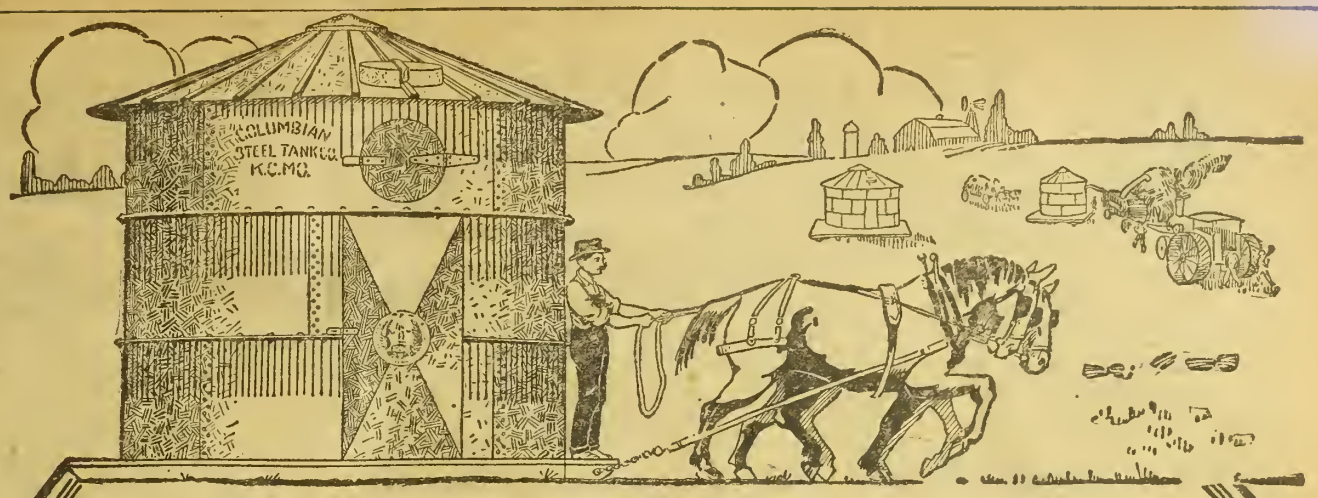
If dipping is to be successful, it is quite necessary that close attention be given every detail. Mistakes are costly and it will pay to always have an experienced person in charge. Cattle should not be hungry or thirsty at the time of dipping, neither should they be gorged with feed or water. It is dangerous to dip cattle when they are overheated. If the nights are cool, dipping should be done early enough in the day for animals to become dry before sunset.

Dipping vats may be constructed of either lumber, cement or galvanized metal. Portable galvanized metal vats are on the market and will answer the purpose very well for dipping small lots of cattle of medium weight. A permanent dipping vat is a valuable asset to a community. Some stockmen argue that it pays to dip animals in the spring to rid them of all external parasites. A community dipping plant can be financed easily and a good plan is to prorate the expense according to the number of cattle owned. It should be apparent to everyone that the present outbreak of scabies in the state can never be controlled unless all cattle in the infested district are treated. This is annoying and expensive and there are always a few who will protest vigorously. Dipping is positively the only known means of checking scab and dipping is the price that must be paid for having clean cattle. Here is an instance where success depends absolutely upon co-operation and thoroughness of the work done.

Silos and Tractors.

Reports of county assessors now being made to the Colorado State Immigration Department show a very substantial increase in the number of farm tractors in operation in the state this year as compared with last year, and also a substantial increase in the number of silos in the state. The reports last year showed 2,247 farm tractors owned by farmers in 44 counties. Reports this year show that there will be about 50 counties reporting farm tractors, and that the total number will be in excess of 3,000. Assessors reported 2,738 silos last year, in 36 counties. More than 40 counties will report silos this year and apparently the total number will be in excess of 3,500.

In Missouri last year, 73,765 birds were eliminated from 1,593 flocks which were culled under the supervision of the home demonstration agent sent out by the United States Department of Agriculture and the State agricultural college. This resulted in a saving of approximately $50,161 to their owners.



Here is the Grain Bin That Actually *Makes* Money for the User!

This assertion was proved last year to the complete satisfaction of thousands of users throughout the United States.

THE COLUMBIAN PORTABLE STEEL GRAIN BIN

will make money for you this year because—

First. You can thresh direct into the bin and eliminate the expense of sacks, twine, labor and the waste of threshed grain which you have with the old method of hauling the grain from the thresher.

Second. You have ample storage facilities at all times and are not dependent on congested elevators, freight car shortages and low markets. You are assured of a place to keep your grain until it is to your advantage to market it.

Third. A Columbian Steel Grain Bin is absolutely proof against wind, rain, fire, rats, birds, or any other such hazards. It is the best possible insurance for your grain.

Columbian Steel Grain Bins are solidly constructed of the best quality of rust-resisting galvanized sheet steel. The sides are of 20 gauge metal, the bottom of 24 gauge and the roof of 26 gauge. It is of sectional construction and is held together by means of our patented joint which adds strength and rigidity to the walls. Additional strength is also secured by corrugating the upper half of each sheet. It is shipped knocked down and is so easy to erect that any one can set it up in a few hours time. It can be erected on a platform mounted on skids and easily transported to any part of the field.

Every Columbian Grain Bin is provided with a 5 ft. by 2 ft. steel door which has a hasp for locking. There is also a collapsible shoveling board which prevents the grain from flowing down any faster than it is shoveled away. A sacking spout is furnished by means of which over half of the contents of the bin may be removed without shoveling.

Do not delay in ordering your **Columbian Grain Bin.** Make sure of obtaining one of them by giving your dealer your order NOW for future delivery. Insist on a **"COLUMBIAN"** bin. If he cannot take care of your needs write us direct for our complete illustrated descriptive circular No. 300.

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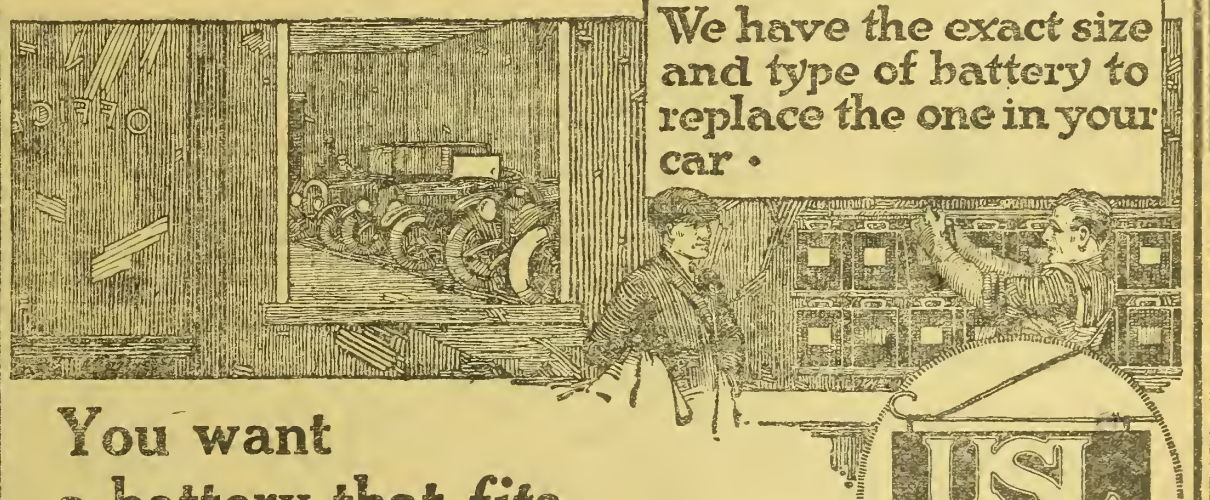


We have the exact size and type of battery to replace the one in your car •

You want a battery that *fits*

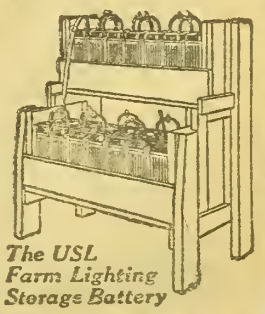
"YOU'RE right. You can't put a short, fat battery into a long, slim box in your car. Then you want a battery with terminals that will shake hands like old acquaintances with your car's wiring terminals.

"But the main thing is to give you a battery with the right capacity to work in harmony with your car's electrical system. Your cutting-in-speed counts—that's the speed at which your generator begins to do business—and the number of amperes it feeds into the battery. Those are just some of the conditions your battery must work under. What it all means is that you want a battery of the right capacity to digest the current fed into it and to handle its work without strain.

"We have USL Batteries in all sizes and types to replace batteries of all makes. But we won't sell a battery if your old one is repairable. No matter what its make, if its plates are still sound enough, we'll rejuvenate and guarantee it."

When you *do* need a battery, your nearest USL Service Station will sell you a USL with extra-wear Machine-Pasted Plates. It will be an actually *new* battery, too. The factory ships it "Dry-Charged" so you get it—not partially worn out but *fresh.*

USL STORAGE BATTERY SERVICE



The USL Farm Lighting Storage Battery

USL Golden Rule Service Stations—*everywhere.*

U. S. Light & Heat Corporation, Niagara Falls, N. Y.

Likely there's one of our fifteen hundred service stations in your town. If there isn't, for the address of the handiest, just drop a post card to the nearest of the following distributors:

THE AUTO STORAGE BATTERY CO., Denver, Colo.
THE MOTOR CAR EQUIPMENT CO., Salt Lake City, Utah.
EL PASO BATTERY & IGNITION CO., El Paso, Texas.

The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

The Deserted Garden.

Under the sagging arch of vines
The rustic gate still swings,
And just inside, a gnarled old tree,
In which a redbird sings.
Down grass-grown paths where long ago
The sweet alyssum marked the way,
The vine-entangled dial stands
Shadowless through the day.

The crumbling fountain's song is stilled,
The bowl is filled with sodden leaves;
The old stone seat, moss-stained and gray,
For old companions mutely grieves.
Only a wandering butterfly
Comes near to kiss the rose;
Or a quivering, silver humming bird
Dips where the poppy grows.

Through mists of silvery, shadowy dusks,
In hours of deepening gray
The happy spirits steal a-down
The old remembered way;
There phantom sweethearts keep their tryst
Beneath the sheltering boughs,
And whispered benedictions rise
In love's replighted vows.

—Whitelaw Saunders.

Lets Go to the Mesa Verde.

You've been to Estes or don't want to try Yellowstone this year? All right, we've been saving a little spot in the southwest corner of the state that has long been the delight and mystification of dwellers in the valley, of visitors and of archaeologists the nation over.

One of them said that every canon in the country was full of prehistoric houses, but as some of them are buried beneath seven feet or more of debris, you will prefer going to this one which is already opened up, and where there is a small hotel and some cottages for the visitors who come every year. Let's start for Mesa Verde National Park then.

Going from any point along the north and south highway you must cross one of two passes—Poncha pass out of Salida, or La Veta pass out of Walsenburg into the San Luis valley and proceed across the west side of the valley to Wolf Creek pass, which is the only road into the San Juan basin from the east. A hardened garage man—used to mountain scenery, described Wolf Creek pass as "twenty-five miles of thrills." From the pass the road leads west through Durango and Mancos to the Mesa Verde and its scenery, scenery all the way from Del Norte to Lookout point.

Lookout point is the sentinel of the mesa and the road winds up past its steep side as if the visitor must be approved by the old rock which was the original "Western Union" in the Montezuma valley. At almost every point in Montezuma valley this mountain may be seen, not a peak—but a great rocky promontory of the mesa. From it night after night messages flashed in signal fires from the Utes on Lookout to the Utes on Blue mountains, far to the west in Utah. It doesn't take much imagination to revivify the great blazes that used to rise and it brings back the past with a rush.

From that point to Spruce Tree camp in the midst of the park the past is of paramount interest. These cliff dwellers' homes were used and forgotten long before the advent of the Utes and Navajos who were in the valley when the white man came. They belonged to a race of little industrious people who dwelt in them, nobody knows how long ago. Archaeologists and ethnologists have opened the ruins, clearing out debris, strengthening weak walls and making some of the picture drawings on the wall clear to our less studious minds. Now the visitor can climb down and through all the rooms of the various houses and palaces which are built under the overhanging rocks of the great canons. Spruce Tree House and Cliff Palace are the largest of the houses and have been more thoroughly excavated. A little description of Spruce Tree House will serve to interest the would-be traveler there.

"Spruce Tree House is 216 feet long and 89 feet wide at its greatest width. There have been counted 114 rooms and eight kivas. In places the structure was three stories high, and it is estimated to have housed 350 people. Probably the first features to attract our attention are the circular openings, averaging perhaps fifteen feet in diameter. These are the kivas mentioned above. They were underground and are supposed to have been used as gathering places by the men of the different clans, also for secret ceremonials.

"The doors and windows of all the dwellings will be found very interesting. They are usually small and these primitive people had discovered the use of the sill and lintel in making these openings, but not of the jams.

"In some of the rooms small portholes will be found, sometimes placed at an angle oblique to the wall. It would appear that these were for defensive purposes."

There is some point about each of the houses interestingly different and some of their ceremonial places such as Sun Temple might be described more at length, but we can't stop here to do that. You can find pictures of the ruins and free descriptive literature can be secured from any large ticket office. Balcony House, Oak Tree and Willow House—the Tower are all there to be explored. Beside these there are natural bridges on the mesa and in the valley that make the Virginia one hide its head in utter inadequate shame.

As you come back from the park to Lookout again you notice to the west, if you have not noticed it before, the great mountain they call the Sleeping Ute. It has much the form of a gigantic Indian lying on his back, his head and flowing hair not far from Cortez, his toes far to the south, and you will wonder, as do all other visitors, what the sleeping Ute knows and will not tell about the days when the canons were busy with the life of the little brown people and then what came to silence that life. The signal fires are flashing from the top of Lookout, not as they did long ago from Ute to Ute—to come and help make war against the enemy—but to come and see.—E. D.

Woman Travels 457 Miles a Year for Water for Family.

Walking a distance of 457 miles a year to secure water for family use is the record of one New Mexico woman as revealed by the survey of farm home conditions made by the U. S. government last June, which has recently been summarized. This she did in addition to the housework, helping with the farm work and with the care of the livestock. The following is the story of her life on the farm as told by herself in the survey sheet which she filled out and as recently published by the New Mexico College of Agriculture:

"Live on a farm of 800 acres, 1¼ miles from a small town. No auto, but use horses and wagon as a means of transportation. During the first six months of 1919, five members of the family were ill in bed, making a total of 23 days illness in bed for the family for the first half of the year. There are six in the family; two children between 10 and 16, and two under 10 years of age; eight extra helpers for dinner during harvesting, silo filling or threshing; no extra help in the house. The family lives in a six-room house, lighted with lamps and heated by stoves. Do the washing and ironing for the entire family; make all my own outer garments and part of the children's clothing; bake all the bread; have the help of the three children in carrying in wood and coal and running errands. No labor saving devices except a built-in kitchen cabinet or cupboard, a sewing machine, and a washing machine run by hand power. Carry the water for household purposes a distance of 400

(Turn to Page 24.)

Hosiery of Real Value

For all occasions and every season of the year, *Victor Hosiery* is the best value that you can possibly buy. Woven of the finest yarns; purest dyes used—no chemical substances to add weight or injure the thread.

Victor Hosiery possesses rare charm of beauty, and will endure extraordinary wear. Special reinforcements. Ask your dealer or write us Byrne & Hammer Dry Goods Co., Dept. Victor Mills, Omaha.

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For Women Children & Men

ESTABLISHED 1879 Stark JEWELERS

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Forty years we have been making a specialty of Watches, and we give you the benefit of our experience.

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ORDER BY MAIL—We take the risk of pleasing you.

The Denver's Store for Boys

has developed into a big business enterprise because its broad, generous stocks for selection—its guaranteed qualities and its fair prices, have made thousands of regular customers.

Trust us with your mail orders—if we send you suits or furnishings that do not please, you return them at our expense—the money is not ours if we cannot satisfy you.

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The Wonderful Gulbransen Player

Is the greatest player piano value on earth. It carries the longest and most binding guarantee. It is sold at the factory price which is stamped in the back. It is sold through the factory distributors only, and shipped to you freight paid.

Buy a Gulbransen and save $200.00 which any retail dealer would charge you for a player not nearly so good. Your money back if you are not satisfied.

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Positively makes clothes snow white without rubbing. Does not injure fabric, nor fade any color. Package of six tablets, enough for three ordinary washings, 15 cents postpaid. Money back if dissatisfied. Agents wanted.

W. M. Hoffman & Co., Box 1072, Denver, Colo.

New Fashion Service.

All Patterns Now 12 cents Each: Address WESTERN FARM LIFE, Pattern Department, 1518 Court Place, Denver, Colo.

Read This Before Ordering Patterns.

Write your name and postoffice address plainly. Enclose 12 cents in stamps or coin (wrap coin carefully) for each pattern ordered. Send your order to Pattern Department, Western Farm Life. Our patterns are furnished especially for us by the leading fashion designers of New York City. They are mailed out from Chicago headquarters to save time. About ten days should be allowed us to get patterns to our customers. **Please do not order from any list published by us before March 1, 1920.**

Limited space prevents showing all the styles. We will send our 32-page fashion magazine containing all the good, new styles, dressmaking helps, serial story, etc., for 5 cents postage prepaid, or 3 cents if ordered with a pattern. Send 15 cents for magazine and pattern.

9688. Ladies' Waist.—Cut in sizes 36, 38, 40 and 42 inches bust measure. Bows of reversible satin ribbon adorn this smart waist, lending a very dainty touch.

9693. Ladies' Surplice Waist. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. Tight-fitting basque lines are maintained in this model which wears a narrow shawl collar.

9684. Ladies' One-Piece Apron.—Cut in sizes 36, 40 and 44 inches bust measure. Practical because it is in one piece and attractive because it has a soft roll collar and a set-in vest.

9548. Men's Overalls.—Cut in sizes 34, 36, 38, 40, 42 and 44 inches. This is a standard type of overall that is always good for it features the bib-front.

9102. Girl's Dress.—Cut in sizes, 6, 8, 10, 12 and 14 years. The novel treatment of the collar is the decidedly interesting feature of this gingham and linen frock.

9184. Childs' Rompers.—Cut in sizes 2, 4 and 6 years. The most practical garment for the strenuous hours of playtime either for little boys or girls is a pair of rompers like the ones shown, made in percale or chambray.

9687. Ladies' Two-Piece Skirt.—Cut in sizes 26, 28, 30 and 32 inches waist measure. A slash pocket appears at each side of the front finished with a neat trimming lap of self material.

9314. Ladies' and Misses' Skirt.—Cut in sizes 16, 18 years, 26 to 32 inches waist measure. Straight side-panels form pockets and give long lines.

A Letter From Dr. Hadley.

Following is a copy of a letter written by Dr. Arthur T. Hadley, president of Yale University, to Mr. Alfred M. Wilson of Clifton, Colo., author of the article on "Class Consciousness," which appeared in a recent issue of Western Farm Life. Mr. Wilson's article has attracted wide attention not only among farmers, but also among those engaged in educational and sociological work. President Hadley is known the world over as an authority on economics and his opinion concerning the article is therefore of unusual interest. He writes:

"Let me thank you most heartily for your letter and its enclosure, and congratulate you on having apprehended so clearly two sides of a question of which few people see more than one—the need of the development of class consciousness and the danger that that class consciousness will make people contribute less to the good of the whole community instead of contributing more. If you can make the Farm Bureau produce the kind of results you want it to produce you will have deserved well of the republic.—Arthur T. Hadley."

Bread and Cake Boxes.

Nearly every farmer's wife owns a japanned bread box and cake box. They are usually brown with gilt lettering. There was a time when this tinware didn't cost much money. If a box rusted out it was carelessly tossed on the rubbish pile and a new one purchased. But price one of these boxes now! You will think twice before you chuck it. And really it isn't at all necessary to let it get into a condition that will suggest discarding it. If the japanning shows signs of wear, go to the store and buy a small can of colored enamel. Clean the surface of the box and apply a thin coat of the enamel with an ordinary varnish brush. The rust will immediately be checked. That will be much cheaper than a new bread or cake box.

If in need of advice, ask Western Farm Life Service Bureau.

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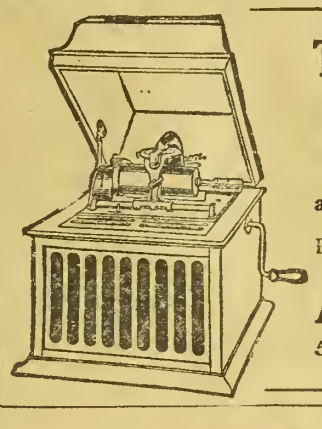
6,000 acres of Carey Act Land in Green River Valley, Wyo., under authority of State of Wyoming. Water right $25 to $35. Land fifty cents per acre. Free range, access to forest reserve, timber. Terms.
Also improved hay ranches at bargain prices.

Fremont Land Co., 114 West 17th St., Cheyenne, Wyo.



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Hudson has unremittingly kept the issue of performance to the fore. Not simply because its mastery is indisputable.

Rather because this question is vital above all. It must always be so. It must always be the measure of any car's title to worth.

Hence undue emphasis has never been placed on Hudson's four years' leadership in fine car sales. Largest sales are not infallibly proof of greatest merit. Hudson has no need to offer them as such.

Yet their importance cannot be overlooked. Here is the massed opinion of far the greatest number of owners of any fine car in the world. Some are driving the earliest Super-Sixes built—now more than four years old. Some acquired Hudsons but recently. But how unanimously they hold no car can rival it.

What 90,000 Owners Know First Hand

Those who have had their Hudsons longest are perhaps its most emphatic champions. They know it best. They have seen it pitted with triumph against every situation that can confront an automobile. Today their Super-Sixes are giving service, such as is literally beyond the performance capacity of many new cars that cost more.

Certainly no fine car is so highly regarded by such a large following.

See What It Has Done

Were its position less deserved could Hudson hold the loyalty of all these? Were its supremacy less decisive, surely five years must have discovered the rightful successor.

But time only brings fresh evidence of Hudson leadership.

In speed—in power—in acceleration—in hill-climbing, it has never been matched.

The most abusive tests to which a car was ever subjected have failed to find its endurance limit. Could other types adopt it, they might share Hudson's unmatched ability. But Hudson controls it. By right of invention Hudson alone can use it.

It will not be possible to supply all who want Hudsons. So even though you may not want your car for several months, now is not too early to place your order.

Hudson Motor Car Company, Detroit, Michigan.

(3078)

Farmers' and Stockmens' Exchange

Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

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PUREBRED WHITE ROCK EGGS $2 PER 15; $7 per 100. Mrs. Elsie Holderness, Dillwyn, Kansas.

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BARRED ROCK EGGS FOR HATCHING, FROM pens, either light or dark, $3 for 15; from range flock, $6 for 100. Send for mating list. Chester Blunt, Route 1, Greeley, Colo.

LAYMORE BARRED ROCKS—EGGS $5.00 FOR 15. Baby chicks 50 cents each. Nebraska State Fair and Missouri first prize winners. First in Colorado in profit with over $70 each in 1918. J. R. Anderson & Son, Fort Morgan, Colo.

RHODE ISLAND REDS

BEAUTIFUL ROSE COMB REDS. EGGS 30, $3, baby chicks 20c, postpaid. Lucy Ruppenthal, Lucas, Kansas.

ROSE COMB RHODE ISLAND RED EGGS FOR hatching. Big bone, deep red, 100 $7; 50, $4; 15, $1.25. Mrs. Mark Flanagin, Pawnee City, Nebr.

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

LOWER'S POULTRY FARM, ARVADA, COLO., is the oldest and largest breeder of thoroughbred S. C. Rhode Island Reds in the West. Our stock is line bred, from selected heavy laying type for seventeen years. Eggs for hatching, $12 per 100, $5 for 30. Send for catalog and price list of stock and baby chicks.

LEGHORNS.

RASCALLY BAD LATE SEASON, BUT NOT TOO late for Buff Leghorn chix. You can have winter eggs from hatches to late July. Champney, 2057 S. Broadway, Denver.

FARMERS IF YOU WERE BETTER ACQUAINTed with the Buff Leghorn you would have more eggs. Baby chix and hatching eggs now ready. Champney, 2057 So. Broadway, Denver.

BABY CHIX—BUFF LEGHORNS MARCH 10TH, weekly hatches after this. Other breeds in any quantity. Book your orders early to avoid disappointment. Champney, 2057 So. Broadway, Denver.

ANCONAS.

SUNNYSIDE EGG BRED S. C. ANCONAS—THE world's greatest egg machines; they hold the world's record for egg production. Do you raise chickens? Then why not raise the best. Our Anconas are from the best egg-producing strain in the world. We have culled and reculled our flocks until only the best are left, so you may be sure they have the egg qualities bred into them. 90 per cent fertility guaranteed. Eggs after May 15th, $1.25 per setting, $6.00 per hundred; baby chicks, $20 per hundred, 50 or less 25c each. Order at once. Mrs. J. B. Shenk, La Junta, Colo. Box L, R. No. 2.

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PARTRIDGE WYANDOTTES—CHOICE STOCK and eggs. Fred Karre, Cotesfield, Neb.

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BLACK MINORCAS, BUFF ORPINGTONS; eggs; chicks. Frank A. Agnew, Southside, Omaha, Nebr.

BUFF ORPINGTONS AND SILVER SPANGLED Hamburgs. Orpington eggs $7 hundred, $1.25 setting. Hamburg $1.50 setting of 15 eggs. Leslie Chrestenson, Route A, Akron, Colo.

YOU BUY THE BEST CHICKS FOR THE LEAST money, guaranteed alive or replaced free; 150,000 to ship everywhere, 18c each; 500 for $89. From Colwell Hatchery, Smith Center, Kan.

COLUMBIA HATCHERY—WE CAN SUPPLY you with any quantity of Baby Chicks. We have 14 varieties including all leading breeds. Write for our prices, you will save money. P. O. Box 1102, Denver, Colo.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HOGS

PEDIGREED HAMPSHIRE BOARS, $20 AND $25. Everett S. Rogers, Stratton, Colo.

BIG TYPE POLANDS—SPRING PIGS FOR SALE at weaning time. Correspondence solicited. Gad Barney, Haswell, Colo.

REGISTERED BIG BONE SPOTTED POLAND China pigs. Papers furnished, $25.00 each. Joseph P. Smith, Branson, Colo.

REGISTERED DUROC JERSEYS—BIG TYPE, choice quality sows, gilts, and March pigs. F. W. Ruppenthal, Lucas, Kan.

FOR SALE—REGISTERED BIG TYPE DUROC-Jersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

FOR SALE—POLAND CHINAS, BIG TYPE BRED gilts, young boars, weaned pigs; all registered and the real big boned kind; prices reasonable. F. L. Toliver Stock Farm, Ft. Collins, Colo.

BUY YOUR DUROCS AT WEANING TIME, AND make the big profits yourself. I have prize-winning gilts and boars a few weeks old sired by champions that should be worth several hundred dollars each this year. Write for prices. J. N. Caldwell, Willow Grange Farm, Littleton, Colo.

REGISTERED BIG TYPE DUROC JERSEY hogs. We are now taking orders for boars and gilts of March farrow for May and June delivery. Have one fall boar left. All sired by Orion Cherry King 15th, and J. O. D. Joe Orion, out of the best herd sows. Write for prices. Money back if not satisfied. J. O. D. Ranch, Aroya, Colo.

CATTLE.

HOLSTEIN GUERNSEY HIGH-GRADE CALVES. Write E. Terwilliger, 289 Lake St, Milwaukee, Wis.

FOR SALE—ONE WELL MARKED REGISTERED Holstein bull calf. Loving White Wyandotte Farm, Siloam Route, Pueblo, Colo.

FOR SALE—A SMALL HERD OF HIGH GRADE Guernsey milch cows and heifers. Also a few Holsteins and reds. Geo. J. Gordon, Bennett, Colo.

FOR SALE—REGISTERED SHORTHORN AND polled Durham bulls and heifers. One double standard 4-year-old roan real herd bull. Please don't write unless you want to buy. J. H. Held, Sterling, Colo.

PURE BRED AYRSHIRE BULLS, FIVE AYRshire bulls of Cavalier's breeding, from 3 to 18 months old, price $100 to $150. I will also sell Cavaliers Rosewelling 3-year herd bull. W. M. Cady, Flat Top, Colo. Shipping point, Limon, Colo.

REGISTERED HEREFORD BULLS—THIRTY bulls 12 to 24 months old, of the best Anxiety breeding, hardy and in good condition, with best of bone and ready to go on the range. One 2-year-old bull, full brother to champion cow at Denver, and a 5-year-old bull, the sire of most of the above. Priced for a quick sale. J. O. D. Ranch, Aroya, Colo.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

GUARANTEED SEEDS—ALFALFA $12.50 BU.; sweet clover, $17.50; red clover, $27.50; common millet, $1.75; German or Siberian millet, $2.25; red or black caneseed, $1.45; white cane, sumac or sourless caneseed, $1.75; seed corn, $3.50; white kafir, $2.15; pink kafir, $2.25; Schrock, $2.50; Sudan, $13.50 hundred; red top, $13.00 cwt.; sacks free Satisfaction or your money back. Ship from several warehouses and save you money; there's a satisfied customer near you. Liberty bonds accepted at par. Meier Seed Co., Russell, Kansas.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

SOLDIERS—640-ACRE HOMESTEADS, SEVEN months residence. Duff, Casper, Wyo.

FOR SALE—IMPROVED 320-ACRE STOCK and farm ranch. Justus Gray, Purcell, Colo.

WANTED—TO HEAR FROM OWNER OF FARM for sale. Mrs. W. Booth, H. P. Station, Des Moines, Iowa.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wis.

IF YOU WANT TO SELL OR EXCHANGE YOUR property write me John J. Black, 33d St., Chippewa Falls, Wis

LARGE SHEEP, CATTLE, FARMING RANCH, 50 miles east of Denver. Terms if desired. C. G. Parrett, Byers, Colo.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

REAL ESTATE WANTED—SELL YOUR PROPerty quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., Dept 11, Lincoln, Nebr.

600-ACRE RANCH, TWO SETS OF GOOD IMprovements, 250 under ditch, some water, near Brighton; fine dairy or stock ranch; fine beet ground; 1 mile of beet dump. Address Owner, Box 215, Brighton, Colo.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description and cash price. Morris M. Perkins, Columbia, Mo.

FARM AND CATTLE RANCHES—CHOICE LIST. If interested call or write F. E. Wrockloff, Merchants Bank, Seventeenth and Curtis Streets, Denver, Colo.

320-ACRE FARM FOR SALE CHEAP—6 MILES south of Fowler in Otero county, Colo. All good land; 40 acres has been in crop. Price, $12.50 per acre, one-third cash. The Irrigated Farms Mortgage Co., Cooper Bldg., Denver, Colo.

MANY KINDS FINE FARM LANDS FROM which to select. Markets, climate, schools and roads good. State in first letter (1) crops and (2) livestock you want to raise; (3) acreage wanted; (4) improved or unimproved; (5) terms wanted. Descriptions can then be sent to suit you. Railroad Farm Bureau, San Antonio, Texas.

WYOMING WANTS FARMERS—WE HAVE 100,000 acres of irrigated land from $40 to $80 per acre, perpetual water rights, easy terms, bumper crops of alfalfa, grains, sugar beets, vegetables; near towns, railroads, markets, and sugar factories. Write for resource map, giving reliable information, to Wyoming State Board of Immigration, 315 State Capitol Building, Cheyenne, Wyoming.

ATTENTION STOCKMEN — WE HAVE TWO stock ranch bargains. Just what you are looking for; each ranch comprises 320 acres deeded land with substantial improvements and large acreage under irrigation, and in alfalfa, timothy, clover hay, unlimited outside free range, with 4,000 acres of leased land under fence for fall pasture. These ranches are located three miles apart, 125 miles from Denver. Good shipping point, big money makers. Prices $12,000 and $13,600 on good terms. See us at once for these. Reynolds, Covey & Reynolds, 625 Exchange Bldg., Denver, Colo.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

LUMBER

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WRITE FOR DELIVERED PRICES ON CEDAR posts. Pay after unloading. J. B. Overton, Sagle, Idaho.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

RED CEDAR SPLIT FENCE POSTS—GUARANteed full size and A1 quality. You pay after unloading. Send for booklet and prices delivered your station. Kirk Company, Box 1138-S. Tacoma, Wash.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

RAZOR HONING, 50c; SHEARS, BLADES, 2½c and 5c; best finish, good workmanship. M. L. French, Fremont, Nebr.

INVENTIONS.

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

HATS CLEANED.

OLD HATS MADE NEW. S. M. BELWOOD, 1542 Court place, Denver.

SEPARATOR.

SHARPLES SEPARATOR, NEW, CAPACITY 650 pounds, $70, cost $135. Walter Andersen, 4900 S. Broadway, Englewood, Colo.

TOBACCO.

TOBACCO—KENTUCKY'S BEST "OLD HOMEspun" chewing and smoking. Direct from farmers. Trial offer, 2 lbs. postpaid $1.00. Kentucky Tobacco Assn., Dept. 50, Hawesville, Kentucky.

PATENTS.

PATENTS—BOOKLET FREE. HIGHEST REFERences. Best results. Promptness assured. Send model or drawing for examination and opinion. Watson E. Coleman, Patent Attorney, 624 F st., Washington, D. C.

TANNING

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

HONEY.

"THEBESTO" ROCKY MOUNTAIN HONEY, light colored, thick, fine flavored; per can, five pounds net, postpaid, anywhere west of Ohio river, $1.50. Send remittance with order. The Colorado Honey Producers' Association, Denver, Colo.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

Preparing Wool for Market.

The first thing in properly preparing wool for market is to get the fleece off the animal without spoiling the attractive qualities of the wool. The sheep should be shorn on a clean floor, for dirt, chaff, and straws picked up by the wool from a dirty floor lessens the attractiveness of the fleece and its value per pound. Machine shears handled with reasonable care make a neater looking job and do not make so many "second cuts" as hand shears. They also secure more wool. "Second cuts" make fleeces less attractive to the buyer because the short wool produced by these cuts is not so valuable as the longer wool.

Naturally the most attractive part of the fleece, the shoulder wool, should be exposed to the buyers' view. This is done by spreading the fleece out, flesh side down on a clean floor, folding the sides in until the fleece is about 15 or 18 inches wide, and then rolling the fleece forward from the breech toward the shoulder, taking care to fold back the neck piece on top of the shoulder wool just before the roll is finished. After the fleece is spread and before it is rolled up, all tags and dung locks should be removed, because after the wool is packed they are going to come in contact with other parts of the fleece and often stain them. This stain cannot be removed, and makes the stained wool less attractive and less valuable. The tags and dung locks should be removed and sold separately.

Paper twine is the most acceptable for making a fleece attractive. If it cannot be secured, use wool twine or a hard glazed twine and use only the amount necessary to tie the fleece. Binder twine should never be used as its fibers get into the wool and cannot be separated from it. They will not dye, but appear in the finished cloth as undyed fibers. It does not make the fleece attractive, but instead actually makes it unattractive. One large commission house has a standard dock of 5 cents per pound on all wool tied with binder twine.

Black fleeces should be packed separately, but if this is not possible put them in the top or bottom of a bag where they will touch as little of the other wool as possible. The black fibers become mixed with the white and make the wool less attractive to prospective purchasers. The black fibers must be sorted out, for if not, the white wool is liable to be made up into white goods which would contain black fibers and thus have its value lowered.

When the wool is sacked, pack it firmly, for the sacks are then easier to handle, more of them can be placed in one car, and fewer sacks are needed—R. B. Millin, Sheep Specialist, Idaho Univ.

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.

C. F. Burke, Mgr. Pueblo, Colo.

WHO NEEDS A PERFECT INDIVIDUAL TO HEAD THEIR HERD?

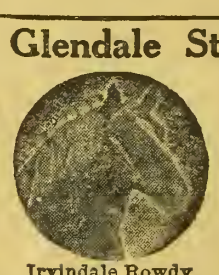
Son of a 23.23 lb. 3-year-old heifer—an unusually good yearly producer—by a son of our $5,000 bull—out of the 30-lb. cow who produced the great show cow and State Champion Junior 3-year-old Lilu Segis Pontiac, 34.25 lbs. butter in 7 days.

He is about one-half white, and a beauty. Ready for light service. The first check for $350 takes him.

SANBORN MEADOWS,

MRS. R. G. DOUGLAS. RUSH, COLO.

Glendale Stock Farm



Irvindale Rowdy Grand Champion Belgian Stallion Chicago, 1917, Denver, 1918 and 1919

Breeders of

BELGIAN HORSES and POLLED HEREFORD CATTLE

Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.

The Divide Herd

Young Bulls

We are now offering at very reasonable prices some good Shorthorn bulls suitable for small herds. Fall calves and a few yearlings priced for quick sale. Full particulars on application.

THE ALLEN CATTLE CO.,

SHORTHORN BREEDERS,

Colorado Springs, Colorado

REGISTERED BIG TYPE DUROC JERSEY HOGS

Am offering some good Spring Gilts and Boars. Also some good fall gilts. Write for prices and breeding.

August F. Borgmann,

R. F. D. 4. LONGMONT, COLO.

REGISTERED

DUROC JERSEY HOGS

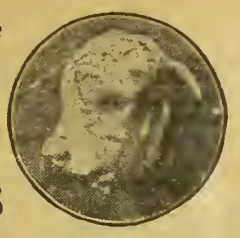
BRED GILTS FOR SALE.

R. C. VAN SCOY & SON

Highland Sta., Route 5. Denver

Phone Arvada 105-R-2.

The Hereford Corporation of Wyoming
Box 876, Cheyenne, Wyoming



Registered Herefords

We Offer For Sale

3 Loads Coming 2-Year-Old Bulls
2 Loads Coming 2-Year-Old Heifers

And can also take care of any breeder who wants a few good bred heifers and cows.

Denver office
406 Live Stock Exchange Bldg.
RAYMOND S. HUSTED, Mgr.

DeWITT HEREFORDS

HERD BULL—MISCHIEVOUS JR., by THE HEIR

His dam is Mischievous 3rd, a full sister of BEAU MISCHIEF and the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of
GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

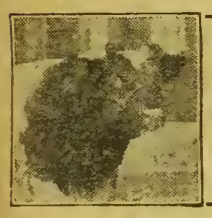
L. G. Davis Herefords

ANXIETY BRED

For Sale—3 cars of registered Anxiety Bred Open Heifers in lots to suit purchaser. Can be seen at my Wynnewood ranch six miles from Denver.

WE HAVE A FEW HIGH CLASS YEARLING BULLS FOR SALE

L. G. DAVIS, Saratoga, Wyo.
Or Wellington Hotel, Denver



MR. FARMER

The thick-fleshed, good milking Shorthorn cow is the kind that will make the surest and best return on your farm. Her steers will top the market and so will she when it is time to turn her for beef.

It pays to grow Shorthorns. Purebreds pay the best.

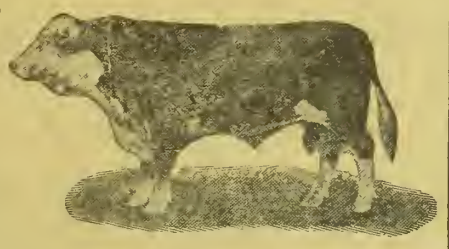
American Shorthorn Breeders' Association
13 Dexter Park Avenue. Chicago, Illinois
ASK FOR LITERATURE.

Registered Breeding Bulls and Heifers

HEREFORDS
SHORTHORNS

Young sctock of both sexes for sale at all times. Our sales yard is located within two blocks of The Denver Union Stock Yards. We are pleased to show our stock at all times.

THE LOWELL PUREBRED CATTLE CO.
Union Stock Yards, Denver.



Verdun Fairfax, 547803.
FOR IMMEDIATE SALE.
Six young bulls of Fairfax breeding, $300 to $500. Two choice herd bulls, and Fairfax Heifers. Also few choice heifer calves. All stock disease free, and guaranteed.
Prompt Attention to Inquiries.
SNEFFELS LAND & CATTLE CO.
RIDGWAY, COLO.

Cornforth Live Stock Co.

ELBERT, COLO.

Forest Glen Shorthorns

Our sales have been good the past year and still offer a few choice animals for sale.

BEAU ASTER

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER
Holyoke, Colo.

COL. H. C. JENNINGS.
Purebred Livestock

AUCTIONEER

Also conduct Sales of Real Estate.
534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

WILLIAM UPP

Livestock Auctioneer

Purebred Hogs a Specialty.
DEER TRAIL, COLO.

H. C. DENNIS, Auctioneer

FORT MORGAN, COLORADO
Registered Shorthorn and Jersey Cattle
Real Estate Sales Conducted. I can sell your real estate if it can be sold.
Wire at my expense for dates.
Phone: Res. Morgan 155J; Office Morgan 15

FOR SALE

Some good March pigs, both sexes, suitable for boys' and girls' clubs.

Duroc Jerseys and Poland Chinas.

Colorado Agricultural College
Fort Collins, Colorado.

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
JOHNSTOWN, COLO.

JAMES PONTIAC DEKOL ORMSBY

High Class Jerseys

The demand for Jerseys has become so persistent that our Mr. Dixon is now in the east to get another car load. We hope soon to be able to supply the demand.

Remember we had the Grand Champions at the Denver Show, in fact, all the Championships.

Only one bull of serviceable age left, but have some corking good calves.

ALSO SOME EXTRA GOOD BRED GILTS.

McCLENAHAN & DIXON, Greeley, Colo.

Registered Duroc Jerseys.

Edbrooke Durocs - Green Acre Farm

My Herd Boars Are Defenders of Col. Breeding.
Green Acre Defender 166505. Edbrooke's Defender 165263
The Biggest of the Big Type.
My Sows Were Prize Winners Denver 1920.
The Better Your Stock, The Better Your Returns.

H. W. J. Edbrooke, Prop., 8th & Wadsworth, Denver

Shorthorns That Milk

Victoria 228667

R. of M.—15,175 Lbs., 546.3 Lbs. Butterfat. Class A. Only a few cows of this breed exceed this record in Class A official test.
Bulls and Heifers for sale at Reasonable Prices.

The Pine Valley Dairy and Farms Company
Seeley G. Rose, Manager. COLORADO SPRINGS, COLO.

15 Excellent A. R. O. Records

Made in past two months by

Wallie Farm Registered

HOLSTEINS

Thirteen of these made on junior 2-year-olds, ranging from 12 to 16½ lbs. butter in seven days. Bull calves from these dams for sale. Price $100 to $400. Also a few heifers.

Herd Sire
KING JOHANNA SEGIS PONTIAC
"His sisters have broken over 100 world's records."

W. G. Foster, Owner, 4800 So. Penn.
Phone Englewood 122, Denver.

MILKING SHORTHORNS.
All Cows Officially Tested. 125 in Herd.
Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.
THE BONVUE FARMS CO.,
Stockyards, Denver, Colo.

MILK RECORDS

Do Not Replace Straight Bates Shorthorn Blood

FOR

Straight Bates Shorthorns are the "foundation source" of the Milking Shorthorns of England and America.

The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

For Sale --- Registered Shorthorn Calves

EITHER SEX—6 WEEKS OLD—$50.

The mothers of these calves have three crosses on top of their pedigree which trace to Choice Goods, the St. Louis World's Fair Grand Champion.

The sire is a grandson of the famous bull March Knight.

Your Chance to Get Some Real Shorthorn Blood.

OTTO RAMSTETTER, Golden, Colo.

HOLSTEIN BULL CALVES

We have for sale some mighty good ones with fine advanced registry backing. Prices from $150 to $500. Write us.

PAHGRE VALLEY RANCH
Montrose, Colo.

REGISTERED JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.

H. J. VAUGHN, KIRK, COLO.

FOR SALE

Beginner's young herd of REGISTERED HOLSTEINS, consisting of nine females, herd bull yearling and bull calves.

W. B. & E. B. Downs,
R. F. D. 1. Yuma, Colo.

Bargains in Bred Sows

20 yearling sows bred to farrow in August and September, priced to sell. All bred to our prize winning Crusader, winner at the Denver show. Shipped on approval and guaranteed.

"Daly's Durocs," Cambridge, Nebr.

Why Are Women on Dry Land Farms Discontented?

(Continued from Page 3.)

since I have had any new wearing apparel or have been anywhere except to our little local town that I do not know what the fashions are except by the pictures in some of the papers we take."

Should we condemn her if she wants to go somewhere that she may see how the women of her former world dress and act?

Fifth—Lack of active participation on the part of the wife in the business affairs of this marital partnership. On the farm there should be more mutual co-operation in this respect than in most any other occupation. During my months' work among them I heard a number of women express themselves after this fashion: "I did not know where we were going until we landed here. I had never been in the country for any length of time and the distance seemed to frighten me." I heard another woman say: "I do not know whether we have made anything or not. My husband believes that a woman has very little conception of matters pertaining to business."

A woman who is expected to keep her house in order and use her spare time taking the place of a man in the field or doing the chores and does not even know whether it pays or not, cannot be blamed for a positive dislike for the country.

There are a number of other reasons for this dissatisfaction on the part of the farm women out here, but as these are more or less applicable to the individual families I shall not mention them. Some thought it would be a lark to have a home in the country. The seriousness of the business in which they were about to engage was impressed upon them too late to turn back.

One woman who had been raised in a large eastern city told me very naively that most everything she had to buy in town had something to do with the farm, so she thought if she could only get on a farm living would be reduced almost to zero. How quickly came her disenchantment, and with it of course a natural antipathy towards the country.

Another woman said that she came here against her will, and I presume her mind was made up to dislike the country, and of course she could see nothing good in it. I called her attention to a few of the good features but she, like the born pessimist, always thought of something to off-set the good.

I have given the reasons which I think account for the general dissatisfaction of the farm women out here so far as my own observations have revealed them. I have supported my thesis with only a very few of the many circumstances and conversations coming to my notice. From my experience I am led to conclude that many of the inherent conditions of a new country might be alleviated if our school houses were only social centers; our neighbors more sociable with more neighborhood clubs organized and ourselves (the men I mean) were a little more considerate of the women folks, then they might be more content to remain out here.

If we could have as ample house room as stable room, as many modern appliances in the kitchen as in the field, as many new pieces of furniture as new barn conveniences, water as near the kitchen door as to the cow barn, and many other adjustments between the equipment of the farm and the house, then the life of the farm woman will be less of drudgery and more of recreation, less of unremitting toil and more of pleasurable enjoyment, and perhaps then she can see a vision of a new hope, that of a home carved out of the prairie where the husband and the wife will both be happy in their joint efforts to raise a family and secure a competence for old age.

Perhaps all dry land conditions are not the same. It may be that elsewhere the women are more satisfied. I feel confident, however, that under similar conditions, the women of any other region will be as dissatisfied as out here, for our women are as intelligent, cultured and industrious as in any like community.

Any new country is harder on the women than on the men, and this is no exception. The writer recalls very vividly how when he was talking to an old settler, in a well settled irrigated region, who had ridden the range when the country was young, said upon learning of our intention to try this type of farming: "Better not do it; that country is all right for men and dogs, but it is h—l on women and cats." Was he right?

Woman Travels 457 Miles a Year for Water for Family.

(Continued from Page 20.)

feet; have the care of 50 chickens; the eggs are marketed at the nearest store and the money is used for general housekeeping expenses. Help with the milking of 32 cows, wash the milk pails and separator. The cream is sold and the money used for household and farm expenses. Care for the vegetable garden, help care for the livestock and help with the farm work for eight months in the year. Help keep the farm accounts but keep no household accounts. Rise at 5 o'clock a. m. in the summer and the working day ends at 9:30 p. m., with no time free. In winter the day begins at 6 a. m. and lasts until 8 p. m. with no time off. Am working on an average of 15¼ hours per day with not even the noon hour free, for 365 days in the year. No vacation and no special days away from home during the year."

This is probably an exceptional case, but the results of the survey of farm and home show that very few of the New Mexico farm homes have labor saving conveniences. Two hundred forty-four women filled out the survey blanks and about one-half of these women reported water brought by hand from a distance of three to 400 feet, or an average of 47 feet. In over 60 per cent of these cases, the housewives did the carrying.

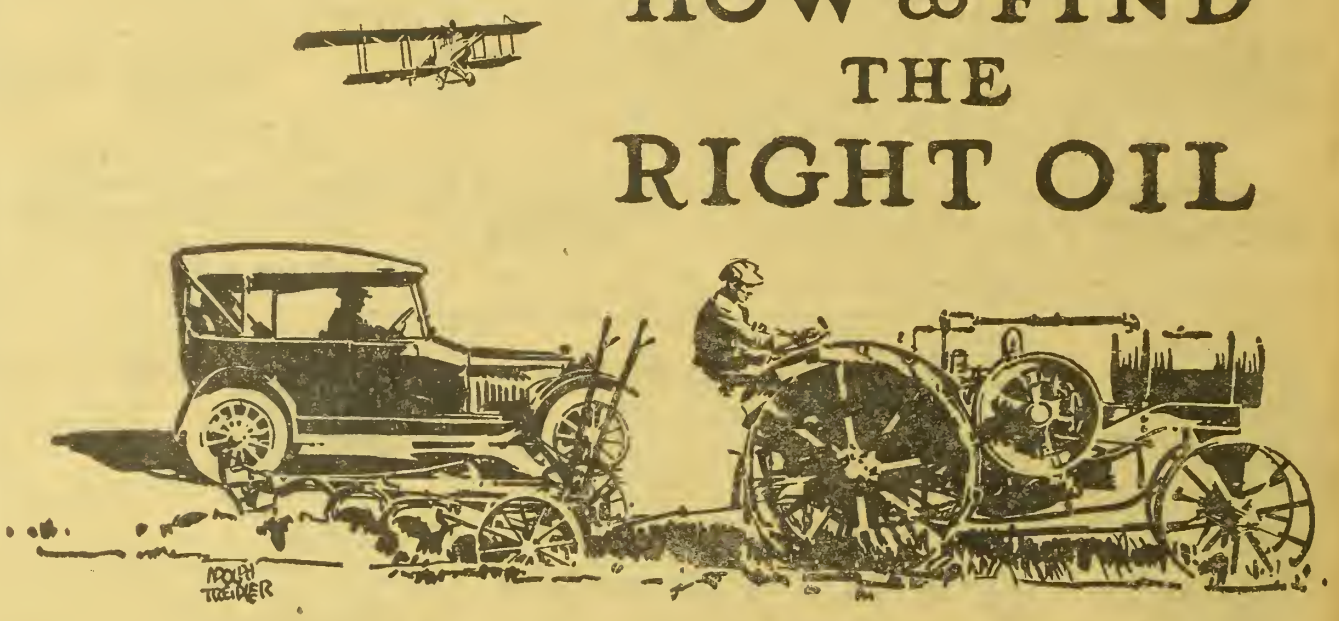
Amount of Water Carried.

One woman who lived on a farm and carried water for a family of five, which statistics show to be the average sized American family, reports that it takes six pails of water for the ordinary day and she has counted many times the 16 pails it takes to do the family washing. Six pails for 365 days in the year makes 2,190 pails; 16 pails for the washing, 52 weeks in the year, make 832 pails; making a total of 3,022 pails of water for a family of five in a year. Taking this as the usual amount of water used and the 47 feet as the average distance the water is carried, the average distance traveled in one year is 53 miles. It hardly seems possible, but the housewife must travel 47 feet to the water and 47 back to the house, making 94 feet for each pail of water, and in carrying 3,022 pails she must travel 284,068 feet, or a total distance of 53 miles. For the woman cited above it amounts to 457 miles.

Besides traveling this distance she must bear the weight of the water. Ordinary pails contain from 2½ to 3 gallons. Taking 2½ gallons as the amount contained in one pail, the 3,022 pails will equal 7,555 gallons. Using 8½ pounds, which is a low estimate, as the weight of a gallon of water and the container, she carries in one year 642,175 pounds, or 32.1 tons. This is not all, for the water she carries into the house must all be carried out again. So she lifts another 32 tons in carrying it out, which makes 64 tons carried a distance of 53 miles traveled in one year to furnish the family with water.

The farm bureaus now being organized all over the country are for the purpose of remedying such conditions as these, and by introducing simple and inexpensive equipment, eliminate the inconvenience and drudgery and make work on the farm convenient and life independent and happy.—The New Mexico Farm Courier.

HOW to FIND THE RIGHT OIL



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WESTERN Farm Life

Vol. XXII. *Denver, Colorado, July 1, 1920.* *Semi-Monthly*

MAKING MILK ON MID-SUMMER PASTURE.

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"Even slight jars bruise peaches—pneumatics protect them. My trucks on Goodyear Cord Tires help all my farming, which is largely motorized. These trucks go through the sandy loam of the fields to feed the machines and haul from them—solid-tired trucks cannot do this."
—W. W. Lowe, Farmer, Fruit Grower and Stock Raiser, Byron, Georgia

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With the Holstein Friesian Breeders at St. Paul

WHAT WAS SAID AND DONE AT THE CONVENTION AND BIG SALE

H. A. LINDGREN.

THE Holstein Friesian cow was the popular maid of honor in St. Paul, Minn., during the week of May 31 to June 5. Her prominence as the "foster mother of the human race" was the keynote of the big convention of the National Holstein Friesian Association meeting held at that time. Representatives from practically every state in the Union were present to attend the convention and big sale that followed.

The entire delegation were guests of the Minnesota Holstein Breeders' Association, who did themselves proud in the way the affair was handled. Every possible thing was done to make the stay enjoyable to all and it goes without saying that everyone went away with the feeling that Minnesota had accomplished her end in every respect.

Starting June 1, the Minnesota Holstein breeders held their annual meeting at the Auditorium in St. Paul. This was thrown open to breeders from other states, also. That the Minnesota Association is a live one goes without saying. They had their business session intermingled with music from three bands and a male quartette. Two of the bands were brought to the meeting, one a girls' band and the other a college band, to support the invitation extended by the city of Faribault in Rice county, Minnesota, to hold the next state annual meeting at their city. Their demonstration won the meeting for them.

At 3 o'clock in the afternoon the big parade was staged. Each of the sixteen states making consignment to the sale, had provided a float for the parade. The Colorado float consisted of a miniature portrayal of the snow-capped mountains and was labeled with the one word, "Colorado." Each float was followed by labeled cars carrying the state delegates. The parade was a long one, and proceded through the main business streets of St. Paul and thence to the division line between the twin cities, where the mayor of St. Paul turned the parade over to the mayor of Minneapolis. It then proceeded through the latter city to a park, where lunch was served. From here those who so desired were taken about the city or out to the farm near by. Many went to the J. B. Irwin farm, the home of Duchess Skylark Ormsby, the world's champion butter cow, and viewed some of the noted cows in the herd.

June 2 was the date of the National Association meeting. This was well attended. This association is the strongest breed association in the world and has 18,000 members. It may be of interest to Coloradoans to know that this state leads all the western states in membership in the National Association with 118 members. The association meeting conducted the regular annual business of that body, such as receiving the printed reports from the various officers and departments. The treasurer's report is an indication of the immense business carried on by the association. During the year just passed the cash receipts amounted to $550,947 and the cash disbursements totaled $404,602.79. The association treasury boasts of a cash balance at the end of the past fiscal year of $225,944.32. It takes money to carry on the work of this large body in promoting the interests of the breed and keeping up the herd book in such a manner that the records of registration are accurate. In this connection it was of interest to learn that Wing R. Smith of Syracuse, N. Y., has served the association in the capacity of treasurer for the past 24 years. He was re-elected.

Now Over 800,000 Registrations.

The report of the secretary, F. L. Houghton, brought out the fact that there are now 817,197 registrations on the books of the association, 114,503 of which were entered during the year of 1919-20. To carry on this immense volume of business it has required a force of 170 people.

The report of the Superintendent of Advanced Registry, Malcolm H. Gardner, shows the interest in A. R. O. work throughout the country. During the year just passed 77,547 animals have been admitted to advanced registry, 5,061 of which were bulls. The number of breeders making tests during the year was close to 3,000. Of the number of cows admitted 12,719 were on short time tests, 795 on the yearly test, and 237 on the ten months' test. These figures show the continued popularity of the short time testing.

The list of record breakers for the year included Pabst Korndyke Cornflower, who as a senior 3-year-old made 2,478 pounds of milk and 121.378 pounds of fat in thirty days. This cow was sold in the National sale for $30,000, and is considered by many the greatest prospect of the breed.

While nothing was said regarding the Cabana deal in the open meeting, the delegates strongly demonstrated their stand in the matter by replacing the retiring members of the board of directors, who had supported Mr. Cabana in the fraudulent record scandal by other breeders. Other members on the board whose terms had expired were re-elected. The next annual meeting of the National Association will be held in New York state, at some place to be chosen by the board of directors.

One of the enjoyable addresses of the convention was that by President D. D. Aitkin. He was re-elected, as were all of the other officers.

The meeting adjourned at 3 p. m., after which the entire delegation was taken to the farm of Senator J. M. Hackney. This farm is near St. Paul. Chartered tramway cars carried them to Como park, where they were met by autos and continued the journey to the farm.

At the Hackney Farm.

Senator Hackney's farm is known to all Holstein breeders as the home of King Segis Pontiac Count, and some of his wonderful 1,000 pound daughters. Upon arrival of the delegation at the farm, they were entertained first by a parade of the noted animals of this herd, several of them world's record cows in some form or other. The parade was headed by the noted Count whose daughters have broken 140 world's records, and some of his daughters, including Johanna Bess Segis, whose record is more than 1,000 pounds. Beauty Beets Walker Segis, who broke seven world's records as a 2-year-old, and Jewel Pontiac Segis, the most noted daughter of this great bull, who has broken 40 world's records.

The second division of the parade was headed by Piebe Laura Ollie Homestead King and his get. Among them was the Colorado bull Sir Johanna Bess Segis, who is owned jointly by the Loesch Brothers of Montrose, Colo., and Senator Hackney. All of these animals were a pleasure to look upon, especially when one considered that last year thirty of them averaged around 1,000 pounds of butter and 23,000 pounds of milk. The milk from these cows averaged over $100 per month per cow at present prices. That kind certainly pays. (It is said that the average production of the Minnesota cow is only 140 pounds of butter and 4,000 pounds of milk.) The high production of the cows on the Arden farms is the result of careful selection of sires. With the cow capable of profitable production, along with the good feed and care, dairying is the surest industry in agriculture today.

After the parade, the barns were thrown open and the animals and equipment were examined carefully. The equipment on this farm is up-to-date in every respect. The milk room, where the milk is bottled and prepared for the trade, is finished in white tile, and is spotlessly clean. The milk is sold as certified milk.

After the inspection of the buildings and herd, the crowd was conducted to the shore of Lake Josephine, where a barbecue was given by Senator Hackney. Eight Holstein steers were used for this occasion. The meat was roasted on the grounds and with it coffee, beans, buns and ice cream were served. The event was most enjoyable. Imagine, if you can, what it means to feed 2,000 hungry people in this fashion. Mrs. Hackney planned that part of it, however, and she deserves the credit for its success. Following the barbecue the evening entertainment consisting of music by the Minnesota State band and speaking was listened to. A short talk was given by former Governor Van Sant of Minnesota, which was greatly enjoyed by all. The main address of the evening was given by President D. D. Aitkin of the National Holstein Friesian Association. His address carried a great deal of sound logic along the line of better methods to employ in dairy farming.

Then Came the Sale.

The following day the great sale began. Probably never before has one had the opportunity of seeing a greater collection of Holsteins than was congregated at the Minnesota State Fair grounds. There were more than 250 head from sixteen states. Each state breeders' association desired to make a favorable showing and offered some of their very best animals. Many cows with records of more than 30 pounds in seven days or 1,000 pounds in a year were offered. The sale was under the management of the Minnesota Holstein Breeders' Association, who through their Secretary Bertrum Scott, and the sales committee consisting of W. S. Moscript, the noted Holstein judge; Alex Hanson, the man who developed Duchess Skylark Ormsby, and Dr. Egil Boeckmann, a prominent Minnesota breeder, had left nothing undone to make it effective in every way. The cattle were arrayed in the barns on the fair grounds so that they could be given the "once over" before they were brought into the ring. It is no small task to sell 84 animals a day for three days, of the quality of these animals. However, it was creditably done.

Comparison of Colorado Cows.

Colorado was represented by seven of the ten head allotted. The other three were withdrawn at the last minute for one cause or another. We were particularly interested in comparing the Colorado animals with those from other states. Let me say here, we had no cause to be ashamed of the comparison. We had the size and type that placed

(Turn to Page 15.)

Holstein Breeders Inspecting Quality Stock on Arden Farms, St. Paul, Minn.

In the Valley of Cactus, Cows and Cotton

BIG PROFIT IN FIBER CROP PUTS KINKS IN THE COW BUSINESS

EARLE G. REED.

IF you slip into Phoenix, the pride of the Salt River valley in Arizona, coming in from the south via Maricopa on a night in June, you will marvel at the wonderful clear atmosphere, the odor of alfalfa mixed with the greasewood desert odor that is always prevalent in this locality. All the windows in the coach are open and you take in the fresh breeze with much relief after undergoing the hot winds of the Arizona and New Mexico desert all day. But with the arrival of the train at Phoenix you suddenly realize that the refreshing breeze has ceased and you are in a really warm place, the valley of cactus, cows and cotton.

And why cactus, cows and cotton? Because the cactus was there first. Vast areas covered with the members of the prickly pear tribe, and they are still there in great numbers, both as ornaments for the lawns and gardens of the townspeople, and as a nuisance to the farmer and stockman. On the state capitol grounds there is a cactus garden containing all the many different varieties that are known in Arizona, and it is a most beautiful sight to see these plants in bloom. But in the Salt River valley thousands of acres of former cactus, mesquite and greasewood lands have given way to plowed and cultivated fields, orchard and hay lands now under the great Roosevelt dam irrigation project and several smaller projects.

Cows? This is said in a whisper and with downcast eyes by all who know the value of the dairy cow and what she has done for the Salt River empire. Two years ago there were approximately 65,000 head of producing dairy cows in the valley between Chandler and Hassayampa. Today they have to include some of their old white-faced range cows in order to count 20,000! There were several large thriving creameries, one condensery and many smaller creameries and ice cream factories. Of these most of the small plants are closed down, one large creamery has closed its doors, the milk condensing factory has ceased operations and a million-dollar factory lies idle. The few creameries and ice cream factories now existing are skating on thin crust and struggling for existence in many cases. Some of the creameries have been purchasing cows and hiring men to run the dairies that their plants may continue to operate. There is not enough milk and butter being produced in the valley at the present time to supply local demands. California, Utah and Colorado dairy products are no uncommon sight in Arizona.

And why this great depletion and reduction in dairy cows and milk production? Cows are in the discard now and cotton is king. Cotton, the long staple, sea island variety that is extensively used in the making of auto tire and aeroplane fabrics has taken the Salt River valley completely and entirely by storm. Not in the history of any known dairy section has such a transformation been brought about.

Two years or more ago, field after field of beautiful alfalfa could be seen over the entire valley and on almost every farm a large herd of dairy cows with the black and white of the Holsteins greatly predominating.

Today, field after field of cotton, row after row. The cows are not in sight except in a few scattered numbers, but countless Mexican peons and their families are daily in the cotton fields, hoeing, chopping, cultivating and irrigating.

And why has cotton driven the dairy cow from the Salt River valley? Because the farmers cannot fill a milk pail on a quarter of an acre of this land, and that is literally what would have to be done in order to compete with cotton. Land that previously sold for $150 to $200 an acre and was bringing liberal returns for hay and silage fed to good producing cows is now being sold for $600 to $800 an acre and many an embryonic cotton king will tell you his land is worth $1,000 per acre and not a cent less. He will look you straight in the eye when saying it too.

But, figure it for yourself, friend. This last cotton crop was purchased at an average of slightly over a dollar a pound. Some farmers sold as high as a dollar twenty. The average yield is near 300 pounds per acre. Some have not done as well and many have made more. The entire cost of producing this cotton, exclusive of interest on land investment, has been considerably less than $100 an acre. In order to compete with cotton, cows must fill the pail on a quarter of an acre of ground, and they must be handled by cheap Mexican peon labor, which is impossible, resulting in the cows being sold to sections where long staple cotton cannot be produced.

Dairy cows have made the Salt River valley the cotton country it is today. No one there denies that. Most everyone admits that cows will gradually come back and take their place in the valley, if the high yields of cotton are to be maintained. The fact that alfalfa and manure have played such a strong part in the cropping plans of the whole valley during the past ten or twelve years explains the high yields and good quality of the cotton. And the dairy stock and the alfalfa must come back into the rotation. Perhaps not in as great numbers, or so many acres as previous to cotton growing, but surely in sufficient force to insure a safe, permanent and profitable farming system.

So sure are the banks of the results which will follow a one crop cotton system of farming in the valley that the bankers' organization of Maricopa county have issued leaflets for the benefit of their customers pointing out the need of a sound system of crop rotation and the need of keeping livestock, particularly dairy cows, on every farm. The Agricultural College of Arizona, the U. S. Department of Agriculture and many others have sounded warning to the cotton-fevered farmers.

And are the farmers heeding these admonitions and warnings? No, not yet. Would you continue to lose money on hay and grain when cotton is making a fortune for your neighbor? When your land could be sold for four times what you paid for it, or you could step off and lease it for a cash rental of $80 per acre, or farming it yourself you make a gross income of $300 to $500 an acre, would you not smile on cotton and frown on cows?

As one well known and very successful dairyman in the valley put it: "I am going to get a share of this cotton money while the getting is good. I hate to sacrifice my dairy cows now because I love Holsteins, but if the cotton turns out good for a year or two more I am going to have enough money to buy back the best herd of purebred Holsteins in the country—and just as sure as I stand here I am going back to the cows, and so is every other farmer in this valley who wants to maintain a profitable cotton crop and farming business."

It hurts many of these good old dairymen to see the cows go out of the Salt River valley by the carload and hundreds of carloads, but they smile and say, "Better ones will come back before long." The Bradstreet, Sanders, and many other famous herds have been dispersed. There are not a great many good herds left for sale, but gradually those who hung tenaciously to their cows for sentimental or other reasons are reconciling themselves to sale and to cotton. So as cactus gave way to cultivation and irrigation, cows are giving way to cotton, reluctant in many cases, yet seemingly sure, with a certain feeling that some day the dairy cow will again be queen in the Salt River valley.

Alfalfa Web-Worm Appears in Northern Colorado

HEAVY IRRIGATION, FOLLOWED BY SPRAYING, IS ADVOCATED

CHARLES R. JONES, Entomologist, State Experiment Station.

NUMEROUS inquiries have recently been received at the Colorado Agricultural College, concerning the millers and worms that are so abundant throughout various parts of the state this year. A careful examination of a large number of these millers caught at Fort Collins, reveals the fact that practically all of them are what is known as the alfalfa or garden web-worm, and not the beet web-worm, as is generally supposed by the beet growers. The latter assumption is probably due to the fact that the beet web-worm appeared in rather large numbers in the beet growing areas in northern Colorado last year.

The farmers, however, should be on the lookout and be prepared to spray their beet fields and other crops promptly if the worms do appear. The alfalfa web-worm will feed upon beets and all succulent crops.

The miller of the beet web-worm may generally be distinguished from the garden or alfalfa web-worm by the markings or light spots on the front wings. The light line at the tip of the wing that runs from the front backward, is narrow, less than 1-16 of an inch, and nearly the same width throughout in the beet web-worm, while in the alfalfa web-worm it is usually broader at the hind margin of the wing and tapers towards the front margin.

In the beet web-worm there is a distinct rectangular light spot a short distance from the front margin of the wing and about midway between its base and apex, while in the alfalfa web-worm the front margin of the wing has three or four indistinct spots which blend more or less with the general ground color. In cases when the corresponding spot to that of the beet web-worm appears rectangular in the alfalfa web-worm, there is a dark line penetrating this area.

These two insects are closely allied. They belong to the same genus and their life histories are practically the same. They spend the winter in the larval or pupal stage in the ground, emerging as adult moths in April and May, and requiring in this state from six weeks to two months to complete a generation. The females deposit from 500 to 700 eggs each. These are laid in small clusters varying from 5 to 42 on the under side of the leaf of the food plant. All larvae except the last brood spin a flimsy web over the plants on which they feed. The natural food plant of both species is the common pig weed. However, they are more or less general feeders. The alfalfa web-worm has been known to feed upon corn, cabbage, spinach, onions, celery, tomatoes, potatoes, alfalfa, pig weed, and beets, in addition to some twenty or thirty succulent weeds. The beet web-worm is not such a general feeder, but is particularly injurious to beets.

The alfalfa web-worm moths average about ¾ of an inch in wing expanse, are buff colored with gradations of light and dark shades of gray. Old moths are of a dull gray color due to the absence of wing scales.

The worms are very variable in color, shading from greenish yellow to pale yellow, or even black; is somewhat striped, and has black lateral spots from which tufts of stiff black hairs arise; when full grown, the worms are about one inch in length. As soon as the little worms hatch they attach themselves to the food plant by a flimsy web. This web on small plants generally leads to some place of concealment, in some instances six inches from the base of the plant and under the ground. On large plants the web is generally attached, so as to draw the edges of the leaves together and within this web or webbed leaves the larvae feed until all the green tissue has been devoured, when they will web another area and proceed as before. Thus the worm grows and develops in a somewhat protected manner, feeding and webbing the plant leaves together until it finallly has the entire plant covered by a web.

The alfalfa web-worm, although it has never before occurred here in such large numbers, has been known in the United States since 1861 and in 1873 caused no little damage to various field crops throughout Kansas and the west central states. In 1900 it was noted as a serious pest to alfalfa along the Mississippi river and in Texas, and in 1903 and 1904 caused serious damage to the cotton crop of Texas and Oklahoma, recurring in 1909-1914 in those states on alfalfa. Since then it has occurred in several alfalfa growing states and has caused more or less damage.

Where insects are such general feeders, rotation and clean cultivation are essential in combatting them. However, they may be readily controlled by use of Paris green or arsenate of lead spray.

Control.

This pest often breeds in weedy, unkept places and later migrate to nearby cultivated fields where they may cause serious damage.

In young alfalfa fields, when irrigating water is available, the best method of combatting this pest is to apply the water in order to force the growth of the plant to exceed the injury done by the worms. This, of course, cannot be practiced in dry sections and when the worms appear in damaging numbers the alfalfa should be cut as quickly as possible.

The removal of the hay will cause large numbers of the worms to perish through lack of food and direct exposure to climatic conditions.

After the hay has been removed, the stubble should be thoroughly sprayed with arsenate of lead, four pounds, or Paris green at the rate of two pounds to fifty gallons of water.

Where the worms occur in corn or beet fields, they may be effectively controlled by the use of one of the above sprays, but the results will not be as rapid as upon other insects due to the habit of the worm webbing-in the area upon which it feeds. The web tends to a certain extent to keep the poison from the leaf tissue and one must not expect results until the worm again webs-in in a new poisoned area.

Renovating alfalfa fields is beneficial in controlling this pest as well as being beneficial to the alfalfa, if the fields are treated before cold weather sets in, as freezing and thawing causes the land to expand and contract, and such operations will destroy practically all the insects passing the winter there.

Sugar Beet Web-Worm.

The sugar beet web-worm appeared in the Rocky Ford district early in June and spraying was advised in the following statement by County Agent W. F. Droge:

"We had very good success last year where we sprayed and used a strong enough solution and got at them in time before they had done very much damage. Mr. Kaspar and myself directed the spraying of one fied with 8 pounds of white arsenic to 100 gallons of water and 5 pounds of lime. This amount to cover about two acres and we absolutely checked them and saved the beets. We got at them as soon as the worms were hatched and used a big power sprayer that puts the spray on in a fog. Unless a good fog spray is used it will do little good, as the poison rolls off in drops and it doesn't seem to be effective.

"If we are going to continue to grow beets in this valley we must prepare to fight these insects, as we are bound to have more or less trouble with them from now on. There should be sufficient power sprayers available and enough white arsenic or paris green to combat the pest when there is an outbreak, for they can do a lot of damage in just a few days. We have data on a field that a part was defoliated by worms last year and made seven tons per acre, while the part which was not defoliated made 17 tons per acre. Thus the worms destroyed at the rate of 10 tons per acre, which at $10 per ton means quite a little bunch of money."

Making Orchards Profitable in Niagara County

WHAT WESTERN SLOPE GROWERS MAY LEARN FROM NEW YORKERS

W. H. OLIN, Supervisor of Agriculture, D. & R. G. Railway.

Notice to Fruit Growers.

This is the first of a series of articles by Prof. W. H. Olin recounting details of his tour of inspection of the orchards of Niagara county, New York. The information contained in these articles is of unusual interest and value to all western fruit growers. It may be used as a basis for the formation of organizations for bettering the quality of the pack and consequently the marketing of our fruits. Through the courtesy of the Agricultural department of the Denver & Rio Grande Railway we are privileged to give advance publication of Prof. Olin's manuscript, which is to appear later in permanent bulletin form for general distribution. We are sure that our readers in the fruit districts of Colorado, Utah and Idaho will give careful consideration to these articles.—Editor.

FARM and Fireside published, in an October issue, 1919, a very interesting article about the fruit industry in Niagara county, New York, and its progress. This was written by the manager of the County Farm Bureau, Nelson R. Peet of Niagara county, New York. The writer opened up correspondence with Mr. Peet and found that he was working along different lines for a given result than is usually followed. We became convinced here was foundation work fruit growers in the intermountain region would be glad to know about. We therefore arranged with Mr. Peet for a trip through the orchard districts of his county the latter part of May, 1920. We herewith give a general resume of what we saw and learned while afield, studying Niagara county orchards and conversing with these orchard farmers.

In beginning this report let us comprehend the position western New York holds in the fruit business. Outside of California with its large citrus fruit industry, New York stands first in the list of states for its horticultural products. The average yearly value of this state's horticultural products is above, rather than below, twenty-five million dollars. Normal years, the volume of the New York apple crop alone, is over five million barrels. The most important fruit county in western New York, is the county of Niagara, approximately twenty by thirty miles in extent,

When the County Farm Bureau idea developed in the good old Empire state, Niagara county was one of the first to adopt the plan for the value it would be to orchard men and general farmers. Their first manager of the County Farm Bureau demonstrated that the average farm in this good farming county gave to its owner too small a return per year per net labor income. This was done by keeping farm records on more than fifty farms in co-operation with the Farm Management Department of New York State College of Agriculture for four successive years. The sum of the farm expenses is subtracted from the sum of the farm receipts. This should give what the farmer makes and is called his labor income. If expenses exceed receipts, like every other business man, he suffers a loss, has gone "into the red."

When Manager Peet came in charge of the work in this county in 1916, he finished up this tabulation and with the co-operation of the Farm Management Department of New York State College drew the final conclusions.

He most carefully studied these results and conferred with his executive committee. They agreed together that they must make the fruit industry more profitable. To do this, they must get a better price for their fruit. To get a better price they must produce a better grade and pack. To secure a better grade and pack, they must have the best cultural methods in their orchards and then, when the fruit is matured, have one universally uniform grade and pack. To secure this latter, it was found desirable to organize Central Packing House Associations in producing districts. We here want to review the work which has been done in this good peach and apple county in the years 1916 to 1920, inclusive. This is done with the purpose of inspiring fruit growers in the intermountain region and encouraging them to study methods Niagara county growers have found helpful, and trusting that intermountain fruit growers shall find certain things they can adopt that may prove profitable and work for the general good of the fruit industry in our middle west.

Olcott Growers' Co-Operative Association packing house at Burt, New York. Building made of hollow tile, 60 by 80 feet, with good cellar basement. Built in 1918 at a cost of $4,500. Well equipped with graders.

In conference with Mr. Peet, at his office in Lockport, the county seat, before we visited the orchards, we became impressed with the fact that this man thoroughly comprehends orchard conditions in western New York. He grew up on a fruit and nursery farm in western New York, was given special instruction along horticultural lines in Cornell University and determined, on arrival in Niagara county, to do nothing hasty, nothing rash, but to encourage this county's growers to work together and find some solution to their orchard problems. To make, if possible, these 30, 40 and 50 year old orchards more remunerative and profitable.

Inroads of Skookum Apples.

He saw with concern the inroads of the better quality Skookum apples of the Northwest, the growing demand, within their own trade territory for the West Virginia apple pack, and decided there must be some way to help western New York apples to hold the markets they should hold, right at the very door of the producing districts. If Washington, Oregon and Idaho could ship their well packed apples clear across the nation and sell them at a profit in Pittsburgh, Buffalo, Philadelphia, New York and even Lockport, his own county seat, why should not Niagara county meet these good quality apples in these nearby markets with equally good quality apples and hold these market calls at the very doors of this great apple district? Within 500 miles of Lockport are living more than one-third of the apple consumers of the entire nation. To capture the large market centers of this important region, the distributors of the Northwest are spending thousands of dollars in most attractive advertising, making the apple eating public acquainted with the Skookum brand. Apple dealers of Nova Scotia, the Virginias, Ohio and Michigan, are also bidding for this large and ever increasing trade. This all led our Farm Bureau Manager to plan very carefully a line of foundation work covering some years for himself and his apple, peach, pear and cherry growers within Niagara county.

Too long had western New York packed their fruit in their producing orchards, just as the buyers, to whom that fruit was sold, desired to have it packed. In this manner had grown up almost as many grades and packs as there had been individual buyers. The New York apple grading law did not standardize these grades as it was hoped that it would.

One Uniform Pack.

Mr. Peet became convinced that, to get anywhere in this commercial demand, there should be, in fact must be, one generally adopted plan and method of pack and grade. That instead of police regulations compelling compliance, there should be incentives inviting and encouraging growers for community gain in reputation and increasing trade demands to consider a unit brand based on a county-wide pack and grade. He realized that it is a physical impossibility for a number of farmers to pack, in their orchards on the home farm, one even quality grade of fruit. Therefore, some plan of central community pack must be devised.

Certain it was that these better packed and graded apples of the Northwest would soon have their own western New York markets, seriously discouraging western New York growers unless something was done and that "right now." Many so-called co-operative associations in the past had "gone on the rocks," but Mr. Peet felt it was because co-operative selling was made the ultimate and also the immediate purpose of the organization. In these associations, in the past, standardizing their grades had received scant attention and equality throughout had not been secured and therefore "repeat" orders had failed to arrive. Carlot buyers soon drove these associations out of existence to get what they felt their particular trade sought in barrel containers. This careful leader told his orchard farmers they did not have to make co-operative sales now. "We want to get the quality first of all that shall meet our competitors here now, and let the sales for the present take care of themselves."

To impress the value of this thought Mr. Powell of California Fruit Exchange was secured for a series of addresses showing how citrus growers worked out their co-operative plans. Mr. Powell gave some most helpful suggestions to these fruit growers and an ideal was set up. The three or four existing associations so changed their plans and methods as to conform to the central packing house outline worked out by Mr. Peet from Mr. Powell's suggestions.

The whole scheme of this development work the writer here places under definite heads for review and study.

Uniform Grades.

Manager Peet and his fruit growers in starting did not assume as one of their ideals, that they would in all and every instance put up a superior grade of fruit. They simply sought to do the very best they could. There had been for some time growers in Niagara county who had put up a very good pack. These fruit growers were sought to come into these packing associations to help foster, for their neighborhood, a uniform pack. When the association is formed, growers bring fruit to the packing house just as it comes from the trees. The association manager employs competent help to grade the fruit to the standard set by the association before the packing house season begins.

Use of Brand.

It has been demonstrated that it pays to use a trademark, brand or lithographed label in selling fruit. When such is used like Sunkist with oranges and Skookum with Northwest apples, the grower or association stand behind that brand, which protects its quality. This gives confidence to consumer and leads to repeat orders. The larger the quantity of fruit packed under one brand, the wider will be the territory where that brand will become known. Therefore the more general will be the premium which good fruit eventually comes to command. The packing house associations formed in Niagara county and in operation in 1918 used the adopted label "Cataract." This label pictures Niagara Falls in the center and is set off with a diamond shaped frame that has on the upper side the words "Western New York" and on the lower side "Quality Fruit." The general form of the label is oval with the words "Cataract Brand" at the top and at the bottom "Packed by," with the name of the association following. This brand can only be used for the better class of fruit and where said fruit is put up by the packing house associations under careful grade inspection. In 1918 seven associations using this brand packed out 100,000 barrels of apples. In 1919 there was a light crop of fruit: Apples, 35 per cent; peaches, 25 per cent; pears, 20 per cent; grapes, more than a normal crop, being 125 per cent. This season there were ten associations in the county; their total pack was as follows:

Apples, 43,450 barrels.
Peaches, 81,300 bushels.
Pears, 17,225 bushels.
Plums, 153 tons.
Grapes, 872 tons.
Quinces, 2 cars.

Quarter-Inch Sizing.

A most important fundamental which Manager Peet and his packing associations emphasize is the quarter inch sizing of apples and peaches. This means that no one package shall contain fruit that varies more than a quarter of an inch in size. Mr. Peet maintains that the reason western apples are so much in demand is because they are uniform in size. The number in a container is stamped upon it and being of one size the vender of fruit knows just what charge he can place on three to five apples to come out with the necessary profit. This facilitates distribution. Then too, sizing produces a most attractive package. The old style of barreling put big, medium and small all in one package. The little ones made the larger ones look coarse, the larger ones made the little ones look like culls and run outs. This is the greatest improvement the Central Packing House has brought to Niagara county growers. These associations use mechanical sizers to secure the desired results. At present Trescott's graders are used for apples and Burke's sizers with peaches. Each container is faced with exactly the same sized fruit as it is filled with. This gives "the same all the way through pack" that Manager Peet contends the final market—the consumer—wants and seeks.

Labor.

Labor is usually more available in a village or at the railroad station where

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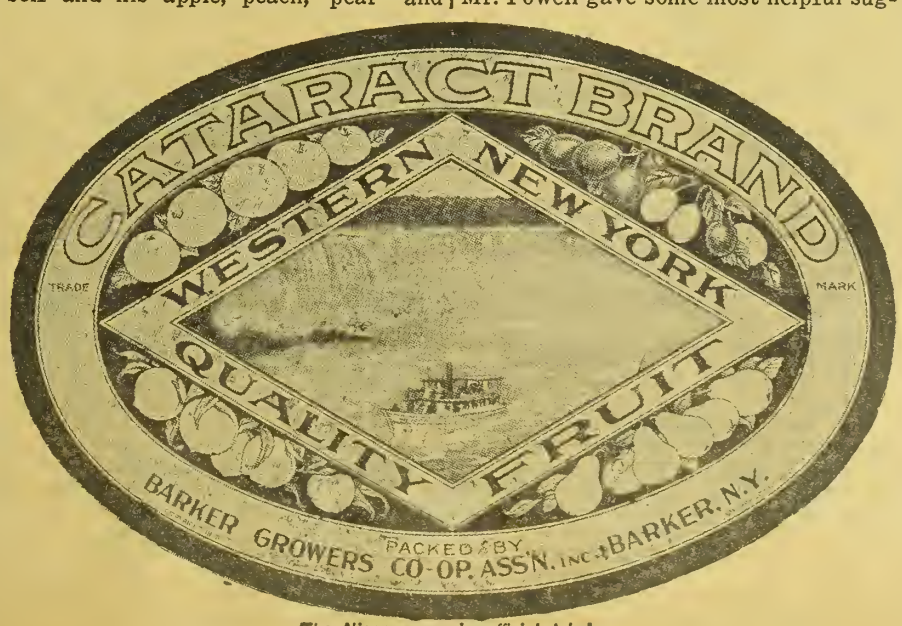

The Niagara county official label.

SEMI-ANNUAL

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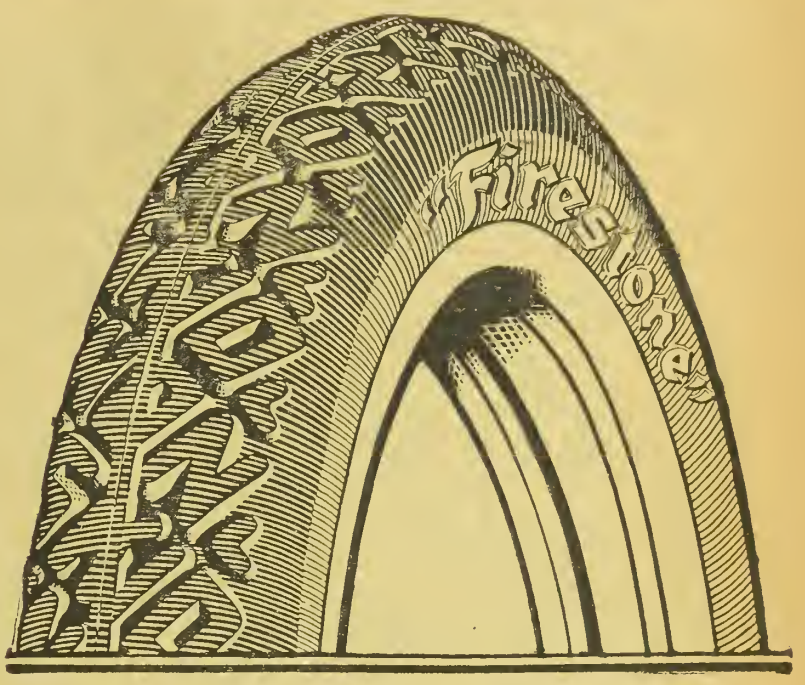

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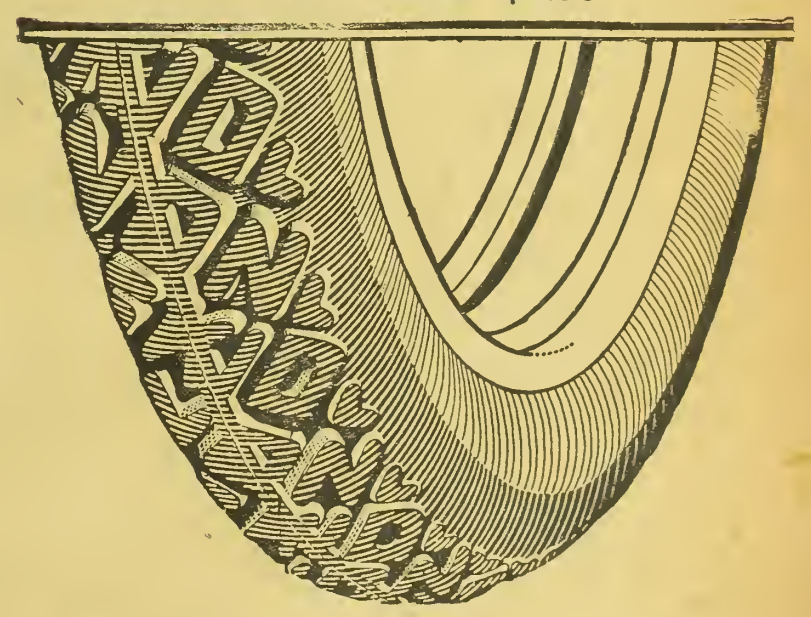

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How Congress Blunders.

The national and state Farm Bureaus, as well as individual farmers, should inform themselves regarding recent developments in Congress, which are of vital interest to agriculture. Just before adjournment of the session early in June, Congress cut the annual agricultural appropriation bill by six million dollars. That is, this sum was subtracted from the budget presented by the Department of Agriculture. It leaves appropriations more than two million dollars less than the sum set aside for the current year. This action was taken in spite of the fact that the purchasing power of the dollar has decreased and the same amount of money cannot be made to do as much work as formerly. This reduction was made "in the interest of economy."

No one has any complaint to make if Congress decides on a program of economy, providing the same is well directed. There is a natural doubt in the mind of the farmer, however, when his interest is the one to suffer, while other departments in which a saving could well be made, are barely touched. The Secretary of Agriculture, in presenting his budget, strongly recommended that the appropriation of $239,000 for congressional free seed distribution be eliminated and the money be diverted to necessary and important activities having a direct bearing on agricultural production. This item was first dropped by the senate, but the house refused to concur and when the bill finally passed, free seed was retained. This was no mere accident. It simply means that the present seed graft, which has been used by congressmen as petty bribery in attempted vote getting, is to be continued at public expense. These are strong words. It is necessary, however, to awaken the farmer to the fact that if he does not bring personal pressure to bear upon the congressman who represents his particular district his money will continue to be wasted at Washington.

Another act on the part of the expiring session which is directly political and illustrates the habit of Congress to play politics at the expense of the nation, is the new method of distribution of farmers' bulletins. Formerly all farmers' bulletins were distributed through the Department of Agriculture. By the act adopted at the last session four-fifths of all farmers' bulletins are allotted to congressmen and are not to be obtained except on personal application of the farmer to these congressmen. Words fail to express the feeling of the average farmer toward his representatives at Washington, whose vision of national problems is so restricted that they adopt the methods of ward heeler and peanut politician in handling matters pertaining to agricultural development.

It is difficult to select any particular individual, or any particular party or group of politicians at Washington and attach to them responsibility for these policies. They cover up their tracks successfully and the blame must lie against Congress as a whole. The remedy, however, is with the individual voter, who must exert his influence through the individual congressman and senator. If the Department of Agriculture is to be made a political football it is time for the taxpaying farmer to find it out. No other conclusion can be reached in considering recent events at Washington.

An analysis of the cut made in appropriations indicates that there were some unnecessary projects, which arose during the war, and which can well be eliminated. However, the deliberate curtailment of marketing activities and reduction of a service which saved the farmers, fruit growers and livestock producers thousands of dollars a year through having an unbiased market report, raises the suspicion that certain business interests had more influence than is apparent on the surface in having these appropriations cut down. Let us hope that the American Farm Bureau Federation will soon have at Washington such strength that Congress will be forced to give proper and businesslike attention to the demands of the farmers.

✦ ✦ ✦

Exclusion Is the Remedy.

Colorado and other western states must give serious consideration to the Japanese problem. It is a practical problem. There need be no controversy over it. Every white American familiar with Japanese ways realizes that there is only one way in which future difficulties can be avoided. Exclusion is the remedy. Exclusion effectually settled the Chinese problem in these western states thirty years ago, and it will settle the Japanese question. The problem needs to be tackled without gloves, subterfuge, fear or favor; without resort to the usual methods of diplomacy and delay.

Interesting news comes from two places in the state of Washington where public schools appear to have a considerable enrollment of Japanese children in their early youth. These children, on reaching the ages of 12 to 14 years, are sent back to Japan to complete their education, with a view to returning to America later, full fledged Orientals, Japanese in thought, carefully schooled in the idea that the western coast of North America is legitimate territory for the "peaceful penetration" of their race.

In the truck and melon growing districts of the Arkansas valley in Colorado indignation meetings have been held in recent months, to protest against the rental and sale of lands to Japanese settlers. In the Platte valley north of Denver there has been a great influx of Japanese. Most significant in that section is a report published in a Brighton paper some time ago, of the arrival of a carload of merchandise imported from Japan, and consigned to a Japanese merchant, for sale among the Japanese settlers of the Brighton district. This illustrates Japanese methods; trade follows the tide of immigration.

Colorado bean growers have reason to feel the effects of the open door of the Pacific in regard to Japanese beans. California is acutely aware of it. The ships that bring Japanese colonists carry Japanese grown beans at the low rate of ballast. These beans go onto our markets in competition with beans produced under high labor and machinery costs on Colorado farms.

The Colorado State Grange raised its voice in protest of Japanese influx some months ago, urging legislative action. One state can do nothing alone on this problem. Colorado, California, Utah, Idaho, Washington, Oregon and other states affected must act unitedly and with the aid of the federal government. Japan is aware of the feeling in the west and its emissaries are busy at Washington. Our government needs to wake up to the danger of a new race question, that has more serious aspects than the negro question ever will have. Every passing month will make it more difficult of solution. Sentiment cuts no figure in dealing with it. It is a practical question to which there is only one answer—exclusion of a race that cannot be assimilated.

His wife goes by at forty miles
In his new car—but mine just smiles;
Our house has pipes and everything—
His wife totes water from the spring.
—Plowshares.

In the Wyoming hills where the sheepherder guards his flocks, the monotonous contour of the country demands more than mere trekking instinct. There are few natural landmarks. One rock ridge is the exact counterpart of the next, and the next, and the next, and so on, interminably. Therefore the sheepherder builds him monuments of loose stones that stand silent sentinels of the solitude, to point the way to pastures new, or back to the home ranch. Prof. Parsons, author of these verses, has caught the spirit of the sheep country.—Editor.

A Sheep Herder's Monument.

(Written for Western Farm Life.)

Silent pile upon the hilltop,
With the vastness all around;
Landmark of the lonesome shepherd,
Set mid silence most profound.

Guide for man and flock returning
O'er the hills near daylight's end.
Man who has no other helper,
Than his faithful canine friend.

Monument of patient labor,
Builded slowly stone on stone;
Built to while away the hours,
Hours he spent there all alone.

Who can tell what thoughts came o'er him,
As he worked there all alone.
Some past tie he may have severed,
With the placing of each stone.

Each stone may be a hope departed,
Or plan, that now lies buried deep,
While memories crowd in upon him,
In close array like flocks of sheep.

This pile of rocks may not be classic,
It may not be a work of art;
But it may be the sign of longing,
In some poor shepherd's aching heart.
—T. S. Parsons, Laramie, Wyo.

Food Dangers Ahead.

In Washington some people have been suggesting that, in order to reduce the cost of foodstuffs, an embargo be placed on exportation of grain and meats. Do these people not realize that the moment the price of farm products is driven down below the cost of production the farmer will steadily decrease his cultivated acreage and hasten the day when a food famine, greater than the public has any conception of, will be upon us?

It is absolutely certain that this year's food products will be very short. The winter wheat crop is 33 per cent short of last year's yield, and the rye crop shows, by present indications, about the same decline. Other crops will be short, for the labor is not available for the cultivation of as much land as was formerly given to food products.

We have ignored the farmer's needs. We have yielded to the demands of industrial workers for an eight-hour day and given them steadily advancing wages, and we have told the farm laborer that by quittting his job and coming to the city he can cut his hours of labor almost in half and at least double the amount of wages received.

Does anybody suppose that the farm laborer under these circumstances is going to stay on the farm?

Can anyone imagine that the farmer boy will continue to work with drudgery of farm life from daybreak to dark when, by leaving the farm, he can get twice as much pay for half the hours of work, and then have all the allurements of city life, which appeal so mightily to the young?

And then, when one talks about an embargo on shipments of foodstuffs, does he realize that the farmer will have something to say on that subject and will demand his rights so that no embargo shall be placed on his product unless an embargo also be placed on cotton and iron and steel and lumber and everything that we are now exporting? What is sauce for the goose will be equally as good sauce for the gander.

He who talks about an embargo on the shipment of farm products in order to reduce the cost of foodstuffs for the American people is only arguing in favor of a famine of food which would stagger the nation. Let us face the facts squarely and honestly.

For many years, due to the trend of the population from the farm to the city, there has been in evidence a decline in the per capita production of food, and the end is not yet in sight. We are facing a very dangerous food situation, and the best brains of the nation should be concentrated upon the development of agriculture that it may be made as prosperous as merchandising and manufacturing in the city, so that the farm laborer may get as high wages as the city laborer, relative to the cost of living, or otherwise we soon will reach a point when we shall have to search the world for food to add to our own scanty production. And yet we have a soil which in extent and fertility ought to be able to feed five times our present population, but it will not feed our existing population unless the country soon comes to a realization of the whole situation and ceases to fight a profitable price for the farmer, and, on the contrary, does all in its power to make farming profitable, to lessen the burden of farm life, to add to the comforts of the farm, and in that way help to turn the tide back from the city to the country. In that is our only safety.—The Manufacturers' Record.

The Branding Iron

Uncle Ben Eldredge, the Utah dairy philosopher, is responsible for this one: "The best dog for the dairy farm is a dead one, and his usefulness there is measured by his condition for fertilizer."

* * *

Up in Idaho they have discovered that one poisoned cricket, after giving up the ghost, is eaten by another cricket, who thereby commits suicide. Thus one dose finishes two insects. Quite a scheme for economy; give the first one a double dose and make it a four to one shot.

* * *

In Germany the price of print paper is sixteen times what it was before the war—and we can think of sixteen other reasons why we ought to be glad we're not in Germany.

* * *

A ranchman advertised in a Wyoming paper "Fresh Jersey bull for sale." A neighbor called up to inquire "why the fresh?" Said the ranchman: "He's too fresh."

* * *

"Too many I. O. U.'s and C. O. D.'s are the things that turn respectable men into I. W. W.'s."—Penny Ante, in Weld County News.

'Smatter Ed, are you fixing to vote for Debs?

* * *

Forty-four years ago a Colonel Craig testified that he got $60,000 worth of corn in one crop from land on one of the old Spanish grants in southern Colorado. And some of us think corn growing is new in Colorado! The Cliff Dwellers of the Mesa Verde left no written records, but the corn cobs found in the ruins a thousand years old tell their own story.

* * *

Governor Gardner of Missouri has just finished an extended automobile trip down in the Ozark country. Most of the trip was made over strange roads, and signposts were depended upon to show the way. One afternoon the governor began to doubt if he were on the right road. A careful watch was kept for some sort of sign, and great relief was felt when one was observed a hundred yards ahead. The governor drew up and stopped, and this is what he read: "Stranger, when you get here, by gosh, you're lost!"

* * *

If you have no adjective but "awful" to apply to a dinner, a mountain, a hat, an accident, the new styles, the European war, your wires are down. You cannot express thoughts on all these subjects to your fellow humans by use of the one word "awful." If it is your only adjective, keep quiet; your silence may indicate an appreciation which your one adjective fails to express.—Ruth Jocelyn Wattles in C. A. C. News Notes.

The fellow who advertised "a rattling good auto" for sale offered to give to boot a trained squirrel to run behind the car and pick up the falling nuts.

Comment by Farmer Putnam

GOES FISHING AND LETS DRY BONE DAN DO THE WORK IN EXCHANGE FOR JUG OF BAIT

THE warm weather comin' on makes me kind-a lazy; that is, lazier than usual. I hate to let anybody do my writin' fur me, but I'd a heap ruther go a-fishin' then work, so I'm goin' to turn this here page over to my old friend Dry Bone Dan of Arid Acres, Wyoming, jest fur onct. Dan has got a crow to pick with his namesake Dan Meetz of Egbert. This here Mr. Meetz is a ranchman that wrote about Rooshun thistles and county agents in one of our magazines and it made Dry Bone Dan kind-a sore, so he comes to me with a proposition the details of which is not fur the public to know. Anyhow he gits the page this time as per contrack and I go fishin' up on the Laramie river, with full line of tackle, flies and a jug of bait. Rattlesnakes is bad up in the Medicine Bow and I may have to telephone back fur another jug of bait, but Dry Bone Dan is a expert bait maker and Arid Acres ain't the ranch you think it might be from readin' the name. —T. J. P.

Arid Acres, Wyoming, June 7, 1920.
Deere Mr. Edyter:

Well here I am at last. All these years I have been thinkin' about writin' fur a livin' but this is the fust time I ever wrote fer "Life." Somebody up in our secshun allowed to me as how Western Farm Life wuz a good paper so I jest been takin' it now about six months and you kind believe it or not, but I'm puffectly satisfied with your publicashun. As usual I see sunthin' every once in a while that don't jest suit my taste, but that is as it should be, 'cauz if we all agreed and knew what you was goin' to write each time, your pen wouldn't be no more use then a German sword at the peace conference.

Now, I sorta enjoy this Rooshun thistle argument (I know that ain't the way to spell Rooshun, but I'll bet every feller in the west knows what I mean) and I've noted what Perryman from Colorado and Corkill from Kansas and Meetz from Wyoming has to say as well as others too numerous to mention I don't want to say so much about thistles as I do about Meetz. I know Dan Meetz of Egbert, Wyoming, and I tell you he is a good farmer too. Like all the meats at present he is way up high, six feet and more, but he doesn't git down to earth with his thinker when he puts Rooshun thistles and county agents in the same class. Mr. Meetz has some good advice about controllin' thistles by plantin' fall rye. I have tried that too, and it works fine in the plowed fields, but how about the roads, railroad lands, vacant pasture lands, ditch banks and the thousand other places where seed is produced every year to reseed the lands when we git the thistles practically cleaned out?

Rooshun thistles is a pest we will have to combat but county agents is things we ought to cultivate and encourage. Meetz, nor any other farmer can't harvest any crop unless he plants some seed and it has got to be seed of the kind he expects to harvest. In other words he has got to put somethin' in before he gits anythin' out. The same thing applies to county agents and farm burros. The trouble is we've been gittin' county agents and farm burro assistance too darn cheap. We ought to be puttin' more into it. We ought to be payin' $5.00 or $10.00 a year farm burro membership fees, we ought to limit the benefits of the farm burro and county agent work to members only, and then we ought to limit the membership to progressive farmers and ranchers only, no matter how p or, how rich, how much they own or how little. We ought to git the best county agent available, pay a man's sized salary fur a man's size county agent.

And don't expect that county agent to come around to your door lookin' you up. If he is a real county agent he has so many people lookin' after him and requestin' his services that he won't find time to be lookin' around the country fur the stay-at-homes. If you play a ball game you get out and play with one team or t'other; if you want to elect a president you vote with one party or t'other. You cain't play or vote by yourself and do any good. If you want the services of the county agent you will have to seek it and you'll get it. If you want the benefits of county agent work and farm burro organizashun git in the game with the rest, you're only hurting yourself by stayin' out.

Now, of course, I allow that all county agents should not be county agents. Some of 'em should have been showfurs and some should have been waiters, but most of 'em is fust class men after you git to know them. You'll never know them by stayin' away from farm burro meetin's and waitin' fur 'em to make a soshul call. Most of our county agents is farm razed boys. Some of 'em was born on a plow, razed in a milk pail and trained in a regular agriculchural college. Some peepul should never have been farmers either; they should have been hermits or South Sea Islanders or speshulists in non-social relations fur community conflict

As fur county agents hangin' around court houses, town halls and other places of public rest, it is natcherly true that a man has to stick around considerable wherever he has his offis headquarters, espechually on his "at hum" days, because some farmer may want to come in and inquire about plantin' corn, buyin' seed, or gittin' some pizen oats fur prayrie dogs, and if Mr. County Agent ain't in the offis at the particular time, Mr. Farmer goes home and cusses the county agent fur always bein' out in the country. Of course, some agents maybe stick around town too much and some stick around the gals too much. Both is human habits which lots of farmers seems to acquire also.

But to git back to real facks. We have so many cases of the great value county agents have been to their secshuns that the work they have done will stand as cumulative (Colimy told me that word meant ever-increasing) monuments to their industry, enterprise and unselfish service, and in each of them counties you will find good successful farmers havin' a community betterment spirit, who went out and met the county agent half way or a little more. They learned a lot from the agent and the agent learned a lot from them. They made the county agent a success in their counties and thus a big help to others. Get out and meet your nabor, my friend, you might like him. You might like the county agent if you put skids on your prejudis and be human also. You might learn somethin' from him and he might git a idea from you that would benefit a nabor.

But this won't radikate any thistles, so I'll jest quit here and let others settle that question. With best pussonal regards to my friends, Mr. Meetz and to Thos. J. Putnam, I am,

Yours fur the fust time,
DRY BONE DAN.

Another Web-Worm Warning.

Fort Collins, Colo., June 20, 1920.—The first brood of the web-worms attacking alfalfa, sugar beets and other plants is probably a little past its greatest numbers now. Moths are beginning to appear for a second brood which probably will not attract attention in the fields for about one month yet, and it is hoped that the second brood will not be numerous enough to do serious damage.

The beet web-worm which is a very similar insect, has not yet made its appearance in the beet fields, but the moths have been coming to our lantern trap in large numbers during the past ten days, or from June 5 to 15. This means that the beet web-worm, which did so much damage in some of the fields last year, is likely to be present again to do more or less serious damage to sugar beets during the present summer.

On the night of June 13 over 1,400 of the beet web-worm moths were taken in a single trap on the college grounds. This would seem to indicate rather strongly that the worms will be in the beet fields in the Fort Collins district in considerable numbers by the first week in July, possibly a little earlier.

Beet growers should take warning and be on the watch for the appearance of these worms and also be prepared to spray thoroughly with Paris green or some other arsenical poison in order not to lose their beet crops.

We shall know within the next week or two whether or not the alfalfa web-worm is also to appear again in large numbers during the latter part of July. —C. P. Gillette, Colorado Agricultural College.

The true army worm should not be confused with the "overflow worm," the "fall army worm," or the "grass worm," say the Federal entomologists. The genuine article is a nearly naked, smooth, striped caterpillar about 1½ inches long. His greenish body is marked with three dark stripes which run, one down each side and one down the back, for the length of the body. The head is greenish brown, speckled with black.

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Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and through the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Question of Water Right.

A. filed on homestead entry in 1914 and additional entry in 1917. He made final proof on all of it in 1919 and has his certificate but not the patent Near his east line of additional entry there is a spring, the only one on his land. The spring disappears in the sand before crossing his line and is not available for irrigation of his land. He can however, use it for stock water. In 1917 B. filed on land adjoining A on the east. B. wants to pipe the water from this spring to irrigate his own land which would use all of the water. Can B. file water right on this spring over A.'s patent and appropriate all of the water for irrigation? —W. S. S., Custer county, Colo.

I am of the opinion that B. has no right to take the water from A.'s land under the circumstances stated without A.'s consent. The fact that no patent for the land has as yet been issued has no bearing upon the matter.—H. Lincoln Fellows, Senior Irrigation Engineer, U. S. D. A., Denver, Colo.

Prevention of Mold.

Can you give us a preparation that may be safely used in brine on pickles to keep the brine from becoming moldy? This is for use when container is kept open.—C. E. N., Gunnison county, Colo.

I know of nothing you could add to a pickle brine which would be effective in keeping micro-organisms from growing on the surface. The scum which forms on brine is made up largely of wild yeasts of the Mycoderma type, but often contains molds and various forms of bacteria and should be kept off by skimming. The formation of a scum can, of course, be prevented by excluding air. This can be well done by covering the surface with a layer of paraffin. This material poured over the surface while hot effectually seals the brine and prevents the formation of a scum. When pickles are fermented in a weak brine, as in the case of dill pickles, this is necessary to prevent spoilage.—Edwin Le Fevre, Scientific Assistant in Food Bacteriology, U. S. D. A., Washington, D. C.

Wire Worms Do Little Harm.

I am enclosing a sample of worms that are taking my garden. They work under ground on the seeds as they begin to swell and sprout. First noticed them on my peas, then they began on my beans, now they are killing my seed onions. What are they, and how shall I get rid of them?—R L. F., Idaho.

We are advised by the Entomology Department of the Colorado Agricultural College that the worms you sent are known as wire worms. It is not likely that this insect is doing the damage. The damage you describe is more like that done by cut worms The wire worms feed to a certain extent upon the roots of plants and grasses, but are never known to cut the plants entirely off. These worms are found in all grass lands and they live over two or three years after the lands are cultivated. There is no effective remedy known that will reach this particular insect. As the damage in your garden is probably due to cut worms the remedy recommended is poisoned bran mash, a formula for which we are sending you. This should be scattered over the ground in the evening, as these worms do their damage mostly at night.

Breeder's Guaranty.

On October 27, 1919, I bought a 2-year-old registered Holstein cow at an auction sale that had been fresh since October 2, 1919, and she came in the day of the sale and was bred but did not catch, and I have bred her six or seven times since, had a veterinary on four of the times, but she will not get with calf. Could I hold the seller liable to make good? The cows were all guaranteed to be all right and tuberculin tested as it was announced at the sale. I also bought a 2-year-old heifer at private sale that was supposed to be bred but she has been in five or six times since I have had her and also had a veterinary for her, on three of the days she was bred, and I can't seem to get her with calf either. Should the sellers make good to me?—F. R. C., Boulder county, Colo.

Many men who only occasionally purchase a breeding animal do not know just what sort of a guarantee they may reasonably expect with the animal. Where the purchaser and seller are fair-minded there will not be much difficulty, but occasionally there is a breeder who is unscrupulous in filling a mail order, and also there are occasional buyers who are wholly unreasonable in their demands upon a breeder. The understood guarantee which goes with every animal from a reputable breeder's herd is that the animal shall be bodily sound so far as evidence to the eye is concerned, and is free from tuberculosis or other communicable disease when so stated in connection with the sale; for when a breeder advertises that his herd is tuberculin tested and free from abortion, the guarantee applies to every animal sold from the herd. Even when a herd or an animal is not so advertised, a breeder with sound standing in the trade will make good on these two diseases. If the animal is of breeding age, the implied guarantee goes with it, whether stated or not, that the animal is a breeder. Evidence of this fact commonly accepted by stockmen is that the animal shall have produced progeny immediately prior to the sale, or shall produce progeny shortly after the sale. Purchasers of animals finding that they do not come up to these requirements may reasonably request adjustment of their claim by the seller. No matter how honest or careful a breeder my be he cannot, in doing a large business, avoid occasionally disappointing a purchaser in some one of these respects. He can practically always avoid shipping a diseased animal, but in selling an untried young male of breeding age, he cannot know positively that the animal is a breeder and must accept the small percentage that fails. The usual method of adjustment is to have the non-breeder sold to the butcher and the difference between the sale price and the original purchase price of the animal is returned to the purchaser, or applied on another animal if so requested. When the animal in question is a female of breeding age sold as unbred, the adjustment is the same. When sold bred and it is found later that she is not with young, the usual adjustment is for the breeder to return the purchase price of the animal; the animal to be shipped back, breeder paying expenses both ways; or, if preferred by the purchaser, the breeder refunds one-fifth of the purchase price. Where the animal goes wrong in the hands of the purchaser, although a perfectly healthy animal and a proved breeder while in the hands of the men who bred him, the breeder is in no way liable, because he can guarantee nothing as to the care or health of his animals in the hands of a new man.—Geo. E. Morton, Colorado Agricultural College.

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Canadian Government Agent

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Cutting a Colt's Gums.

Is there any advantage in cutting the gums of a young colt to let its teeth through so it will suck? I have been told a young colt would not suck if its teeth were not through.—J. D., La Plata county, Colo.

A horse has two sets of teeth. We humans may have three sets, including store teeth. The teeth of the horse are temporary (milk teeth) and permanent. All of the front teeth (incisors) and the three front molars, above and below, on each jaw, are temporary. There are six incisors on each jaw; two central (nippers), two laterals and two corners. The centrals have usually erupted before birth, the laterals appear within six weeks, and the corners come at about ten months. These are replaced by permanent teeth as follows: Nippers at 2½ years, laterals at 3½ years, and corners at 4½ years. In the meantime the temporary molars have been replaced and the three back permanent molars have appeared. The horse has a full mouth when he is five years old.

The notion that a colt will not suckle until the nippers have appeared is a mistake. It is a superstition and along with the "mad-stone," rabbit's foot and signs of the zodiac, should be relegated to everlasting obscurity.—G. H. G.

Case of Caked Udder.

I have a valuable Jersey cow with one quarter of her bag swollen almost solid. Does not seem to be painful and has been this way for some weeks. I am milking her. She will be fresh in September. The flow of milk has decreased very little.—W. A. C., Las Animas, Colo.

This is a case of mammitis (caked udder) and every effort should be made to restore the udder to normal condition before she again becomes fresh. The milk should be drawn frequently and the udder gently but firmly massaged. If badly congested the gravid udder may be relieved by supporting it in a sheet, bringing it up snug by twisting at top and making holes for the teats. This will also be convenient for applying hot poultices. Hot water applied to the udder for twenty minutes at a time is useful. Apply an ointment made by dissolving two tablespoonfuls of gum camphor in a teacupful of melted fresh lard. Sometimes mammitis is infectious and spreads through the herd. The milk from the infected quarter is not wholesome and where the udder is badly diseased the milk should all be discarded.—G. H. G.

Tumorous Growth on Udder.

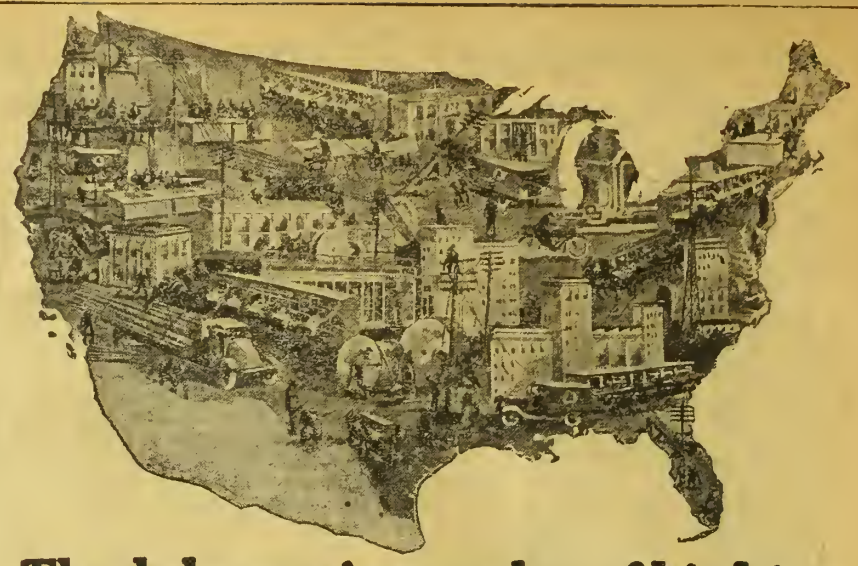
My 5-year-old cow's udder has a tumorous growth the size of a man's fist. She is one month past calving her second calf and is seemingly in good condition otherwise. The lump is hard and unyielding and seems to cause no pain when squeezed. It was first noticed when she came fresh and it was then taken for a caked bag.—J. M. D., Wyoming.

The fact of the tumor not being sensitive, and the cow otherwise being apparently healthy, indicates that the tumor is of a fibrous nature and without suppuration. It may be tuberculosis or actinomycosis of the udder, but most likely is an inflamed area resulting from mammitis and will, after a time, become normal. Try massaging with mild liniments. After a few days change to hot poultices. Antiphlogistin will be effective and is easy of application. If the tumor persists the test for tuberculosis is to be considered, and in case it proves to be actinomycosis (ray fungus of lumpy jaw) the potassium iodide treatment would probably be effective. —G. H. G.

Regulations Concerning Scab.

Answer to W. P L. Lincoln county, Colo.:

The order of the board requires that cattle from Lincoln county and several other counties must present evidence of having been dipped during the summer of 1920 before shipment will be permitted, but in cases where animals are run in pasture in these counties and the owner wishes to avoid the trouble and expense of dipping, the board has agreed that if such owners pay the salary and expense of an inspector to inspect their cattle that such inspection will be made, and if such cattle are found free from disease, shipment will be permitted without dipping.—Chas. G. Lamb, State Veterinarian.



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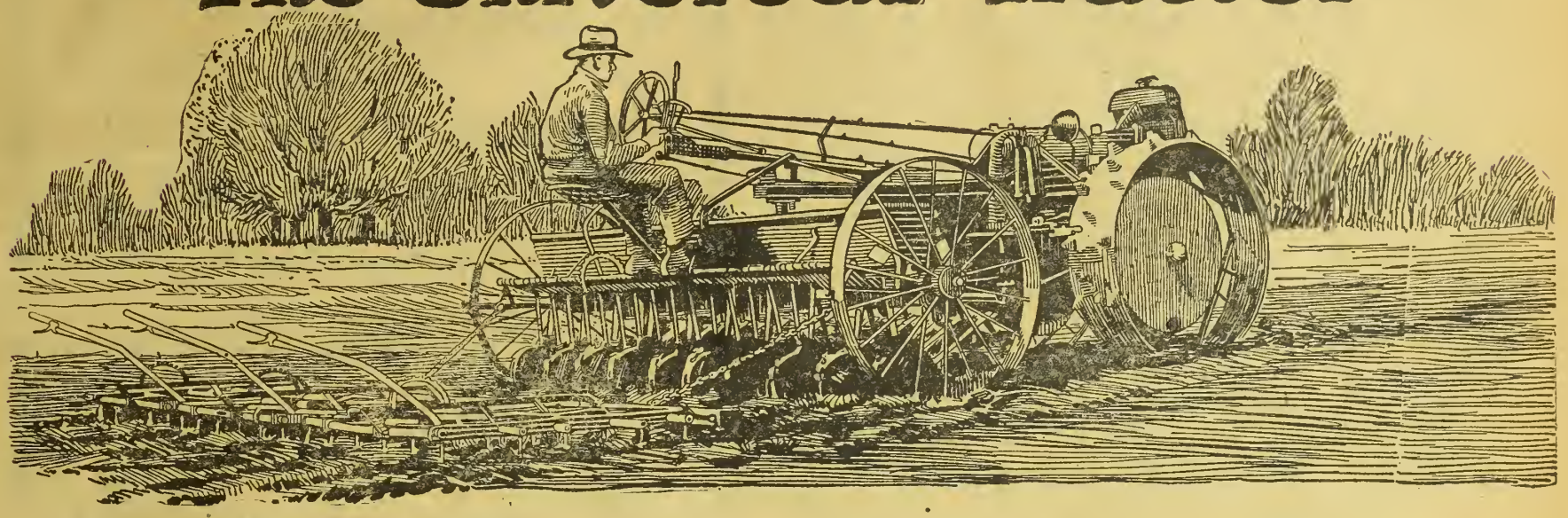

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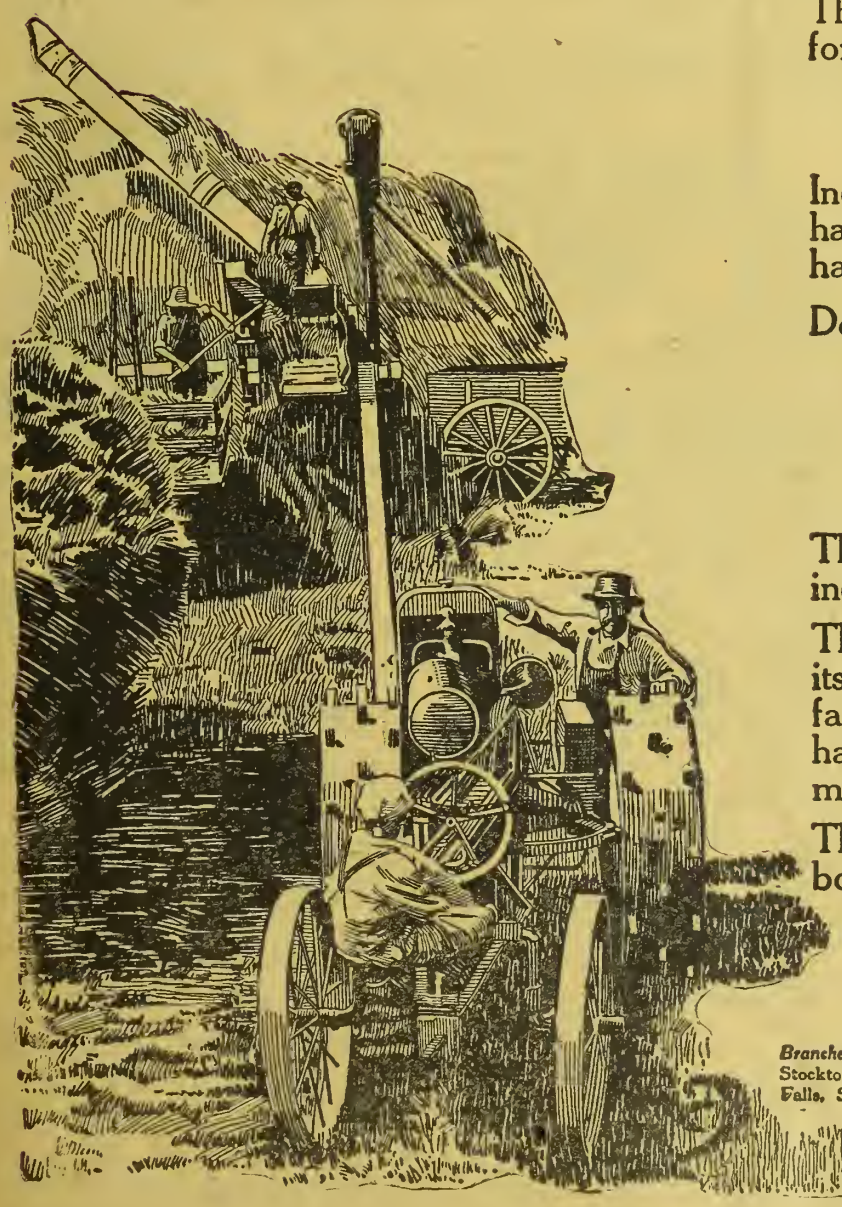

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Colorado State Farm Bureau News

Matter appearing in this department relates to the activities of the State and National Farm Bureaus, including official communications from the Colorado State organization and general reports, calculated to keep farmers informed regarding progress of this great educational movement.

In another article on this page appears a brief report on the last meeting of the executive committee of the American Farm Bureau Federation, which was attended by Mr. W. G. Jamison, state president, who is a member of the committee. Only a few words are given on the big questions under discussion—questions that affect every farmer; that hit him in the pocketbook, where most of us are quite sensitive.

For many years the farmer has demanded a hearing; he has wanted a forum where his leaders could appear and plead his case before the public, before the national law making bodies and the nation's executive and judicial departments. Nothing has happened in the line of organization in a century that holds so much of promise for the good of agriculture as does the American Farm Bureau Federation. This promise is based on accomplishments of the recent past. Much has been done since last November to indicate that the farm bureau plan is the direct channel through which farm opinion may influence public thought. And bear this in mind, public sentiment and opinion must be influenced before any great reforms are accomplished.

Special organizations we have, by the score, and each serves its particular field, but there has never been in the history of American agriculture, a grouping of farmers along such broad, constructive and aggressive lines as that embodied in the program of the American Farm Bureau Federation, which starts with the individual farmer on his farm, and goes on upward through the local community group or project, to the county, thence to the state, and thence to the national organization.

Whatever has been done in the past for the benefit of agriculture has been done by the farmer in improving his own condition. There has been no change in the scheme of things and the future holds for agriculture just what agriculture marks out for itself, by consistent effort. The success of such efforts rests upon the principle of public good and not upon class selfishness. Any definition of "public," applied to the people as a whole, must include the farmer. Success of the farmer depends upon natural conditions, plus knowledge of agricultural science; plus a fair market. No individual farmer may hope to materially influence these factors by acting alone.

Organization along economic lines, with the object of putting farming on a business basis, is the solution of the problem. That is the object of the American Farm Bureau Federation, which is approaching the million mark in membership. Its influence is being exerted on the transportation problem, the packer controversy, rural credits, federal road legislation, taxation, and a dozen other matters of concern to farmers. In a previous article the value of the local farm bureau was pointed out. Farmers who hold membership in the bureau can readily see local benefits. But they need to be reminded of the larger questions that need attention in a statewide or national way. A moment's reflection should convince anyone of the fact that if the farmer is benefited by group activity that results in better methods, larger yields, fairer markets to himself in his own county, the same power of organization, exerted nationally by these combined groups, must be worth the five dollar annual fee—or whatever the figure may be—that is needed to carry on the work from township to nation.

The business man pays $25, or $50 or $100 to the upkeep of the organization that acts for him in matters affecting his business, and it pays. So the farmer will find that any effective organization will earn all and more than it costs. The American Farm Bureau Federation is doing things in the big American way, and getting results.

Executive Committee Meets.

The executive committee of the American Farm Bureau Federation will hold its next meeting in Denver, the dates being August 16, 17 and 18. This action results from an invitation extended to the committee by Mr. W. G. Jamison of La Veta, president of the Colorado State Farm Bureau, who is a member of the executive committee and attended the recent meeting in Chicago. Mr. Jamison brings back many interesting suggestions and announcements concerning the work of the federation.

One of the big questions before the federation at the present time is that relating to the railroads. The railroads want an increase in freight rates and they want the government to back them up financially in a program for building equipment and extending their lines. They need the good will of the farmers. Naturally the farmers are interested in better transportation facilities, but they are not prepared offhand to O. K. the demands of the railroads. Just what action the federation will finally take regarding the proposed increase in rates is not known, but before anything is done more information will have to be forthcoming regarding the actual needs and present condition of the roads. To that end the executive committee decided on an immediate census of freight cars. The railroads claim to be short of equipment, but it is asserted in some quarters, that poor distribution of cars is partly responsible for present conditions. The federation will find out what the true situation is.

The executive committee approved the suggestion of Clifford Thorne, attorney for the stockmen and other shippers' associations, who are seeking to procure a fair distribution of the transportation burden, that a part of it be borne by the passenger service. In a statement issued by the attorneys for the livestock interests it is pointed out that "non-producers travel. The pleasures of transportation, the luxury of the Pullman, are enjoyed largely by the city dwellers. Probably 20 per cent of the people are in the cities and towns; and passenger tickets are far more numerous than freight bills. So that an increase of passenger fares to help meet the aggregate misfortune is but fair. The burden is admittedly large, due to the war, and should be borne by all patrons of the railroads."

Another important question discussed was that relating to the Federal Farm Loan law. That act is tied up at present in the U. S. supreme court for determination of its constitutionality. The American Mortgage Bankers' Association has raised the point that farm loan bonds should not be tax free and while awaiting decision all activities have been suspended. Applications for millions of dollars in loans to farmers are held up. A strong effort was made by the federation to secure relief through Congress, but that failed.

It was brought out that the recent referendum on the Nolan bill by no means settles the fate of that measure. Forces behind this bill, which is in effect a single tax measure, are laying plans for determined efforts to secure passage of the law, which would make farm lands carry the bulk of the burden of taxation. The measure is said to have originated with union labor and it has the support of groups of radical farmers. Sentiment among Farm Bureau members was overwhelmingly against the measure during the recent referendum, but it was brought out at the meeting of the executive committee

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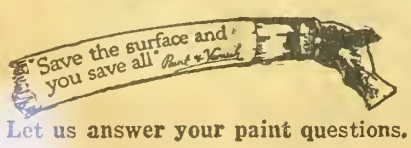

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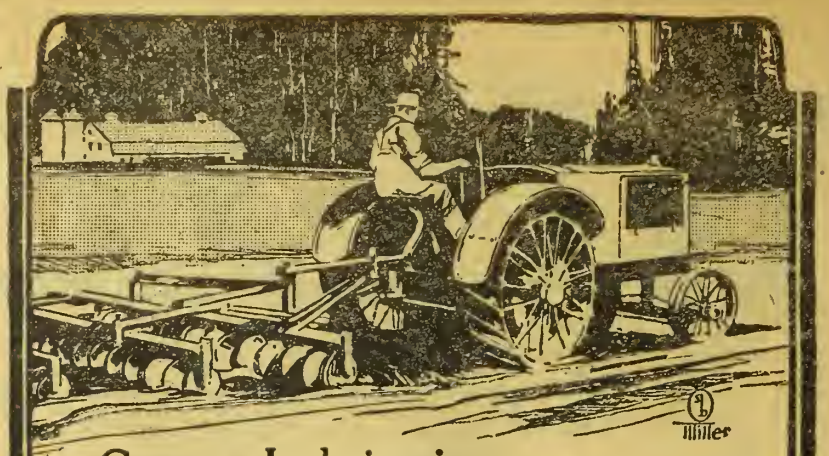

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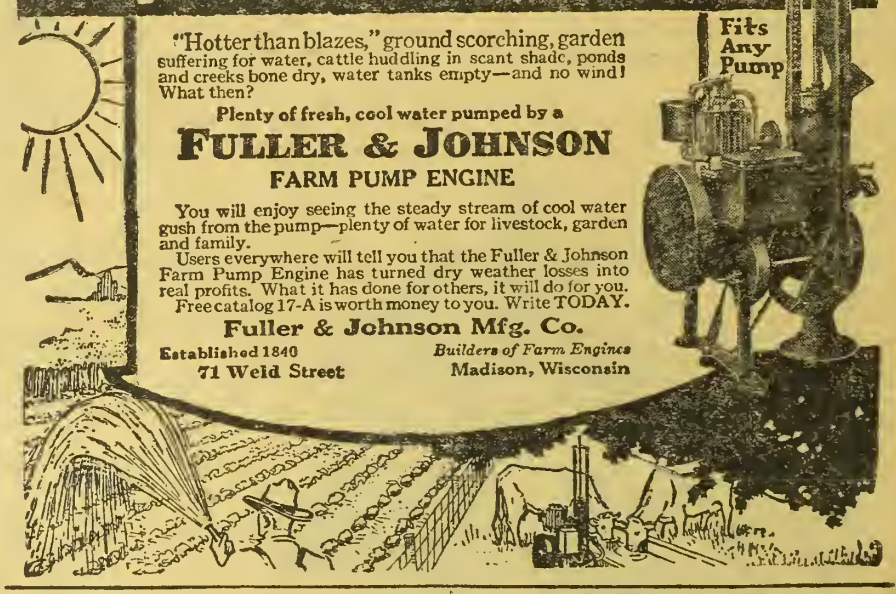

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that the fight must be renewed when Congress meets again.

The committee went on record as opposed to the Townsend federal highway bill on the ground that it would provide for only main arteries of trade, which would be of more benefit to tourist traffic than to the farmers.

The sentiment was expressed that the farmer should be protected from any sudden deflection of prices on farm produce, as he was not benefited by the rise in commodities during the war. Price fixing applied to what the farmer produced, but there was no limit on the price of what he had to buy. For that reason the committee members felt that the farmers' interests must be taken into consideration now that resetting of values has begun.

Discussion of the efforts to secure legislation permitting full and free cooperation among farmers in disposing of their own products brought out a thought which is encouraging to the farmer. It is to the effect that legislation such as the Capper-Hersman bill, legalizing co-operation, is not class legislation because it is not exclusively for the benefit of farmers, but reduces the cost of commodities to the consumer as well. If there is anything to the argument that agriculture is the fundamental industry, the admission must follow that legislation benefiting that industry is of benefit to the public as a whole.

Many other propositions were discussed informally and otherwise, including the matter of loans on crops, the rate of interest on such loans, cooperative farm credits, simplified income tax reports, the cost of production of farm crops. This brief article is merely a hint concerning the various economic questions that come up from time to time at the executive committee meetings. The American Farm Bureau Federation is aiming to tackle agricultural problems at the foundation.

A sub committee was authorized to inaugurate departments of agricultural economics, research, transportation and publicity, and it was decided to enlarge the Washington office and the organization work.

Europe Looks to Us for Help.

Dr. L. S. DIJKSTRA, Holland.

The writer of the following article was engaged in dairy farming in Colorado for several years before his return to Holland. He is a frequent contributor to Western Farm Life and our readers are always glad to have his opinions concerning agricultural matters. On his return to Holland some months ago he was impressed with the necessity for stressing the question of livestock on the farm and the suggestions which follow are timely and of practical value to our farmers.—Editor.

Whatever the future may bring forth or whatever the past may have taught us, there is one thing in the farming business which we must never forget or overlook, namely, the importance of the cow. The cow is, so to speak, the foundation of human welfare. It is by no means a new thought. A glance at ancient manuscripts of the fifteenth and sixteenth centuries shows us that in many leases on European farms there was a clause obligating the renter to keep horned cattle and in some cases even the number of head was prescribed. Naturally we may ask, why did landlords make this requirement? The answer is that our ancestors realized better than many of us that the only way to keep up fertility and improve the farm was by keeping livestock.

The ancients knew by experience that any soil, no matter how rich originally, would lose its fertility in the long run if care were not taken to restore to the soil the plant food taken from it in harvested crops.

However, there were in those days many as there are today, who consider the soil an inexhaustible source of income. We might have excused this view in the old times, but at present and for the future we must realize that this doctrine does not hold good.

Why is it that some farmers in one particular section under the same climatic conditions vary so in their crop yields? Nature may have benefited to a small degree one field over another, but the main cause of the variation is the farmer. The old doctrine, that God has provided our earth with sufficient fertility to provide us with food, might have applied in the old days when population was sparse. Conditions which we meet today in Europe show that sometimes two to three persons must make a living from one acre of land. This is true, for example, of the Channel Islands, of Switzerland and Holland. We also find, fortunately, that there are other places where the ratio is one man to about thirty acres, and in such sections does America belong. America is the land of the future. In the overpopulated sections just two things are possible, viz., compelling the soil to do still more than it is already doing, or buying foods from countries that are not yet over populated. Here again America is fortunate in being able to furnish food or homes for immigrants. European eyes are fixed upon the United States and Canada. America has been a refuge for more than a century for millions of people from all sections of Europe. This fact has prevented starvation during the past.

As a former American farmer I am well aware that present farming conditions in America are subject to a good many more hardships than they were a decade ago and if America shall remain in her position as a source of food and a home for immigrants, agriculture must be intensified. America's increase in population has been greater than the ratio of increase in land put under cultivation. In other words, population is increasing faster than the food supply. While I was still in America a few months ago I read much concerning possible limitation of immigration in order that your farmers might dispose of their product at a more just rate and be able to better feed their own population. However, any limitation of this sort in this age of competition and industry would be an upsetting of the social laws, and I believe that the war has taught us sufficiently what that means. Of course, America cannot be expected to strip herself in behalf of Europe, but we surely hope it will do its part in restoring conditions in our country.

To do this properly new food production areas must be developed, more intensive farming must be carried on, where land is already under cultivation, and higher yields per acre must be obtained. In America there is much more opportunity for increasing yields per acre than in any other section of the civilized world. America must come to our aid to alleviate distress and fill the hungry stomachs of hundreds and hundreds who are crying for more food at more reasonable prices. There is little chance of restoring normal conditions in Europe without this aid. Efforts at upsetting governments will continue so long as people are hungry. Nourishment is what they need to give them a normal mental outlook. America is our main source of hope to relieve these conditions.

I feel sure that many American farmers realize that millions of bales and bags of soil fertility are regularly carried to market and nothing is brought back or kept on the farm in the shape of fertilizers. They know that this is not the way of increasing crop yields nor feeding the hungry. Commercial fertilizers are expensive, but American farmers as a rule, have more economical methods of keeping up fertility, namely, by the plowing under of legumes such as the clovers, alfalfas, peas, etc., and by the use of dairy cows. The dairy cow and all other livestock not only serves to prevent robbing the soil, but actually results in increasing the fertility and improving crop yields. During my residence in America I was engaged in dairy farming and I speak from my own experience and from that of others who know that diversified farming, with livestock as the foundation, is the most economical way of improving one's land.

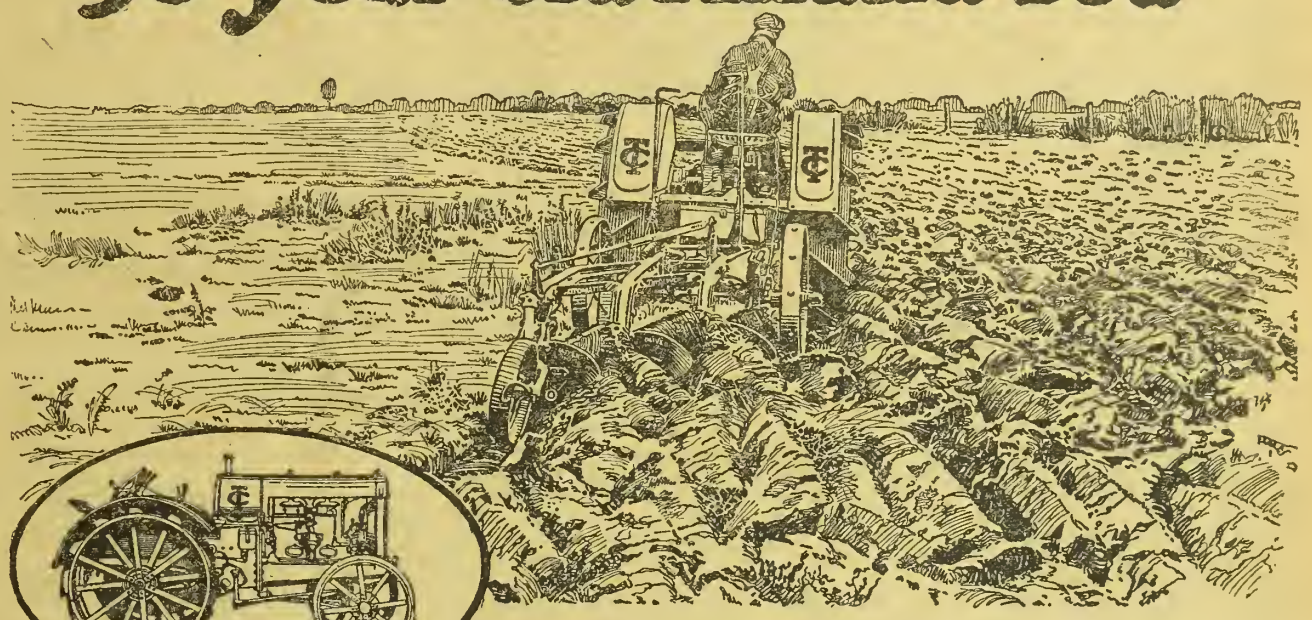
Get Rid of Magpies.

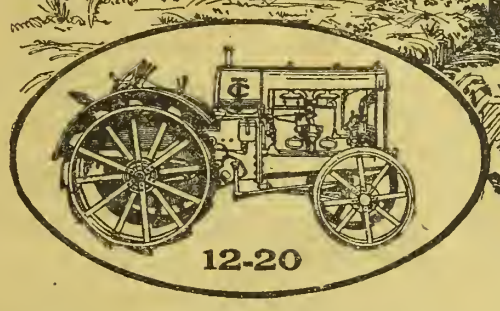
The magpies are a great pest in some localities; they kill and carry off little chickens, and eat eggs. With eggs at the present price, getting rid of magpies is very important.

To keep the magpies from increasing burn their nests. As the nests are made of dry twigs they can be set on fire with a torch. Take a long pole and wrap a gunny sack around it, soak the sack in coal oil, then light the sack and use it to light the nest. If the nests are burned the magpies get discouraged and go to some new place to build.

To get rid of the old birds, poison them. This can be done by putting strychnine in a piece of fresh meat and nailing it to the top of a fence post. The magpies are attracted by the meat and a great many are killed from one piece of meat.—H. L. Lucas, Portland, Colo.

Twin City 12-20 Plowing 30 year old Alfalfa Sod





Here is a striking example of Twin City 12-20 performance. This picture from an actual photograph shows Twin City 12-20 near Montrose, Colorado, pulling three 14-inch bottoms through Colorado gumbo—30-year-old alfalfa sod—plowing 8 to 10 inches deep in this toughest of all land. A feat not easily matched in tractor work.

With this demonstration of what Twin City 12-20 does under extraordinary conditions, you have ample assurance that it will give you any service you will ever demand.

Its 16-valve (valve-in-head) engine means great surplus power with fuel economy that you can see. Its unusual strength and light weight are the Twin City results from the finest alloy steels heat treated. *The Twin City 12-20 is built to do the work—not to meet a price.*

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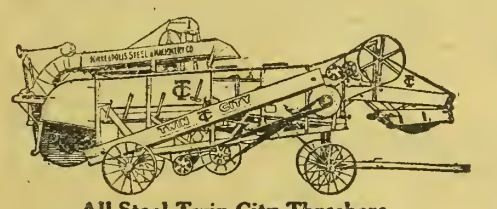

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H. A. LINDGREN

All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, Western Farm Life, Denver, Colorado.

Keeping Dairy Records.

There is no question but that the farmer puts in more time for the income he realizes than any other class of business man. Still there is much that he should do that must be put aside on account of the lack of time to carry it out. There is still another point and that is that a man on the farm works hard and at the end of the working day is so tired that he does not feel like doing any extra work. This accounts for the lack of information oftentimes concerning the returns from the dairy business.

Ordinarily on the farm we milk the cows as a matter of course. We deliver the milk, cream or butter, receive the pay for it and spend it without determining whether there has been a satisfactory profit for the money invested. We finally come to a realization that there has been but a meager return for the feed that has been consumed by the dairy herd. We immediately advertise our cows for sale and declare that the dairy business is a failure. Sure it is on that kind of a basis. We cannot expect to fill a bag with sand when there is a hole in the bottom. The dairy business is sure to have some leaks and in order to make it a success we must eliminate these leaks by a careful system of record keeping.

Every cow in a man's herd is a separate machine. Some of them are working efficiently, while others are operating at a loss. By a system of keeping records the latter class can be found out and taken from the herd and disposed of, and the fewer cows will pay a larger profit. This has been the history of record keeping many times over. In spite of the fact that we think we can tell what the cows are doing without this trouble, we will have our eyes opened if we but give the system a trial. I have known dairymen to declare that they could tell by instinct which of their cows were operating at a loss and which were making a profit, who when persuaded to keep records found that their guess was all wrong and that often the order was reversed.

Where there are enough cows in a community to make it worth while, the cow testing associations are the most reasonable solution of this problem. It is often not possible to have one. But a man will find it wise to keep the weights of the milk each day, whether he can test or not. A milk scale hanging back of the cows on which to weigh the milk after each milking and a milk sheet on the wall where each milking can be recorded, will be a guide in determining which cows are losers and which are winners.

There is no use trying to feed a cow expensive feeds when she operates at a loss. Get rid of her and buy a good producer. If this is not possible breed her to a bull that you can reasonably well expect to improve the milk record in the offspring.—H. A. L.

Jersey Breeders Have Big Year.

The annual meeting of the American Jersey Cattle Club was held recently in New York. The reports show the remarkable growth in popularity of this dairy breed. There were 43,119 animals registered during the year. The herd books now carry the names and numbers of 653,961 animals.

The advanced registry report shows a creditable advancement. During the year 1,767 animals were qualified for advanced registration. Among the outstanding animals were Lulu Alphen of Ashburn, who made 13,668.7 pounds of milk and 800.08 pounds of fat as a yearling. This is the world's record for all breeds in this division. Plain Mary produced 1,040 pounds of fat from 15,256 pounds of milk. She is world's record cow of the breed.

Five sales were held during the week of the annual meeting, in which a total of 365 head were sold for $470,240. The top price of these sales was $23,000 for Gypsy Gamboge Lad, a 3-year-old bull. Another bull brought $13,000. Both of these animals were owned by Edmond Butler of Mt. Kisco, New York.

There is a great future ahead for this breed and the progress is just beginning.—H. A. L.

Holstein Breeders' Picnic.

The Holstein Breeders' Association of Colorado will hold a picnic at Palmer lake during the first week in August. The exact date has not been set, but announcement will be made soon. Holstein breeders in Colorado should get behind this event as it will be worth while. It is the plan to have a basket dinner so that all are asked to fatten up that chicken for the fry. Notice will be mailed to all Holstein breeders in Colorado as soon as arrangements are completed.—H. A. L.

A Boost for the Holsteins.

For many months we have been busy explaining that the Holstein yields as much or more cream than any other breed. Now comes Mr. H. A. Fullenwider with a story that bears out our contentions. Mr. Fullenwider now is a Holstein enthusiast, but at the time this story originated he was a confirmed milking shorthorn and Jersey booster. At his farm near Del Norte he disposed of two milking shorthorns and two Jerseys which were in the prime of their lactation period. In the place of these four animals he bought four Holsteins which were not fresh cows and fed them exactly as he had fed the four he sold. The result is astounding! Not only did the Holsteins yield as much cream as the other cows, but they yielded enough above these four animals to increase the cream check for the first month by $40! On the strength of this showing of the Holsteins Mr. Fullenwider went to Pueblo, looked over a fine herd of black and whites and brought back to his farm a dozen or more, of which three were purebreds. He is now milking about ten or twelve cows with an Empire milking machine, and he states that his cream check is about $160 per month. In addition to this he had lots of milk for baby sheep and pigs. Stories of these facts will become apparent to anyone who will study the milk and butter records of milk producers.—Saguache County Farm and Livestock Reporter.

Johnstown Tester's Report.

The Johnstown Cow Testing Association of twenty-two herds in the vicinity of Johnstown, Milliken, Greeley and Eaton, commenced the testing year with an average of 835.46 pounds milk and 35.05 pounds fat per cow. During the month of May there were 343 cows tested, 75 produced over 40 pounds fat and 35 produced over 50 pounds fat for the 31 days.

Five Best Cows for the Month.

W. A. Purvis, Rocabie, registered Holstein, age 7, fresh 2-11-20; 2,439.7 pounds milk, 95.3 pounds fat.

F. V. Ingham, Woodcrest, grade Holstein, aged 4, fresh 4-25-20; 1,909 pounds milk, 86.6 pounds fat.

D. H. Barber, Lady, reg. Holstein, age 4, fresh 5-21-20; 1,798 pounds milk, 85.0 pounds fat.

J. W. Whowell & Son, Kate, grade Holstein, age 7, fresh 11-22-19; 2,146 pounds milk, 78.1 pounds fat.

Lohry & Wailes, Favorite, reg. Holstein, aged 7, fresh 10-15-19; 1,450 pounds milk, 67.1 pounds fat.

Five High Herd Averages.

Lohry & Wailes, Johnstown, Holstein, 20 cows, aver. milk, 1,335.3; aver. fat, 48.18.

W. A. Purvis, Johnstown, Holstein, 17 cows; aver. milk, 1,029; aver. fat, 38.18

Van Meter & Krebill, Loveland, Holstein, 13 cows; aver. milk, 1,079; aver. fat, 37.1.

D. H. Barber, Greeley, Holstein, 20 cows; aver. milk, 990.8; aver. fat, 36.1.

E. J. Bender & Sons, Berthoud, Guernsey, 14 cows; aver. milk, 712.0; aver. fat, 35.82.

In comparison with the production of last month there has been an increase in the average butterfat of 1.55 pounds per cow, with a decrease of 15 pounds of milk per cow.—Walter Geurkink, tester.

Arkansas Valley Cow Association.

Number of cows tested, 333; average pounds of milk per month, 810; average pounds of butterfat per month, 27.5; average cost of roughage per month, $7.20; average cost of grain per month, $3.70. The five highest herds are:

A. B. S. Co., Center Farm, Lamar, 20 cows; milk, 1,344, butterfat, 46.8; cost—roughage $10.70, grain $9.

R. P. Gilbert, Lamar, 16 cows; milk, 962; butterfat, 32.6; cost—roughage $6.85, grain $5.85.

Green Mountain Dairy, Lamar, 20 cows; milk, 954; butterfat, 31.0; cost—roughage $7.20, grain $7.25.

A. V. S. B. & I. L. Co., Holly, 26 cows; milk, 948; butterfat, 32.0; cost—roughage $8.10, grain $8.30.

Geo. Shell, Holly, 22 cows; milk, 915; butterfat, 32.8; cost—roughage $6.90, grain $6.25.

The five highest cows are:

A. B. S. Co., Center Farm, Lamar, No. 16; 2,361 milk, 75.6 butterfat.

Geo. Shell, Holly, Nelly; 1,860 milk, 55.9 butterfat.

A. V. S. B. & I. L. Co., Holly, Paramity, Korndyke, Clothilde; 1,845 milk, 61.0 butterfat.

A. B. S. Co., Center Farm, No. 1; 1,788 milk, 64.2 butterfat.

Freman Bros., Wiley, Black Nervous; 1,725 milk, 51.7 butterfat.

The quality cows this month number 45 and of these 3 are over 60 pounds butterfat and 12 are over 50 pounds. The herd of the A. B. S. Co. at Center Farm has the highest per cent of quality cows of any herd tested. Of the 20 cows tested there were 15 that were giving 1,200 pounds milk or 40 pounds butterfat per month, or over.

Four herds raised their monthly production. These are: Freman Bros., Ray Bloyd, A. V. S. B. & I. L. Co., and the Green Mountain Dairy.

The cows in general are in better milking condition than last month and there is also an improvement in the barn conditions under which the cows are kept. —B. M. Reed, Tester.

Regarding Butter Imports.

Several shipments of butter offered for entry into the United States from foreign countries have been denied entry because the butter failed to come up to the requirements of the Federal food and drug acts, according to officials of the Bureau of Chemistry, United States Department of Agriculture. The imported butter has to meet the same standards and tests as the domestic product. The majority of the shipments which were refused entry contained too little butter fat and too much salt and water, but a few contained boric acid, a harmful preservative.

More butter came into the United States last year than during any other single year for the last 10 years. The quantity of butter exported from the United States was also larger than normal and more than three times as much as the imports. The total imports of butter and butter substitutes for the year 1919 amounted to 9,519,368 pounds. the exports of butter for the same period were 34,556,485 pounds.

The greater part of the butter imported into the United States now comes from Canada, but shipments come also from Denmark, Australia, Argentia, and New Zealand. Of 300 shipments of butter from Canada examined, 33, or a little more than 10 per cent of those examined, were denied entry into the United States. A few shipments from other countries also were not admitted because they were adulterated under the food and drugs act.

Korndyke Pontiac Mechthilde.

This is a picture of Korndyke Pontiac Mechthilde 2nd 322391, a splendid type of Holstein owned by Lee Johnston, Rural 2, Longmont, Colo. She has just finished a seven-day test in which she made 24.95 lbs. of butter under extra bad conditions. It was impossible for Mr. Johnston to coax her to eat more than 4 lbs. of grain during the last few months. She brought him a pair of heifer calves out of his 28-lb. bull, a grandson of Colantha Johanna Lad. He is justified in having great expectations from these heifers. He will give the cow another test next year when she will be 5 years old.

If in need of advice, ask Western Farm Life Service Bureau.

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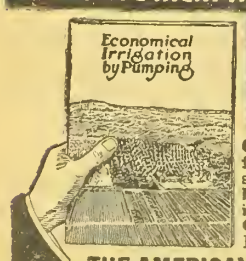

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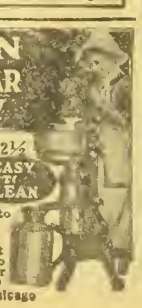

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With the Holstein Friesian Breeders at St. Paul.

(Continued from Page 3.)

the consignment in a class with the best of them. Our production records were up to the average of other states. We, of course, have not been in the business as long as some of the other states, but we have the blood lines on which to build, and it is but a question of a few years until we will rank with the best in regard to production.

The pride of the Colorado consignment was Western Ascalon, bred and developed by Hall Brothers of Denver. She was sold the last day of the sale and brought $5,500. Her new home will be in New Jersey. Mr. L. C. Donley's heifer sold to the same farm for $1,900. M. E. Penrose's young cow was sold to an Iowa breeder for $1,025. The two Loesch heifers sold to a breeder at Green Bay, Wis., one at $1,100 and the other at $1,000. The Columbine Herd consignment from Colorado Springs was sold to herds in Minnesota and Wisconsin. The heifer went to the former state at $1,100 and the bull to the latter at $1,500. The Colorado average was $1,875, which was considered satisfactory.

Mrs. M. E. Penrose of Denver purchased an exceptionally well bred cow from the A. C Hardy consignment of Brockville, Ontario. She is a 23 pound 2½-year-old cow, and is a sister to the world's record short time cow in milk production, May Echo Sylvia. This cow carries the blood of one of the popular families of the breed.

Carlos Hall purchased an Iowana farm heifer, sired by Iowana Waldorn Homestead, who is by the noted Oak De Kol Ollie Homestead. The heifer's dam was sired by Sir Johanna Fayne. She is of good type and will be a valuable addition to the Hall herd. Another heifer was purchased by the Colorado Holstein Company, which is composed of M. E. Penrose, L. C. Donley and W. G. Foster of Denver. They purchased a daughter of Woodcroft Perfection, who is a son of the noted Colorado cow Lady Perfection Korndyke, a 40 pound seven day record cow, and who had a record of 1,046 pounds in a year. She will be remembered as being owned by Dr. Work of Pueblo. The heifer herself is out of a 26 pound cow.

The $50,000 Sale.

The top price of the sale was reached when Alcartra King Sylvia was sold to two breeders in Canada for $50,000. It was expected that this calf would bring more. He was sired by the $106,000 bull, Carnation King Sylvia, and his dam is Tilly Alcartra, the world's record cow for yearly milk production. This calf carries the strongest possible breeding. He was consigned by A. W. Morris & Sons of Woodland, Calif. Another young bull from this same herd, sired by King Korndyke Pontiac 20th, who was by King Korndyke Pontiac by King of the Pontiacs, brought a big price. His dam is Miss Aaggie Acme Burke, who has a world's record in her class in milk production, and has the third highest butter record ever made. The price received for this bull was $41,000, from Mrs. Anita M. Bolkan Estate, of Santa Anna, Calif.

The highest priced cow in the sale was the cow mentioned before in this article, Pabst Korndyke Cornflower, who sold to Gustaf Pabst of Dousman, Wis., for $30,000. Other animals bringing high prices were King Pietertje Ormsby Piebe 16th, a twin bull from the herd of Hargrove & Arnold at Norwalk, Iowa, for $15,000.

Moxee Johanna Korndyke Piebe by Toyon Farms Association, San Francisco, to Long Lake Livestock Co., St. Paul, $10,000.

Ruby Pietertje of Forest Hill 2nd, W. J. Higdon, Tulare, Calif., to Harvest Farms, Maryvile, Wis., $10,500.

Winterthur Ormsby by A. C. Hardy, Brockville, Ontario, Canada, to Ohlfist Bashere, Valparaiso, Ind., for $7,200.

Chloe Pietertje Ormsby, by T. H. Skrie, Glyndon, Minn., to Hugo Schroeder, Owatonna, Minn., for $10,000.

Aaggie Wayne Peep 2nd by E. C. Schroeder, Moorehead, Minn., to Carnation Stock Farms, Seattle, for $7,000.

Colantha Maid Ormsby by E. C. Schroeder to John Puls, Hartford, Wis., for $7,000.

Colantha Maid Ormsby 2nd by E. C. Schroeder to Holly Stock Farms, Wisconsin, for $7,600.

Veeman Grace Piebe by Arden Farms, St. Paul, to E. N. Murphy, Green Bay, Wis., for $6,500.

Ruby Karen Mercedes by Ramsey County Home, St. Paul, to Mankato Holstein Farms, Mankato, Minn., for $9,100.

Chief De Kol Ormsby by Dr. Egil Boeckmann, White Bear Lake, Minn., to Borchrist Farms, Wisconsin, for $8,600.

Ormsby Korndyke Pearl Marie by Julius Schmidt to Dr. Egil Boeckmann for $10,500.

Daisy Colantha Girl 3rd by John Erickson & Sons, Waupaca, Wis., to Wuetrich Bros., Doyleston, Wis., for $9,000.

Dutchland Quality, bull, by Fred F. Field, Brockton, Mass., to Brentwood Farms, Philadelphia, Pa., for $7,550.

Many others sold around the $5,000 mark, but on account of lack of space they cannot be given. The average price of the sale was $3,075. The total receipts were close to three quarters of a million. It was predicted before the sale that it would total over $1,000,000, but on account of the financial situation over the country, the prices paid were considerably lessened. Banks over the country have tightened up on their loans. It must be said, however, with due respect to all of the states, Wisconsin made the sale. Breeders from that state purchased liberally and did not seem to be hampered by banks. The cause for this is due to the fact that dairying is the major industry in the state and the breeders are independent of bank conditions. In spite of all handicaps that may have been experienced from this condition, the sale meant much to the Holstein breed. There were comparatively few animals sold for less than $1,000. As is always true at a successful sale, there were many bargains, and there is no doubt but that these will result in putting many new breeders on the map.

Out of justice to all who are interested in breed development, it would no doubt be advisable to limit the number of head consigned to these sales. The number handled at St. Paul was just a little too large. Buyers became tired from sitting at the ringside for nine to ten hours each day. It is felt that the sale would have been still more successful if 50 to 60 animals would have been the daily allotment.

Those who attended from Colorado were Mr. and Mrs. Carlos Hall, Mr. and Mrs. L. C. Donley, Mr. and Mrs. M. E. Penrose, Colonel and Mrs. Banks, W. G. Foster, P. L. Geiser and the writer from Denver, Spencer Penrose and W. E. Cushner and wife of Colorado Springs, R. L. Loesch of Montrose, and P. V. Pattridge, manager Willow Springs Farm, Mt. Morrison.

When all is said and done our hats off to Secretary Bertrum Scott, of the Minnesota Holstein Breeders' Association, and his able assistants, and to Senator J. M. Hackney for the courtesy shown and the entertainment provided in making the national meeting and sale the most successful ever held by any breed association.

From Lindgren's Notebook.

After looking the state consignments over at the national sale at St. Paul, Colonel Banks and Carlos Hall returned to the Colorado consignment and pronounced it equal to any that were there in size and conformation of animals.

Colorado breeders were on their toes at the sale ring side. When Meadow Holm Ona Wayne Belle, a grand daughter of Sir Pietertje Ormsby Mercedes and out of a 1,087-pound dam, came into the ring, L. C. Donley made Carnation Farms of Seattle pay $10,000 for her. She was the prettiest heifer sold. Her conformation was right and she had the production back of her.

The Colorado delegation was proud of the Sir Johanna Bess Segis bull owned jointly by Pahgre Valley Ranch of Montrose and Senator J. M. Hackney. He was brought to Colorado as a calf and just recently returned to Minnesota, where he is being used on some of the daughters of the Count. He sure did show the result of Colorado alfalfa and climate.

Carlos Hall was the spirit in the bidding on a daughter of Countess of Sunnyside De Kol 2nd, the cow that won grand championship at the Pacific International at Portland in 1919. He caused the Bell Farms of Pennsylvania to pay $2,800 for the young heifer.

The Holstein Friesian World, the leading organ of the Holstein breed, is conducted by a bunch of live young men who are doing wonders to keep the Holstein breeders informed regarding good types and families of the breed. They stand for progress and are keeping their publication up to the minute on all things pertaining to better breeding.

W. E. Cushner, manager for Spencer Penrose, owner of the Columbine herd at Colorado Springs, deserves credit for the showing Colorado made at the sale. He is a valuable man to the Holstein breeders of the state.

The Colorado delegation at the sale discussed the advisability of a state show herd of Holsteins for the circuit this fall. This would be an excellent opportunity to show the outside what we have in the state.

The Minnesota meeting and sale brought out the advantages of a good live breeders' association. Many of the states have paid secretaries who devote their time to the interests of the breed in their respective states. Not a bad idea for Colorado breeders to think about.

It certainly pays to buy animals that are members of the popular families. Your advertising is then already partly done. As Col. S. T. Wood, the pedigree man puts it, you have the big breeders working for you.

Former Governor Van Sant of Minnesota in his talk to the Holstein breeders at Senator J. M. Hackney's farm, defined a pessimist as the man who in trying to select the lesser of two evils, chose them both. He defined an optimist as the man who comes home tired after a hard day's work and makes lemonade out of the lemons that have been handed him during the day!

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CREAM SEPARATOR
And That's The
DE LAVAL
For Forty Years
The World's Standard

There may be a half dozen plows, wagons, tractors, autos or other farm equipment to choose between, but no would-be imitator or utilizer of expired De Laval patents has yet produced a cream separator comparable with the De Laval.

First in the beginning, De Laval machines have led in every step of cream separator improvement and development. Every year has presented some new feature or betterment, and the 1920 machines are still better than they have ever been before.

If you haven't seen or tried a new 1920 De Laval machine, any local agent will be glad to afford you the opportunity to do so.

If you don't know the nearest De Laval local agent simply address the nearest main office, as below.

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Master Farm Gates Cant Sag, Warp or Twist

The Farm Gate you need. Designed and built for long service. Erect it—then forget it. No continuel repairing. Will last for years.

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are of the double bow, aeroplane construction. Light in weight; exceptionally durable and look well. Cannot sag, warp, twist or bend. Satisfaction guaranteed. It's the Master Gate. Free circular—write for it.

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Reliable representatives get our proposition.

Save Your Silo, Water Tanks or Metal Flumes
with our Famous Silo Coating. Acid-proof, Water-tight, Inexpensive. Write for particulars.
Farrell Construction Co.
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We do not deal through distributors but County Agents only.

GET OUR BIG MONEY CATALOG TODAY. Don't wait! Learn how you, in your spare time can make Big Money, introducing Bush Cars in your County. The cars with Money-Back guarantee. Bush light four and De Luxe etc. Don't wait. Write today!
Big Money-Making Offer for County Agents Only
BUSH MOTOR CO.,
Chicago, Illinois, Dept. G-131, Bush Temple.

$25.00 Sweep Feed Grinder | $31.00 Galvanized Steel Wind Mill.

We manufactnre all sizes and styles. It will pay you to investigate. Write for catalog and price list.
CURRIE WIND MILL CO.,
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DAISY FLY KILLER PLACED ANYWHERE ATTRACTS AND KILLS ALL FLIES. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 5 by EXPRESS, prepaid, $1.25.

HAROLD SOMERS, 150 De Kalb Ave., Brooklyn, N. Y.

CORN HARVESTER One man, one horse, one row. Self Gathering. Equal to a Corn Binder. Sold direct to Farmers for 22 yrs. Only $28 with fodder binder. Free Catalog showing pictures of Harvester. PROCESS CORN HARVESTER CO., Salina, Kans.

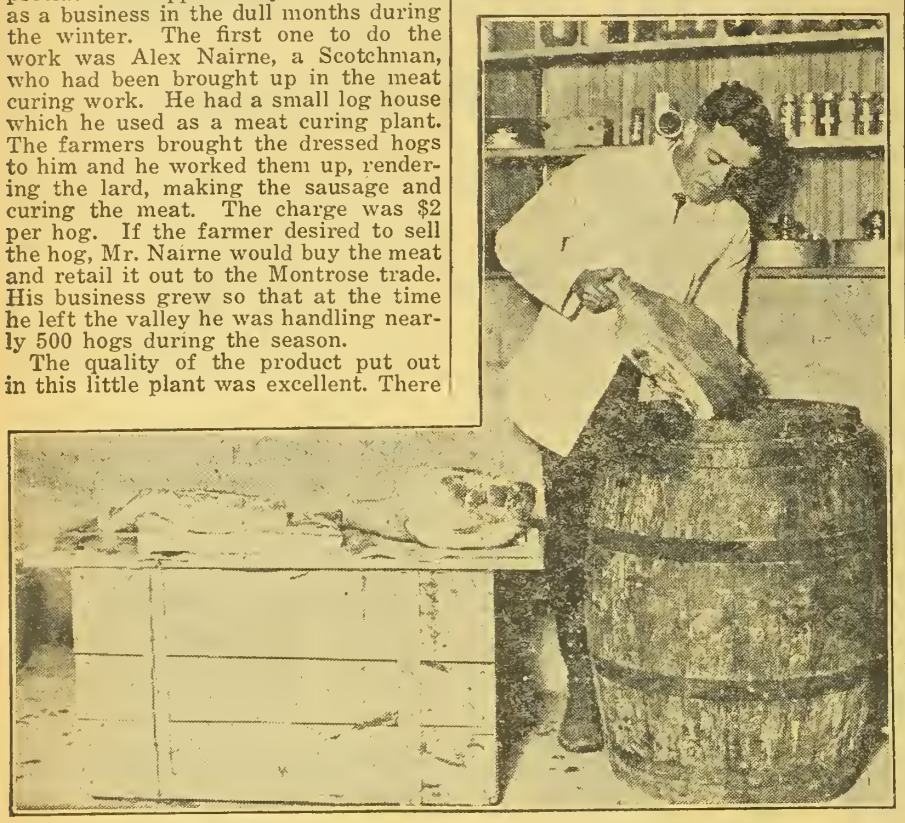
Community Meat Curing Plant

MONTROSE COUNTY MAN DOES CUSTOM CURING

H. A. LINDGREN.

A short time ago a visit was made to the Montrose country. There a community meat curing plant was visited. It is being conducted by Mr. A. A. Loss, who lives on Spring Creek Mesa not far from Montrose. Mr. Loss is unusually successful in the art of curing pork. He is the second man in that vicinity to appreciate the opportunity of this work as a business in the dull months during the winter. The first one to do the work was Alex Nairne, a Scotchman, who had been brought up in the meat curing work. He had a small log house which he used as a meat curing plant. The farmers brought the dressed hogs to him and he worked them up, rendering the lard, making the sausage and curing the meat. The charge was $2 per hog. If the farmer desired to sell the hog, Mr. Nairne would buy the meat and retail it out to the Montrose trade. His business grew so that at the time he left the valley he was handling nearly 500 hogs during the season.

The quality of the product put out in this little plant was excellent. There was no trouble in disposing of it. Among his specialized products was a rolled bacon. For this the entire side of the hog, including the loin, was trimmed of the greater part of the fat and then rolled, after being brine cured, into a tight roll and smoked. When finished it could be sliced round with the loin in the center. This product was of exceptional quality and was in demand wherever it was tried.



How Meat Curing is Taught at Colorado Agricultural College.

When Mr. Nairne sold out, Mr. Loss took up the work under a little different plan. He did not buy any hogs, but simply cured them for the owner. Now some of the farmers bring as many as 25 hog carcasses to him to be cured. They sell what they do not want at a very reasonable price. The quality of this cured meat is exceptionally fine. It is very much better than that put out by the packers.

At the time of the visit to Mr. Loss' farm in February, he had handled nearly 300 head. Sometimes the farmer does not want to kill the hig and brings it to him alive. In that case it is dressed for 75 cents. His charge for working up the lard and sausage and curing the meat is $2.50 for each hog. In case the animal weighs more than 200 pounds he makes a charge of one and a quarter cents per pound.

The meat is cured in the brine and then smoked, the cured meat being returned to the farmer. In this way he does not need to provide a building for storage. In fact, he does not have any expensive equipment to maintain. His buildings consist of a shed for killing and a room for curing and smoking.

This system is a very practical one and should be carried on in every community. Some one in every locality has the knack of doing this work successfully, and should be persuaded to do it for the neighbors. It is foolish for a hog producing community to ship all their hogs to market and then pay a high price for the cured packing house product. It can be carried farther than that. The people in the towns who do not raise hogs can go to a farmer in the locality and purchase a hog and have it cured in this way. The saving on the meat bill would be reduced to nearly one-half, and besides one would get a far better quality of cured meat, besides a good supply of lard, fresh sausage, spare ribs, loins and pigs feet.

Mr. Loss' system is well worth while also, because it brings the country producer and the consumer closer together.

Insect Enemies of the Beet.

"Principal Insect Enemies of the Sugar Beet," is the title of a text book just issued by the Agricultural Department of the Great Western Sugar Company. The volume bears the authorship of Asa C. Maxson, entomologist in charge of the company's experimental department at Longmont, Colo. Reproductions of insects for colored plates are by Caroline M. Preston.

The volume is issued for the benefit of growers and copies are to be had by them on application to field superintendents or other officers of the company. Emphasis is put on prevention. All crops have their insect enemies; the sugar beet does not have more than its share; but the money value of the crop impels care in handling and the use of every possible safeguard to prevent damage.

"It should be emphasized," says the introduction, "that everything known to good farming practice in beet culture, such as rotation of crops, manuring, clean culture and timeliness of plowing and irrigating, tends to minimize damage by insects."

The work is complete, concise and expertly classified. It is both scientific and popular. It gives the grower unfamiliar with entomology an opportunity to clearly identify any insects attacking the beet crop, both by description of the insect and type of damage inflicted. It provides the student with a wealth of material gathered from the field or drawn from authoritative sources.

Only a general impression can be given of the volume in this short review, but the outline furnishes an idea of the comprehensive character of this work. The introduction includes a key for determining insects injuring sugar beets and a series of colored plates. Under chapter one, which is of a general nature, there are given (a) structure, (b) development, (c) classification, (d) methods of control.

Chapter II shows root feeders of the biting and sucking types, including cut worms, white grubs, wireworms, sugar beet root louse, sugar beet nematodes, root-knot nematode or gallworm.

Chapter III describes the leaf feeders, including caterpilars, beetles, grasshoppers, field crickets, leaf miners, aphids or plant lice, true bugs and leaf hoppers.

Chapter IV shows the beneficial insects which includes beetles, true bugs, lace-winged flies, wasps, ichneumon-flies, braconids and chalcis-flies.

Bang!
Another Bill for
Repairs
Every Time There
Is a Heavy
Thunder Shower.
If You Don't
Protect Your Roofs
AND
Wooden Buildings
With a Coat of

Bituminous
WATER PROOF
Roof Paint

TAR DEPARTMENT
THE DENVER GAS & ELECTRIC LIGHT CO.

"Rush Periods"

There are rush periods in every line of business, especially where the public is being served, and when these rush periods come the capacity of the utility is invariably overtaxed and someone must wait for service.

A man will wait in line patiently several minutes to make a deposit in a bank, to buy a two-cent postage stamp, to register a letter, to buy a railroad ticket or a seat in the theatre, and make no complaint. He will go personally to see a business man and will sit in line for half an hour before he can be "seen," and think nothing of it.

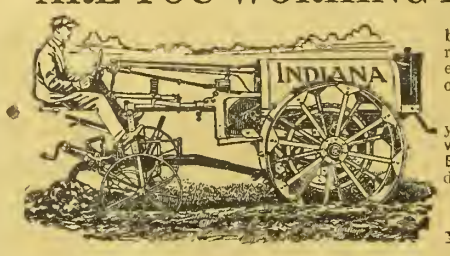
The vast system of the Mountain States Telephone Company which cares for 306,301 telephones in its own territory alone, is set up to answer calls in a very few seconds. Any variation therefrom is usually because a number of calls have come in simultaneously.

In telephone operation, as in everything else, when an overload occurs, patience should be exercised by everyone until the jam has been relieved. The operator is not always to blame—the equipment may be short owing to scarcity of materials, but it is not at fault—even the public that creates the rush periods is not to be blamed.

Abnormal conditions is the answer. Patience and reasonable consideration is the temporary remedy until adequate equipment may be had.

THE MOUNTAIN STATES
TELEPHONE & TELEGRAPH CO.

ARE YOU WORKING FOR YOUR HORSES?



You certainly are, most of the year feeding, bedding, watering, and cleaning them and raising the feed they eat. Those you keep in excess of one team, work for you in return only 90 to 100 days during the crop season.

Quit working for your horses and work for yourself. An Indiana Tractor will do more work than two good teams. It handles Grain Binders, Drills, Potato Diggers, etc. It handles plows, harrows and cultivators.

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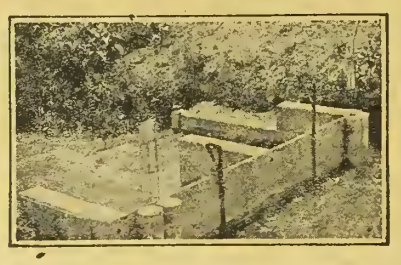


Have you had trouble or misunderstandings over the division of water for irrigation? Do you know if you are getting all the water to which you are entitled? The Burnham measuring device is the answer.

The R. Hardesty Mfg. Co.
1837 Market St. Denver, Colo.

We manufacture a complete line of Irrigation Supplies, such as Flumes, Pipe, Gates, and other accessories. Write for catalogues and information.

CANVAS AND RUBBER THRESHER BELTS
The Western Belting and Packing Co.
1751-61 Wazee Street, Denver, Colo.
Manufacturers of Oak Tanned Leather Belting, Suction Hose, Steam Hose Water Hose. Phones Main 5795, 5796, 5797, 5798.

Clark's Travel Letter.

Dear Farmer Putnam,
Salem, Colo.:

Since writing you last I have been around quite a bit. I spent a few days at Sterling with County Agent Morrison and held a meeting out in the dry land section. The farmers there are coming to the front notwithstanding last year's drouth. They are learning how to handle the soil under dry conditions and they are making money. They are apparently as comfortably situated as the farmers of Iowa or any other state. Poor homes and poorly kept farms are exceptions. Years ago Mr. Geo. Burckhalter, Mr. Morrison's predecessor, and I held many meetings in the dry land sections around Sterling and while they seemed discouraging at the time, they have undoubtedly had some good effect. We really don't know sometimes how much good we are doing. There are several points in the state where I thought, at the time, our meetings were failures, but the seed sown then germinated, spread like Russian thistles and resulted in a large number of changes being made and better farm conditions generally established.

One evening Mr. Morrison took me out to a school house not far from Willard. The meeting not being advertised the turn-out was small but the interest was good. The farmers out there were struck with high-priced feed last winter, some of them being hardly able to keep their stock. This is a bad condition, notwithstanding that Willard is said to be the largest wheat shipping point in the state and it would seem that a condition favorable to wheat growing would be favorable to forage production. The farmers in Logan county who had silos last winter slept soundly while the other fellows walked the floor. Many farmers over there say "never again will I be caught that way." But I know they will. They talk like that everywhere in the state, but they soon forget. I was informed that one pasture in northeastern Colorado had a thousand beef hides on the fence. As near as I can estimate the stockmen of Colorado lost $10,000,000 worth of livestock a year ago. I told this to W. W. Putnam, the crop reporter, and he was inclined not to believe it, but after figuring a short time from a little book he had in his grip he said, "Well, I guess you are not far off." Just think Tom what $10,000,000 would do toward remunerating our under-paid county school teachers, toward building consolidated schools and toward securing a better rural condition in general. Just think of using so much wealth to feed the coyotes and crows, while thousands of innocent children starve in far-off countries! I tell you Tom, a lot of our civilization is tied in a sack and only occasionally do we let out a little of it.

I have talked this matter over considerably with the county agents and especially with Morrison of Logan. He says he is "going after it." Logan county is an empire, but it needs more and better livestock, more forage crops and hundreds of silos. It is a little backward in these respects, but you just watch when it gets started. It will soon lead just as it does at the state fair with its exhibits. The Logan county fair at Sterling is said to be the best in the state.

If nothing happens, Mr. C. C. Peterson of Willard is going to put in a silo and I am going over to help him. If silos get started there once they will go in by the hundreds, and when you are in Logan county I wish you would talk more and better livestock and silos.

While at Sterling I attended a farmers' meeting. The farmers in northeastern Colorado are talking flour mill and they are going to capitalize at $500,000. Can you think in such big figures? I can't, but good luck to the proposition. While attending the meeting I met J. M. Collins of Eaton. He was there to help steer the farmers in the straight and narrow path that leads to success. One time farmers went into such a proposition almost blind and the result was that they generally failed, but they are learning and we now know that farmers have as good thinking machines as any class of people. I don't know why living on a farm should make a person dull and incapable of thinking.

I made a stop at Fort Morgan. I went there to help Walter Ott, the county agent, to hold a meeting, but the weather and roads were so bad that the meeting did not take place. The crops look fine there and twenty miles out in the dry land section there were lots of lagoons filled with ducks and farmers were wearing rubber boots. I never saw better prospects for a good crop. One farmer was pasturing his dairy cows on rye and it certainly was a pleasing sight. If he will now sow a little Sudan grass for pasture, cultivate and handle his forage crops well and fill a silo, he will have an abundance of green, succulent feed the whole year and his milk check will keep his pocket book well filled. The Kansas Experiment Station has been trying out Sudan grass as a pasture crop and has made a splendid report on it. Five and four-tenths acres gave a return above the cost of feed of $183.09. Prof. McCall says it is not advisable to turn cattle upon Sudan grass when the crop has been stunted by dry weather, but when the crop is growing normally there is little danger in pasturing. He refers to poisoning, Sudan being a near relative to sorghum.

While at Fort Morgan I assisted in forming a county-wide co-operative livestock shipping association. The board met last Friday and set the manager's salary at $3,000. He is to give all his time to the work of the association and help the farmers in every way he can. The board is looking over several candidates and will select the most likely one in a day or two. Last year Morgan county shipped out 667 carloads of livestock and a good live manager will save the farmers an enormous sum of money.

In this work I have an opportunity to study farmers' organizations and have come to think that farmers are in great need of executive ability. Some places the managers dictate the policy not only of the business they are operating, but all the farmer business of the community and the result is failure. Not long ago I visited a farmer-mercantile business where the manager, in unprintable language, ejected the secretary of his board of directors from the place of business. I find that some managers are unable to furnish bonds and like the birds of the air, are always coming and going. Executive ability is greatly needed and farmers cannot hope to succeed in organization work until they dictate policies and hire managers only to execute. There are lots of good managers and these should be encouraged by paying them every cent they are worth. Some of them are worth more than they are receiving and should have their salaries increased at once.

Crops up here never looked better. Rain comes every few days and alfalfa will be ready for the sickle in about two weeks. Notwithstanding the talk about crop reduction on account of labor shortage, farmers are planting every square inch at their command.

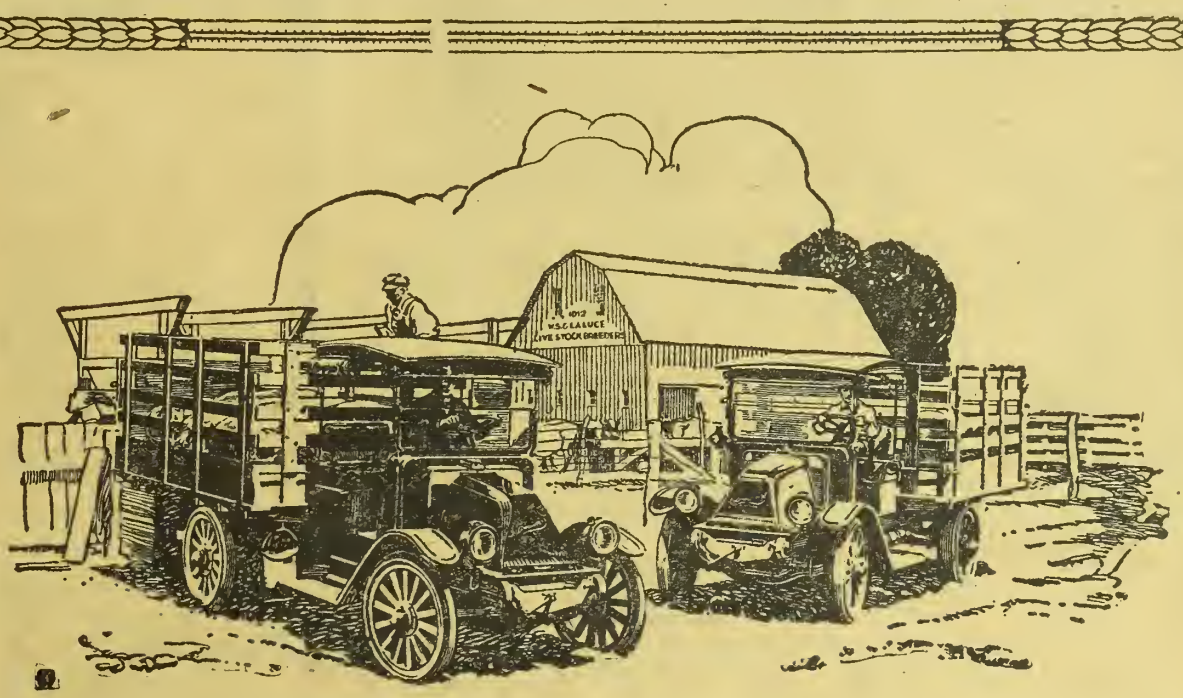
R. W. CLARK.

Corn Under Irrigation.

Answer to R. C., Eagle county, Colo.

Cultivation of Corn Under Irrigation —The first cultivation may be simply a harrowing, or it may be a light cultivation with a many-shoveled cultivator to keep down weed growth. Corn in its young growth requires very little water. In most northern Colorado sections, therefore, one or two cultivations may usually be given before irrigation is required. In many sections of the state, however, irrigation will have to commence at once. Irrigation should be given just as quickly as the corn crop needs water. Later irrigation should be given just as frequently as the crop shows need of water. When corn is first started, when it first commences to joint, and when the silk and tassel are forming, are extremely critical periods for corn in its demands for water. Great pains should be taken to see that irrigation is given at these periods, or at least that the corn is provided with water. Of course, if the soil is moist, irrigation should be withheld. In preparing corn land for irrigation, a furrow opener, similar to that used for beets, should be used, as corn is irrigated by the furrow method. This presupposes, of course, that the rows are placed on the land so as to make proper land slope for irrigation. Just as soon as the soil will permit, after irrigation, corn should be cultivated. This cultivation should be given in every case up until the corn has grown large enough to thoroughly shade the ground. After this cultivation following irrigation is not so important, but it will be of benefit even here. It is doubtful, however, if the benefit will be great enough to justify the cost which the cultivation incurs.—Alvin Kezer, Department of Agronomy, Colorado Agricultural College.

Chicks will thrive much better with a daily allowance of green food. Dandelions, leaves and roots, are good for them. A tea made of the dandelion roots and used to mix the mash is a good tonic, and the dandelion greens chopped fine are useful.—Wallace's Farmer.



Your Rail-less Railroad

YOUR live stock and the produce from your fields, carried in freight trains to the cities, thunder past countless danger-signs with the warning, "Look Out for the Cars!" Each one of these marks the crossing-place of a country road—a road without rails, leading to railroad and town. Each one marks a farmer's right-of-way.

Since your farm is a 1920 enterprise, probably it is fitted with most of the following modern equipment—the telephone, good lighting and heating, a silo, a manure spreader, a cream separator, an automobile, an engine, a tractor.

But have your hauling problems found their proper solution? Are the time-losses and difficulties of a decade ago still impeding your endless carrying of farm loads?

Government statistics show that in 1918 alone, 350,000,000 tons of farm produce were transported to local shipping centers in motor trucks. The same national figures prove also that American farmers are the greatest users of motor trucks—among all industries. No progressive farmer can afford to overlook impressive *facts* like these.

Your name and address mailed to our office at Chicago will bring you descriptive folders that will prove interesting and instructive. Put an ***International Motor Truck*** at work on your farm and on the roads which are your right-of-way. Handle all your miscellaneous farm hauling with railway efficiency. The nine ***International Motor Truck*** sizes range from ¾ ton to 3½ ton. Keep in mind that these trucks have been made for years by the makers of good and trusted farm machines.

INTERNATIONAL HARVESTER COMPANY
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Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

A Summer Wish.

I think the meadow-lark's clear sound
Leaks upward slowly from the ground,
While on the wing the blue birds ring
Their wedding bells to woods around.

The flirting chewink calls his dear
Behind the bush; and very near
Where water flows, where green grass grows,
Song-sparrows gently sing, "Good Cheer."

And best of all, through twilight's calm
The hermit-thrush repeats his psalm.
How much I'm wishing to go a-fishing
In days so sweet with music's balm!
—Henry Van Dyke,

Four Things.

Four things a man must learn to do
If he would make his record true:
To think without confusion clearly;
To love his fellow-men sincerely;
To act from honest motives purely;
To trust in God and Heaven securely.
—Tennyson.

The Collecting Instinct.

There is a season in the life of every well balanced youngster when a home-made museum seems to be his ideal dwelling place. His or her main ambition seems to be to acquire specimens, rocks, stamps, bugs, flowers, birds' eggs and feathers, pictures, books—anything. Lucky is the mother whose progeny do not get interested in all types at once. Psychologists call it the collecting instinct, citing instances of savages and animals bringing in bits of the outdoors which have nothing to do with the necessities of life. They seem to imply that your son or your daughter will pass through this stage as his or her education and civilization develops—and sometimes neglect to state that there are grown up editions-de-luxe of collectors known as archeologists, botanists and biologists. Not that every child who pickles a frog is going to be a wonderful biologist, but it does do him good to want to study the frog at any rate.

And this is a plea for the collecting instinct with a reason and a system. The reason is simply this—a child shows his "aliveness" to the interest of the out of door world by bringing bits of it home, and that interest should help him to fit into his place. I know a woman who has lived all her life in a very beautiful section of the mountains and yet she has never taken time to hunt up the names of the birds she sees. She knows very few of the flowers, nor has she followed any of the habits of wild animals that abound near her home. Her sole interest is a certain petty gossip about her neighbors and deciding whether it was "on a Friday or a Saturday" that one of them first went riding for cattle last month! And yet there is another much younger woman near this one who has a small but very well mounted collection of butterflies, and who knows the names of every bird that visits her farm. You know right now which woman you would rather visit.

Then let the youngsters make collections, of almost everything but birds' nests and eggs, but see that there is some system to the collection, that the flowers and insects are mounted, and named and that the owner of the collection knows as much as he or she can find out about the history and habits of each specimen. Encourage the use of the family kodak for getting pictures of flowers and animals. The writer recently went gunning with a camera for a chipmunk, and the hours spent, lens focused, one arm in the gravel steadying the machine, while the ants crawled round, waiting for the vivacious little subject to pose sweetly on a rock where he had a good background, were as full of thrills as any movie show, and quite as good conversational material. Such hours are worth much in the lessons of patience and ingenuity they bring. A summer's collecting and the interests of the whole family are brightened and broadened.—E. D.

Let's Go to the Cochetopa Hills.

The playgrounds for a nation, our national forests, and the preservers of the possessions that wind themselves into our hearts and homes most completely, our beautiful trees! All the vacation trips we have taken through the pages of Western Farm Life, have been to some of our many national parks. Now we're going to one of the most beautiful of our national forests, of which even the name is an enchantment, being probably a mixture of the speech of old Spain and the early Indians.

This forest is not one of the best known in Colorado, but it is one of the best loved by those who do know it. It is a big stretch of irregularly outlined mountain tree land along the northwest end of the San Luis valley, in a country famous for its fishing and hunting. If you want a spot far from the haunts of those who merely tour, but one which is a rendezvous for the real woodsman and nature lover, it is one of the most ideal spots in Colorado for camping and fishing. Here rise those streams which go to form the waters of the far-famed Gunnison and many are the falls and the catches brought back from the Saguache, Tomichi, Agate and Marshall creeks.

The interesting bits of scenery to visit are the fantastic shaped rocks on the Creed trail, known as Troni peaks, the Clumney rocks—on Las Pinos, the canon and falls of Saguache creeks and Baldy lake at the head of the Long Branch creek which covers an area of fifteen acres and whose depth has never been sounded.

If you are a peak climbing fiend there are two here, over 14,000 feet high. Shavans mountain, and San Luis peak, and old Mount Ouray, 13,000 feet—like his Indian namesake is so situated that he seems to tower above all the mountain range and keeps watch of all that goes on.

There are two far-famed passes easily traveled by automobile across this forest into the Gunnison valley—the Monarch and Cochetopa—and the "Gunbarrel road" leads in an almost straight line from the top of Poncha pass to Monte Vista, giving the wandering visitor at least three chances to go back a different way than he came.

A real camper and an interested one goes again and again to the hills of the Cochetopa, for there is a lure different from more frequented play grounds. Yours is the power to explore. Try this national forest.—E. D.

Four Nature Books.

1. "Flowers of Mountain and Plain"—Clements and Clements. A small volume of flour studies—gives names and key. May be purchased in any good book store.

2. "The Children's Bird Book"—by Thornton Burgess. An excellent story book of different birds, beautifully illustrated and clear enough for even a small child to remember. This may be purchased at any good book store.

3. "How to Attract Birds in the Northwestern United States." Farmers' Bulletin No. 760.

4. "The Collection and Preservation of Insects and Other Material for Use in the Study of Agriculture." Farmers' Bulletin No. 606.

These two farmers' bulletins may be secured free of charge by writing to the Department of Agriculture, Washington. D. C., for them.

The Ancients Knew Beans.

That beans were well known as early as 300 B. C. was recently published in an article in the Christian Science Monitor, which states that the planting of beans, to be plowed under for fertilizer, was practiced 300 years before Christ. The article says:

"Theophrastus, writing 300 years before the Christian era, says that in Macedonia and Thessaly beans were grown to be plowed into the soil at flowering time. Varro about 50 years B. C. says: 'Some things should be sown with a view not so much to present profit as to next year's crops, because when cut down and left they improve the soil. Thus lupins before they produce many pods, and sometimes beanstalks, if the podding stage be not so far advanced that it is profitable to pull the beans, are usually plowed into poor land.' In Flanders, which has always been a model to the rest of Europe in husbandry, this method has always been a great feature. This we learn from the lecture read by Dr. E. J. Russell, M. A., F. R. S., C. B. E., at the Royal Horticultural Society—who recommends these methods and regards it as one of the most efficient ways of making soil. Such is our obligation to Theophrastus."

Cleaning Paint Off Windows.

Cleaning the windows of a new house or a newly painted house is no enjoyable job. The paint comes off easily, however, if given a little of the right kind of help.

One would hardly go to an automobile accessory store or a garage to find something with which to clean windows, yet it will be found that an ordinary tar remover, used by motorists to clean up their machines after a trip over newly tarred roads, is one of the best things obtainable for taking ordinary house paint off glass. Once housewives learn this, dealers in tar removers are going to have lots of customers who do not own an automobile and never expect to own one.

Use Pure Salt on Hides.

Tanners recently submitted to the Bureau of Chemistry green salted hides which could not be unhaired after liming in the usual way, in order to find out the cause. An examination showed that on the basis of the dry hide unhaired spots contained 0.8 per cent of alumina and the portions where the hair was not loosened contained 1.25 per cent of alumina. The portions of the

Genuine Aspirin

Name "Bayer" means genuine
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hide which contained 0.8 per cent of alumina unhaired with difficulty, while the portions containing 1.25 per cent could not be unhaired even on the beam. An inferior salt containing alum had been used in salting the hides and had set the hair.

This incident illustrates the importance of attention to details in the handling and curing of hides and skins. Farmers, country butchers, and dealers, are advised by the department to use only clean, pure salt in salting hides. The presence of alum in salt is especially objectionable and as little as 5 per cent in the salt can be detected usually by its astringent, bitter taste.

Farmers' Bulletin 1055, which gives detailed directions for skinning, curing and marketing of country hides and skins, may be obtained upon application to the United States Department of Agriculture, Washington, D. C.

New Fashion Service.

All Patterns Now 12 cents Each: Address WESTERN FARM LIFE, Pattern Department, 1518 Court Place, Denver, Colo.

Read This Before Ordering Patterns.

Write your name and postoffice address plainly. Enclose 12 cents in stamps or coin (wrap coin carefully) for each pattern ordered. Send your order to Pattern Department, Western Farm Life. Our patterns are furnished especially for us by the leading fashion designers of New York City. They are mailed out from Chicago headquarters to save time. About ten days should be allowed us to get patterns to our customers. **Please do not order from any list published by us before March 1, 1920.**

Limited space prevents showing all the styles. We will send our 32-page fashion magazine containing all the good, new styles, dressmaking helps, serial story, etc., for 5 cents postage prepaid, or 3 cents if ordered with a pattern. Send 15 cents for magazine and pattern.

No. 9442. Boys' Blouse.—Cut in sizes 4, 6, 8, 10 and 12 years. The blouse is made with a back yoke and may have a stitched-on or detachable collar.

No. 9456. Ladies' and Misses' Smock.—Cut in sizes 16 years, 36, 40 and 44 inches bust measure. The becoming overblouse shown is made with the back and front in one piece.

No. 9450. Ladies' Dress.—Cut in sizes 36, 38, 40 and 42 inches bust measure. The tight-fitting waist ties in a bow at the back and is worn over a gathered skirt.

No. 9347. Ladies' One-Piece Apron.—Cut in sizes 36, 40 and 44 inches bust measure. So well designed is this apron that it could be easily made to serve for a house dress as well.

No. 9504. Girls' Combination.—Cut in sizes 2, 4, 6, 8, 10, 12 and 14 years. A very practical undergarment is this style which combines bloomers with an underwaist.

No. 9706. Little Boys' Suit.—Cut in sizes 1, 2 and 4 years. This cunning little suit wears a straight overblouse which permits one to glimpse only the lower edges of the tiny trousers.

No. 9724. Girls' Dress.—Cut in sizes 6, 8, 10, 12 and 14 years. A variation of the popular middy dress is given here showing a new treatment of the blouse.

No. 9717. Ladies' Two-Piece Skirt.—Cut in sizes 26, 28, 30 and 32 inches waist measure. The skirt is cut in two sections, the lower forming pockets and trimming.

No. 9726. Girls' Dress.—Cut in sizes 4, 6, 8, 10 and 12 years. Built on the lines of a coat dress is this style, which prefers the Empire waist line.

Formulas for Tanning.

So many requests are being received for tanning formulas that it is found advisable to re-publish the following:

In preparing a hide for leather, the first step is to get rid of the hair, which is accomplished by soaking the hide in lime water. Make the lime solution by adding a quart of unslaked lime or two quarts of hardwood ashes to five gallons of soft water. Remove the hide as soon after the animal is dead as possible, and place it immediately in the lime solution. If the hide has become stiff, soak it in soft water until it is as soft and pliable as a green hide, before putting it in the lime water. When the hair begins to slip, scrape it off with the dull edge of a butcher knife, working towards the tail from the neck. For smooth-grained leather, be careful not to break the thin, film-like membrane just over the real skin. The hair will begin to slip within two or three days after being put in the lime solution. After scraping off the hair, it is important to rinse the hide well, to free it of the lime water.

The tanning solution is made by boiling together a quart of soft soap and a cupful of fish oil, until the latter cuts the soap. To this mixture add two cups of coal oil, half a pint of alum, half a pint of arsenic, and six quarts of soft water. Boil it for a few minutes, and let it cool down to a luke-warm temperature before immersing the hide. This solution is for moderately heavy cow hides. For lighter hides such as from dogs, calves or colts, the alum and arsenic are not needed, and only half as much coal oil in two gallons of water is used.

A satisfactory way to make leather is to cut the hide into long strips about six inches wide, before tanning as they are easier to work than a whole hide. Immerse these in the solution at a temperature of about 90 degrees when the hide is first put in, and keep the solution in a warm room, preferably behind the kitchen stove or beside the furnace in the basement. Every two or three days the strips are removed, washed in soapy water, and stretched until nearly dry. A convenient way to stretch is for two men to pull the pieces around a post, and work until each piece is about dry. If on drying the hide becomes stiff, it has not cured enough and must be placed back in the tanning solution, which should be warmed to about 90 degrees. Do not have it much warmer, as leather burns easily. From ten days to two weeks will be necessary for curing. The tanning must be kept up until the hide or leather is soft and pliable. If light strikes clear through it when a small strip is held up, it has cured enough, but if it shows light only in spots it must be cured some more.

Tanned hides should receive a treatment by working into them neatsfoot oil until the leather is soft and pliable. Heavy hides may be a little stiff after tanning, but may be softened by rubbing in the oil, which, by the way, has just as beneficial an effect on farm harness.

The bark method of tanning is effective, and makes a high quality of leather, but it takes longer. A peck of the inner bark of the oak, willow, hemlock or chestnut, is cut up and added to about three gallons of boiling soft water. Allow this to steep in a cavered vessel, and when cool remove the bark. For sole leather, place the pieces in flatwise between the layers of bark. Occasional re-heating of the solution is necessary, and fresh bark must be added from time to time. This process makes excellent leather for either soles or harness.

Tanning Fur Skins.

For home tanning, the following formula has been recommended for tanning any fur skins. It consists of six pounds of salt, eight ounces of saltpeter and four ounces of borax. These are powdered up quite finely and put in sixteen quarts of tepid soft water. The water should be stirred until all of the ingredients are dissolved. The mixture is then put into a barrel, and is diluted by adding sixteen quarts of sour buttermilk. After it has been stirred thoroughly, thirty-two ounces of sulphuric acid are added. Care must be taken to stir the mixture while the acid is being poured in. The mixture will probably cost around 50 to 75 cents, and if more or less of it is made, the same proportions should be used. If the sour buttermilk is not available, skim milk or sweet milk may be used instead, except that twice the quantity will be necessary. The solution will keep for a long time, and may be used for all fur skins.

Dry skins must be soaked until they are soft. The fur side should be salted a little before being put in the water. Green skins need soaking for only a few hours. After the skins are perfectly soft and pliable, they should be spread out on a board and all the flesh removed. After this they are ready for the tanning liquid. The skins are then put in the tanning liquid and left for about an hour, after which they are pulled out and hung over a barrel for a short time to drain. Following this, they are put back into the liquid again for an hour and hung up to drain again, and then put back again. The process is repeated until the hide is tanned. The number of soakings required depends upon the hide or skin being tanned, but nearly all hides will tan with from three to seven soakings. During the process, the hides should be pulled and stretched to help out the tanning.

After the hides are tanned, wash them in a suds made of eight gallons of water and two ounces of soda. Both the fur and skin sides should be rubbed with the soap and then scrubbed. It is important to rinse out all the soap. Before being hung up to dry, a little kerosene may be rubbed on the skin side. During the drying process, it is very important to pull and stretch the hides at frequent intervals. Otherwise, they will be hard and stiff. The working process can be done by pulling or stretching the hides around a post.

Care should be exercised in using only pure salt. If the salt contains alum it will seriously injure the skins.

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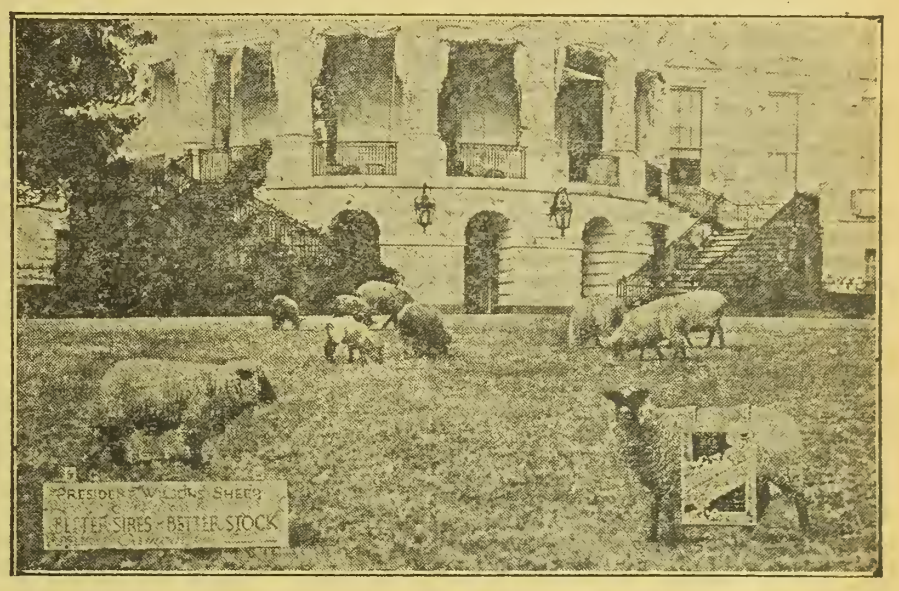


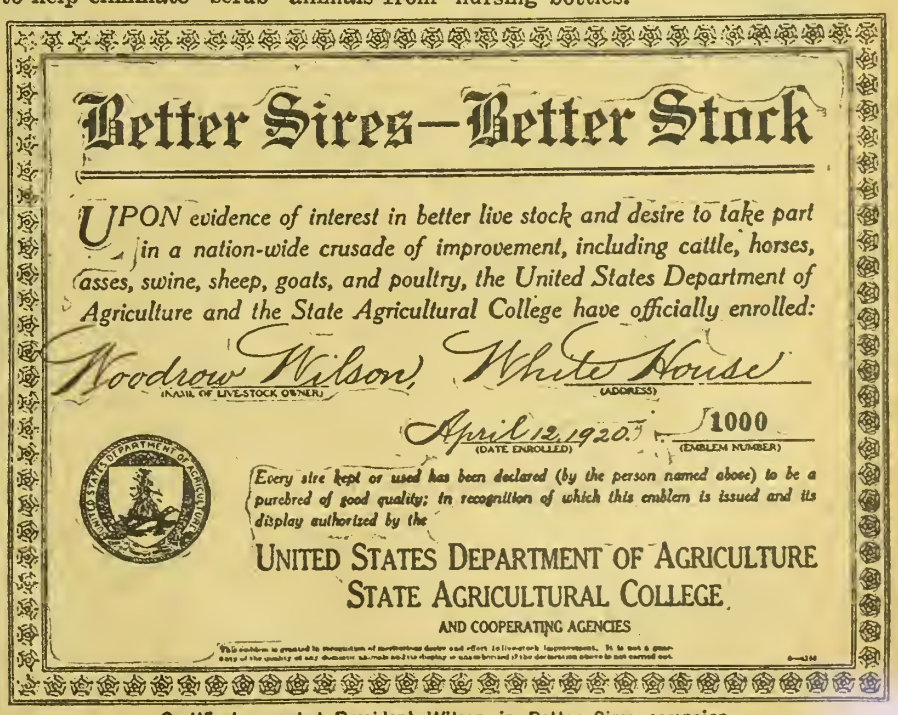
Some of President Wilson's famous flock of 48 sheep on the south lawn of the White House. This flock has been listed in the "Better Sires—Better Stock" campaign instituted by the U. S. Department of Agriculture and carried on with the co-operation of the states for the improvement of American livestock. Photograph taken by special permission.

White House Sheep.

THE accompanying photographs, taken on the White House lawn by special permission, shows some of the famous flock owned by President Wilson, which has been enrolled in the "Better Sires—Better Stock" campaign, carried on by the United States Department of Agriculture and the state agricultural colleges. When the president enrolled in the movement for livestock betterment some weeks ago, he received an emblem similar to that presented to hndreds of other livestock owners in all parts of the country, who have agreed to help eliminate "scrub" animals from American herds and flocks by using, for breeding purposes, only purebred sires of good quality.

The campaign applies to cattle, horses, asses, swine, sheep, goats and poultry. Experts believe it will effect a general betterment in American livestock that will add many millions of dollars to the country's resources.

President Wilson's flock, which is always an object of special interest to Washington visitors, consists of 48 animals, including 21 lambs. Two of the latter are orphans which the kindly keeper of the grounds has raised on nursing bottles.



Better Sires—Better Stock

UPON evidence of interest in better live stock and desire to take part in a nation-wide crusade of improvement, including cattle, horses, asses, swine, sheep, goats, and poultry, the United States Department of Agriculture and the State Agricultural College have officially enrolled:

Woodrow Wilson (NAME OF LIVESTOCK OWNER) White House (ADDRESS)

April 12, 1920 (DATE ENROLLED) 1000 (EMBLEM NUMBER)

Every sire kept or used has been declared (by the person named above) to be a purebred of good quality; in recognition of which this emblem is issued and its display authorized by the

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STATE AGRICULTURAL COLLEGE
AND COOPERATING AGENCIES

Certificate granted President Wilson in Better Sires campaign.

Profitable Farm Poultry

W. E. VAPLON.

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, Western Farm Life, Denver, Colorado.

Meeting of the A. P. A.

The past two years have been very prosperous ones in practically every branch of the poultry industry. If these good times are to continue, it will be only because the poultrymen of America organize to protect their own industry. Practically every big industry in the nation today has organized to protect themselves by reducing the cost of production, creating new markets, improving the quality of their products, and increasing their sales prices. As an American poultryman are you contributing and going to contribute your share toward this end? These questions will all come before the meeting of the American Poultry Association to be held in Kansas City, Mo., August 10 to 13. It is your duty to be present.

There were never so many problems of vital interest to every poultryman in America as there are to be discussed and acted upon at the coming meeting of the association. It is vitally necessary to the future of the industry that every one, who possibly can, be present and take part in the program and in the proceedings of the convention. Whether you are a member of the association or not, you should be present.

Harry Collier and William Coates, of Washington, will discuss the Chinese egg problem, and plans proposed to prevent Chinese eggs from competing with eggs produced by American poultrymen. This is a question that affects the poultry industry on the western coast, and, in fact, the entire nation.

Some method of creating a national advertising fund to advertise the food value of poultry and eggs, and to encourage the consumption of poultry and eggs, and to show their relative qualities compared with other food products, will be proposed at this convention. It may be that we can work out some method whereby our poultrymen will be taxed 2 cents per hen on each farm, or some other method of raising a national fund for this purpose. This has been done by the orange growers, the raisin growers, the National Dairy association, the National Apple association, the National Peach growers, and many other agricultural products are being pushed and advertised and markets created through an advertising fund of this nature. There is nothing that will come before the association that will mean so much to the industry and that will help to hold up the price of eggs and poultry as will an advertising campaign of this sort. This question will be discussed and some action taken with reference to same, and the whole nation organized with this object in view. This work alone is worth your trip to Kansas City to attend this national convention.

The Co-Operative Poultry associations as they are conducted in California and some of the Pacific coast states have proven a remarkable success. They have put the poultry industry in those states on a sound financial basis, and insured profits to the poultry producers. The manager and organizer and some of the members of these associations will be here to tell the American poultrymen how they are doing the work and plans will be worked out for organizing similar associations in the various states of the Union.

The poultry breeders of the country are beginning to recognize the absolute necessity of considering the importance of our present knowledge of characters indicating production values in poultry in judging birds and in development of standards and score cards.

It is a known fact that the standard revision committee proposes to include many of the characters indicating egg production in the next revision of our Standard of Perfection, and you should by all means attend this convention and do what you can to further encourage the combination of all good points in our standard varieties.

The breeders of America are making wonderful progress in breeding birds for both exhibition points and laying characteristics, and the production of the average hen in this country has been increased during the past few years from 50 per cent to 100 per cent. We should include in our next Standard of Perfection all of these characteristics, which will in no way injure the standard bred fowls, but will improve their qualities and make them even more profitable from every point of view.—T. E. Quisenberry, Chairman Convention Committee, Kansas City, Mo.

Trouble With the Hatch.

I bought an Ironclad incubator this spring. I placed 168 eggs in it the first setting and followed directions fully. When we tested eggs we found thirty-five perfectly clear. About thirty hatched but they were so weak all died but five. The second hatching I placed 160 eggs in. When we tested them we took out forty eggs. At the suggestion of some of the neighbors, I kept the temperature one degree higher and kept some moist sand in the bottom of the incubator and sprinkled the eggs about every other day. Just eighteen hatched this time. They were more fluffy than the first, but about as weak as the first for a few days. Six of them died from weakness. Is this due to infertile eggs? If so, how can we remedy it? We have thirty hens and two roosters. They have a large range, so get all the green stuff there is. We have the incubator in the house. The temperature kept pretty even. Most of the neighbors had the same luck we did.—A. E. W., New Mexico.

We cannot even guess at the cause or causes of your poor hatches. If the same eggs you put into the incubator hatch well under hens, it might seem that the machine or the operator is at fault; what you say of the flock inclines to the belief that the stock is not the trouble; on the other hand, there are too many infertile eggs, if the number you mention are really infertile. We have these suggestions to make: Keep one male locked up all the time, alternating every few days; remove the incubator to a different place unless you are absolutely sure that where you now have it is the best place you have; test some eggs under hens. Should be glad to hear from you as to better results.—W. E. V.

Variety Needed for Fowls.

I'm interested in poultry and desire some information in that line. I'm told that egg producing can be scientifically controlled so that hens will lay at any season which you most desire them to. In other words, they can be forced or retarded in their laying. If this is true, please tell me where I can secure proper instructions regarding same.

Our hens are a mixed lot. Buff Orpington, Rhode Island Reds and Plymouth Rock; they have laid well for the past three months, but with good cockerels, one to each fifteen hens, we are unable to secure more than one egg out of five that are fertile. Could you tell me why this is so? They have large range and the only grain we feed is milo maize, which seems to be a great egg producer. They have all the grain they can consume.—H. H. B., Otero county, Colo.

A good hen will lay 20 eggs in March, 12 in June, a very few in September and practically none after that time until about February. If we could control the egg yield does it not seem reasonable to suppose that we would get the eggs when they are highest in price? Hens lay more or less eggs while they are dropping their feathers, but few or none when new feathers are growing, hence the shortage during the molt. The only way to get a goodly number of eggs during the time the old hens are molting is to have pullets fully developed at that time and give them the best of care. If your fowls were confined to small quarters we might attribute the infertile eggs to the feed; even though they were on free range it is very likely that they are unable to find much to provide them with enough variety. We suggest wheat, or at least bran, the latter fed once a day mixed with plenty of milk. Milk to drink would also be of benefit until the time that insects become plentiful. Fowls should have a variety of feeds to do their best; the greater the variety the better.—W. E. V.

A PIECE OF TABLEWARE may be solid silver without the "sterling" stamp, the accepted "Hall Mark" of quality.
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FOR SALE—ONE WELL MARKED REGISTERED Holstein bull calf. Loving White Wyandotte Farm, Siloam Route, Pueblo, Colo.

FOR SALE—A SMALL HERD OF HIGH GRADE Guernsey milch cows and heifers. Also a few Holsteins and reds. Geo. J. Gordon, Bennett, Colo.

FOR SALE—REGISTERED SHORTHORN AND polled Durham bulls and heifers. One double standard 4-year-old roan real herd bull. Please don't write unless you want to buy. J. H. Held, Sterling, Colo.

PURE BRED AYRSHIRE BULLS, FIVE AYRshire bulls of Cavalier's breeding, from 3 to 18 months old, price $100 to $150. I will also sell Cavaliers Rosewelling 3-year herd bull. W. M. Cady, Flat Top, Colo. Shipping point, Limon, Colo.

REGISTERED HEREFORD BULLS—THIRTY bulls 12 to 24 months old, of the best Anxiety breeding, hardy and in good condition, with best of bone and ready to go on the range. One 2-year-old bull, full brother to champion cow at Denver, and a 5-year-old bull, the sire of most of the above. Priced for a quick sale. J. O. D. Ranch, Aroya, Colo.

HOGS

FOR SALE—REGISTERED BIG TYPE DUROC Jersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

THOROUGHBRED DUROC JERSEY BOAR PIGS, two months old, A No. 1 blood. No more gilts. Clear Springs Farm, Route 1, Box 31, Golden, Colo. Phone Arvada 119 J 2.

FOR SALE—POLAND CHINAS, BIG TYPE BRED gilts, young boars, weaned pigs; all registered and the real big boned kind; prices reasonable. F. L. Toliver Stock Farm, Ft. Collins, Colo.

BUY YOUR DUROCS AT WEANING TIME, AND make the big profits yourself. I have prize-winning gilts and boars a few weeks old sired by champions that should be worth several hundred dollars each this year. Write for prices. J. N. Caldwell, Willow Grange Farm, Littleton, Colo.

REGISTERED BIG TYPE DUROC JERSEY hogs. We are now taking orders for boars and gilts of March farrow for May and June delivery. Have one fall boar left. All sired by Orion Cherry King 15th, and J.. O. D. Joe Orion, out of the best berd sows. Write for prices. Money back if not satisfied. J. O. D. Ranch, Aroya, Colo.

HORSES.

FOR SALE—REGISTERED BLACK PERCHERON stallion, coming 4 years old; sure foal getter; perfectly sound and easy to handle; for quick sale will accept $600. J. B. Benedict, Wyldemere Farm, Littleton, Colo.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

SOLDIERS—640-ACRE HOMESTEADS, SEVEN months residence. Duff, Casper, Wyo.

IF YOU WANT TO SELL OR EXCHANGE YOUR property write me John J. Black, 33d St., Chippewa Falls, Wis

LARGE SHEEP, CATTLE, FARMING RANCH, 50 miles east of Denver. Terms if desired. C. G. Parrett, Byers, Colo.

600-ACRE RANCH, TWO SETS OF GOOD IMprovements, 250 under ditch, some water, near Brighton; fine dairy or stock ranch; fine beet ground; 1 mile of beet dump. Address Owner, Box [illegible] Brighton, Colo.

WANTED—TO HEAR FROM OWNER OF GOOD farm for sale. State case price, full description. D. F. Bush, Minneapolis, Minn.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description and cash price. Morris M. Perkins, Columbia, Mo.

SHAWNEE, OKLAHOMA, CENTER OF A GREAT farming country; write for free agricultural booklet. Board of Commerce, Shawnee, Oklahoma.

FARM AND CATTLE RANCHES—CHOICE LIST. If interested call or write F. E. Wrockloff, Merchants Bank, Seventeenth and Curtis Streets, Denver, Colo.

REAL ESTATE WANTED—SELL YOUR PROPerty quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., Dept 11, Lincoln, Nebr.

OWING TO CHANGE OF OCCUPATION, I WILL sell my ranch and full blood Angus cattle and Percheron horses, or any portion of them. Address G. F. Lucore, Arriba, Colo.

FOR SALE OR TRADE—GROCERY AND MARket in most prosperous mining town in Colorado; approximately $20,000 deal and all clear. Will trade for improved farm. Box 218, Breckinridge, Colo.

FOR SALE—40S ACRES, 160 IN HAY AND grain, rest pasture; good house and outbuildings; good water right. Horses, tools and 30 head cattle. For full particulars write J. D. Sterner, Aspen, Colo.

320-ACRE FARM FOR SALE CHEAP—6 MILES south of Fowler in Otero county, Colo. All good land; 40 acres has been in crop. Price, $12.50 per acre, one-third cash. The Irrigated Farms Mortgage Co., Cooper Bldg., Denver, Colo.

MANY KINDS FINE FARM LANDS FROM which to select. Markets, climate, schools and roads good. State in first letter (1) crops and (2) livestock you want to raise; (3) acreage wanted; (4) improved or unimproved; (5) terms wanted. Descriptions can then be sent to suit you. Railroad Farm Bureau, San Antonio, Texas.

WYOMING WANTS FARMERS—WE HAVE 100,000 acres of irrigated land from $40 to $80 per acre, perpetual water rights, easy terms, bumper crops of alfalfa, grains, sugar beets, vegetables; near towns, railroads, markets, and sugar factories. Write for resource map, giving reliable information, to Wyoming State Board of Immigration, 315 State Capitol Building, Cheyenne, Wyoming.

ATTENTION STOCKMEN — WE HAVE TWO stock ranch bargains. Just what you are looking for; each ranch comprises 320 acres deeded land with substantial improvements and large acreage under irrigation, and in alfalfa, timothy, clover hay, unlimited outside free range, with 4,000 acres of leased land under fence for fall pasture. These ranches are located three miles apart, 125 miles from Denver. Good shipping point, big money makers. Prices $12,000 and $13,600 on good terms. See us at once for these. Reynolds, Covey & Reynolds, 625 Exchange Bldg., Denver, Colo.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted

WRITE FOR DELIVERED PRICES ON CEDAR posts. Pay after unloading. J. B. Overton, Sagle, Idaho.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

RED CEDAR SPLIT FENCE POSTS—GUARANteed full size and A1 quality. You pay after unloading. Send for booklet and prices delivered your station. Kirk Company, Box 1138-S. Tacoma, Wash.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

RAZOR HONING, 50c; SHEARS, BLADES, 2½c and 5c; hand finish, good workmanship. M. L. French, Fremont, Nebr.

LISTEN—I CAN PUT A STOP TO ALL YOUR binder and header canvas trouble. Send at once for literature. My guarantee is outstanding. Address G. F. Lucore, Arriba, Colo.

HATS CLEANED.

OLD HATS MADE NEW. S. M. BELWOOD, 1542 Court place, Denver.

TOBACCO.

TOBACCO—KENTUCKY'S BEST "OLD HOMEspun" chewing and smoking. Direct from farmers. Trial offer, 2 lbs. postpaid $1.00. Kentucky Tobacco Assn., Dept. 50, Hawesville, Kentucky.

PATENTS.

PATENTS—BOOKLET FREE. HIGHEST REFERenees. Best results. Promptness assured. Send model or drawing for examination and opinion. Watson E. Coleman, Patent Attorney, 624 F st., Washington, D. C.

HONEY.

"THEBESTO" ROCKY MOUNTAIN HONEY, light colored, thick, fine flavored; per can, five pounds net, postpaid, anywhere west of Ohio river, $1.50. Send remittance with order. The Colorado Honey Producers' Association, Denver, Colo.

MACHINERY.

FACTORY CLOSING OUT STOCK—HEADER forks, hay forks, manure forks, bundle forks; your selection, $9.00 per dozen. Rush your order. Free literature showing pictures of forks, assorted shovels and spades. Process Shovel & Fork Co., Salina, Kan.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

INCOME TAX BOOK.

MAKE INCOME TAX RETURNS ON THE INventory method. Use a practical cattle record-book and keep a complete record of your cattle. The same book good for a number of yedrs, $3.50 postpaid. Diamond Peak Ranch Co., Tie Siding, Wyoming.

Making Orchards Profitable in Niagara County.

(Continued from Page 5.)

a central packing house is usually built than on an individual farm. Greater efficiency is secured where each one is trained to do one thing at the packing house. This produces skill and to this we can attribute much of the successful results obtained. System in the packing house reduces expense. The average expense of packing apples in a three-bushel barrel in a normal crop year runs less than 20 cents. In 1919, with but little more than one-third of a crop, it was 22 cents per barrel.

Packing Houses.

Niagara county has quite a number of cold storage plants with a capacity of from 30,000 to 40,000 barrels. Some of the central packing houses have been built around or near these cold storage plants, as at Ransomville and Burt, New York. It has been demonstrated in Niagara county that a building 50 feet wide and 100 feet long is quite a satisfactory size for a central packing house. It is quite desirable that this building should be placed along a side track, with numerous doors, so several cars can be loaded at the same time. A platform which extends out from the building close enough to just give good clearance of cars facilitates loading. On the receiving side, there should be plenty of doors to facilitate quick handling of fruit to the grader and its workers. On the receiving side should be a good roof-covered platform at least 10 to 12 feet wide. It affords temporary storage for considerable fruit, while clearing the grader of a given grower's fruit preparatory to receiving his neighbor's. This kind of a building with one mechanical sizer is prepared to handle 500 to 600 barrels of apples per day, or 8,000 to 10,000 bushels of peaches. Such a plant is the one at Ransomville and Burt. These plants are prepared to handle 20,000 barrels of apples and 50,000 bushels of peaches.

While in the orchard districts we saw the central packing plant being built at Johnson Creek. This is to be the usual size. While there the members of the association were called on to go to the railway station, three miles away, to bring building material that had been delayed in arrival. By so doing, the regular force could be kept going, if all the lumber could be brought over in one day. The response was so generous that more men volunteered their services with teams than there was lumber to haul. Such is the sincere spirit of co-operation shown through all the work of these associations. The last building under construction is costing more than those built in previous years on account of high cost of labor and material. The Johnson Creek Association building will have common storage for several cars in a 10-foot basement under the whole first floor and has the usual arrangement for the ground floor common to the other packing houses in the county. This plant is located on an improved state highway instead of a railroad, but is very central for the district.

Water Witching a Trick.

Western Farm Life:

In the June 1 issue, A. A. Weston registers a decided objection in regard to water witching being a superstition. He is right, water witching is no superstition. It is a trick, a trick that is not always successfully played. Any one that understands the trick can let the switch flop down towards the earth no matter how tight it is held in his or her hands, but to play that trick successfully, he must know something about the contour of the country he is working in. He must study the wells that are already in that locality, that is the surface formation, then he can let his switch spring to the ground when he gets to where the ground looks favorable. It is the spring in the forked stick, the way it is held, that causes it to flop to the ground. There is no attraction in the earth that draws it to the earth. The least exertion of your muscles, which no one can notice, causes the forked end of the stick to flop downward. I can show any one in less than a minute how it is done. The trick itself is no superstition, but those that believe the stick is drawn to the earth by the attraction of water in the earth, or by some hocus pocus make up of the one that holds the switch, all those must be classed superstitions. I have known a great many dry holes which have been sunk because the one playing the trick was not well enough informed to play it successfully.

Some 25 years ago one of my neighbors in Missouri sank a hole 175 feet deep on the strength of this guess trick. A few days later I showed him how the trick works, with the same stick this trickster used. I also showed him without a switch where he could get water on his place, which he got by going less than 25 feet, but he had to haul it to the house. A year ago Mrs. K. was back there and he was still hauling water from the well I located for him without a stick.

It would be well for the people in general if the so-called water witches would add another top cross of honesty, or study the water proposition better in the locality they are operating in, then they would not fool themselves so often nor so many people. I know a locality in Missouri where there are more water witches than there are yellow dogs, and there are more dry holes there than there are wet ones. Strange as it may seem with the many failures, no amount of argument will convince a believer in the trick that there is nothing in it. The only way to convince him is to show him how the trick is done.—J. D. Kaufman, Kalispell, Mont., R. F. D. 1.

Guernsey Century Sire.

Governor of the Chene is the first Guernsey bull to become a century sire. He has 264 registered daughters, 100 of which have qualified for advanced registration. This bull has 68 sons registered in the books of this association, 28 of which have qualified for advanced registration.—H. A. L.

Livestock Field Notes.

If you are looking for some big-boned Durocs of the right breeding, read the ad of R. C. Van Scoy & Son of Highland Station, Route 5, Denver. You will find the ad in the Livestock Department of this issue.

The Hereford Corporation of Wyoming are offering some excellent young bulls in car lots, and also some fine heifers and cows. Read their ad in this issue.

L. G. Davis of Saratoga, Wyo., has for sale 35 two-year-old heifers. These heifers are of the best Anxiety breeding from such sires as Beau Carlos 2nd, Bonnie Weston, and Wyoming 4th. Read the ad in this issue of Western Farm Life.

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

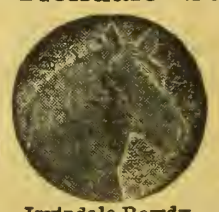
Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.

C. F. Burke, Mgr. Pueblo, Colo.

Glendale Stock Farm



Irvindale Rowdy Grand Champion Belgian Stallion Chicago, 1917, Denver, 1918 and 1919

Breeders of

BELGIAN HORSES and POLLED HEREFORD CATTLE

Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.

Glenrose Farm Herd

REGISTERED DUROC JERSEY HOGS.

Bred Gilts and Weaned Pigs. Also a few good boars for sale. All big-boned.

R. C. VAN SCOY & SON,

Highland Station, Route 5 Denver, Colo

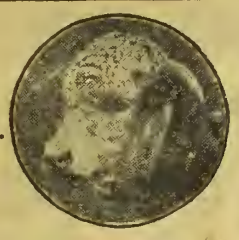
REGISTERED BIG TYPE DUROC JERSEY HOGS

Am offering some good Spring Gilts and Boars. Also some good fall gilts. Write for prices and breeding.

August F. Borgmann,

R. F. D. 4. LONGMONT, COLO.

Registered Herefords



2 LOADS COMING 2-YEAR-OLD BULLS.

3 LOADS YEARLING BULLS.

These are all Extra Good.

Write us about bred heifers and cows.

We are offering some of our good females that will go well in any good herd. If you are starting in the Registered Hereford business see us. We can help you.

Hereford Corporation of Wyoming

Box 876, Cheyenne, Wyoming.

DENVER OFFICE: 406 LIVESTOCK EXCHANGE BLDG.

RAYMOND S. HUSTED, Manager.

DeWITT HEREFORDS

HERD BULL—MISCHIEVOUS JR., by THE HEIR

His dam is Mischievous 3rd, a full sister of BEAU MISCHIEF and the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

L. G. Davis Herefords ANXIETY BRED

Sires in Service:

The Great BEAU CARLOS 2nd

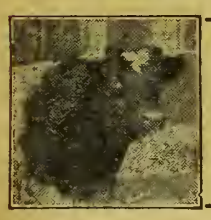
BONNIE WESTON, by Bonnie Brae 15th

WYOMING 4th, Champion Senior Yearling Denver, 1919.

Have for sale 35 two-year-old heifers.

We have a few High Class Yearling Bulls For Sale.

L. G. DAVIS, Saratoga, Wyo.



ARE YOU GETTING READY?

Remember that this Association offers $150,000.00 in cash prizes for Shorthorns in 1920. Add to this the amount offered by the various fairs and shows and the aggregate is around $300,000.00. Now is the time to be fitting your entries. It pays to show, aside from the prize winnings.

American Shorthorn Breeders' Association

13 Dexter Park Avenue Chicago, Illinois

The Divide Herd

Young Bulls

We are now offering at very reasonable prices some good Shorthorn bulls suitable for small herds. Fall calves and a few yearlings priced for quick sale. Full particulars on application.

THE ALLEN CATTLE CO.,

SHORTHORN BREEDERS,

Colorado Springs, Colorado

Verdun Fairfax, 547803.

FOR IMMEDIATE SALE.

Six young bulls of Fairfax breeding, $300 to $500. Two choice herd bulls, and Fairfax Heifers. Also few choice heifer calves. All stock disease free, and guaranteed.

Prompt Attention to Inquiries.

SNEFFELS LAND & CATTLE CO.

RIDGWAY, COLO.

Cornforth Live Stock Co.

ELBERT, COLO.

Forest Glen Shorthorns

Our sales have been good the past year and still offer a few choice animals for sale.

BEAU ASTER

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145). Sire of the dams of these champions.

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER

Holyoke, Colo.

COL. H. C. JENNINGS.

Purebred Livestock

AUCTIONEER

Also conduct Sales of Real Estate.

534 17th St., Kenmark Hotel.

Phone M. 6870 Denver, Colo.

WILLIAM UPP

Livestock Auctioneer

Purebred Hogs a Specialty.

DEER TRAIL, COLO.

H. C. DENNIS, Auctioneer

FORT MORGAN, COLORADO

Registered Shorthorn and Jersey Cattle

Real Estate Sales Conducted. I can sell your real estate if it can be sold.

Wire at my expense for dates.

Phone: Res. Morgan 155J; Office Morgan 15

HIGH CLASS JERSEYS

Our two cars of Jerseys bought in the east have been delayed on account of strikes. We expect them soon now. Some great cattle.

We have a few splendid bull calves, most of them by the great Majesty's Feather Lad; and we need the room, so prices are right.

Out of Duroc boars, but have a couple of bred gilts to go.

McClenahan & Dixon, Greeley, Colo.

I Am Offering FOR SALE

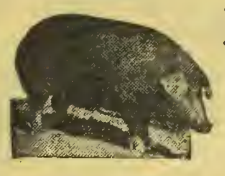
this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual—from one of my producing advanced registry cows.

WM. A. PURVIS,

JOHNSTOWN, COLO.

JAMES PONTIAC DEKOL ORMSBY



Registered Duroc Jerseys.

Edbrooke Durocs - Green Acre Farm

My Herd Boars Are Defenders of Col. Breeding.

Green Acre Defender 166505. Edbrooke's Defender 165263

The Biggest of the Big Type.

My Sows Were Prize Winners Denver 1920.

The Better Your Stock, The Better Your Returns.

H. W. J. Edbrooke, Prop., 6th & Wadsworth, Denver

Shorthorns That Milk

Victoria 228667

R. of M.—15,175 Lbs., 546.3 Lbs. Butterfat. Class A. Only a few cows of this breed exceed this record in Class A official test.

Bulls and Heifers for sale at Reasonable Prices.

The Pine Valley Dairy and Farms Company

Seeley G. Rose, Manager. COLORADO SPRINGS, COLO.

Wallie Farm Reg. Holsteins

State Milk Record

Established by Mystic Polkadot Lottie, junior 2-year-old, 540.4 lbs. milk in seven days. Best day's milk 83.6 lbs. Fourteen other excellent A. R. O. cows developed recently. All records made without fitting or forcing.

A number of wonderful records will unquestionably be made on these cows at next freshening. Take advantage of this fact by buying a Wallie Farm bull calf now. A few 2-year-old heifers for sale.

Herd Sire KING JOHANNA SEGIS PONTIAC

"His sisters have broken over 100 world's records."

W. G. Foster, Owner, 4800 So. Penn. Phone Englewood 122, Denver.

MILK RECORDS

Do Not Replace Straight Bates Shorthorn Blood FOR

Straight Bates Shorthorns are the "foundation source' of the Milking Shorthorns of England and America.

The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY

GREELEY, COLO.

MILKING SHORTHORNS.

All Cows Officially Tested. 125 in Herd.

Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.

THE BONVUE FARMS CO.,

Stockyards, Denver, Colo.

For Sale --- Registered Shorthorn Calves

EITHER SEX—6 WEEKS OLD—$50.

The mothers of these calves have three crosses on top of their pedigree which trace to Choice Goods, the St. Louis World's Fair Grand Champion.

The sire is a grandson of the famous bull March Knight.

Your Chance to Get Some Real Shorthorn Blood.

OTTO RAMSTETTER, Golden, Colo.

WHO NEEDS A PERFECT INDIVIDUAL TO HEAD THEIR HERD?

Son of a 23.23 lb. 3-year-old heifer—an unusually good yearly producer—by a son of our $5,000 bull—out of the 30-lb. cow who produced the great show cow and State Champion Junior 3-year-old Lilu Segis Pontiac, 34.25 lbs. butter in 7 days.

He is about one-half white, and a beauty. Ready for light service. The first check for $350 takes him.

SANBORN MEADOWS,

MRS. R. G. DOUGLAS. RUSH, COLO.

FOR SALE.

Sons of Sir Johanna Bess Segis

who combines in the closest degree the blood of **King Segis Pontiac Count** and **Piebe Laura Ollie Homestead King.** Send for their story.

PAHGRE VALLEY RANCH,

MONTROSE, COLO.

REGISTERED JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.

H. J. VAUGHN, KIRK, COLO.

FOR SALE

Beginner's young herd of REGISTERED HOLSTEINS, consisting of nine females, herd bull yearling and bull calves.

W. B. & E. B. Downs,

R. F. D. 1. Yuma, Colo.

Bargains in Bred Sows

20 yearling sows bred to farrow in August and September, priced to sell. All bred to our prize winning Crusader, winner at the Denver show Shipped on approval and guaranteed.

"Daly's Durocs," Cambridge, Nebr.

Straight and Polled Shorthorn Cattle

Valentine's Last X12316 452005 at head of beef herd. Claywood White 427350at head of milk type.

STATE INDUSTRIAL SCHOOL

Golden, Colorado

TIRES

TWENTY-SEVEN years is a long time to be making tires. But not any too long to find out the physical elements that make *quality*—and to give them to the tire-user.

The makers of G & J Automobile Tires were building pneumatics before any of us had ever seen a motor-car.

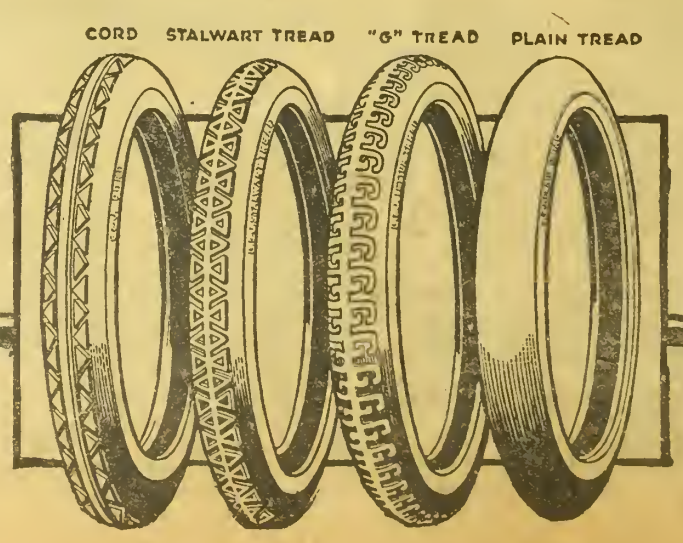
Laying down correct principles of tire performance and contributing continually to those pneumatic tire developments which are standard today.

The strongly established position of the G & J Tire Company has more to show by way of result than even good tires.

It has the *square-dealing human touch with car owners* through a selected national group of hardware merchants and dealers in auto supplies.

A contact with the public represented by retailers who are fitted to be tire men according to the G & J idea that *reputation* obligates a *service.*

G & J TIRE COMPANY, *1794 Broadway,* NEW YORK



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WESTERN Farm Life

Vol. XXII. *Denver, Colorado, July 15, 1920.* *Semi-Monthly*

LOOKING OVER THE HEREFORDS ON THE J. D. CANARY RANCH, LITTLETON, COLO.
—(Photo by Lindgren.)

Littleton Livestock Tour.

The stockmen near Littleton, Colo., recently staged a tour of some of the breeding farms of the county, under the leadership of H. Bert Cave of Littleton. Some fifteen cars loaded with interested persons left the First National Bank of Littleton at 1 p. m. on June 11. Each car was labeled with a card bearing the inscription: "Littleton, Colorado. Livestock Center."

The first place visited was that of Mr. Cave, a beautiful farm just a little way from the city limits of Littleton. Here we saw some of his excellent Belgian mares. Mr. Cave showed eight mares at the stock show last winter and their total weight was around eight tons. The Belgians on this farm are of the best and are well known among Colorado horsemen. Mr. Cave also breeds Hereford cattle and Duroc Jersey hogs. His Herefords were on another farm, so we did not get to see them, but his hogs were a pleasing sight on alfalfa pasture. He mentioned that eight sows last year brought a return of $1,600.

The arrangement of the pastures on this farm is very practical. They are divided into divisions of about five acres and each division is connected with a lane leading from the barnyards, so that the shifting from one pasture to another is very easily done. The dairy cows, five in number, were running on alfalfa pasture. The herd gives twenty-seven gallons of milk daily. The question was asked Mr. Cave, how he managed to get by without bloat. He replied that he pastured hogs with the cows and has no trouble from bloating. Both Mr. and Mrs. Cave are enthusiastic over livestock and their farm equipment is ideal throughout.

The next farm visited was that of J. B. Benedict. Here they are developing Milking Shorthorn cattle and Duroc Jersey hogs. One cow in this herd produced over 1,600 pounds of milk last month and at the rate she is going at present, will equal that record again this month. There are 43 head of dairy Shorthorns on the place headed by a Bates bull, Royal Glenside.

The beautiful home and farm of J. D. Canary was the next stop. Mr. Canary believes in beautifying the landscape around his residence. It is surrounded with a beautiful lawn, through which the driveway angles. Beds of flowers add to the beauty of the landscape. This, however, was not the prime object of our visit. Below the lawn we found the Herefords of this noted breeder. His barns are extremely neat and conveniently arranged. Every modern equipment known in livestock breeding was found on the farm. Among the barns was one that had just been completed in which the show animals are housed. This barn is equipped with a cement floor and mangers and iron pipe stalls. Adjacent to this is a cement dipping vat easily reached from this barn.

Some very fine Herefords were on display. Mr. Canary's breeding runs largely to Beau Mischief and Repeater lines. His Repeater 63rd bull is an exceptional individual and is siring some fine calves. Mischief Maker 12th by Beau Mischief shows good conformation and is also a proven sire. Mr. Canary had just made a sale of a bull to Mr. Evans of Nebraska for $5,000.

The next place visited was the Ken-Caryl ranch. This is a 12,000 acre property owned by John C. Shaffer of the Denver News and Times. This is one of the prettiest spots in Colorado. There is a great deal of land fit only for pasture. However, there is 400 acres in alfalfa, which is ample to supply a great deal of winter feed for stock. The farm is managed by F. J. Smith, who stated that they are just starting to raise Herefords. They have a small

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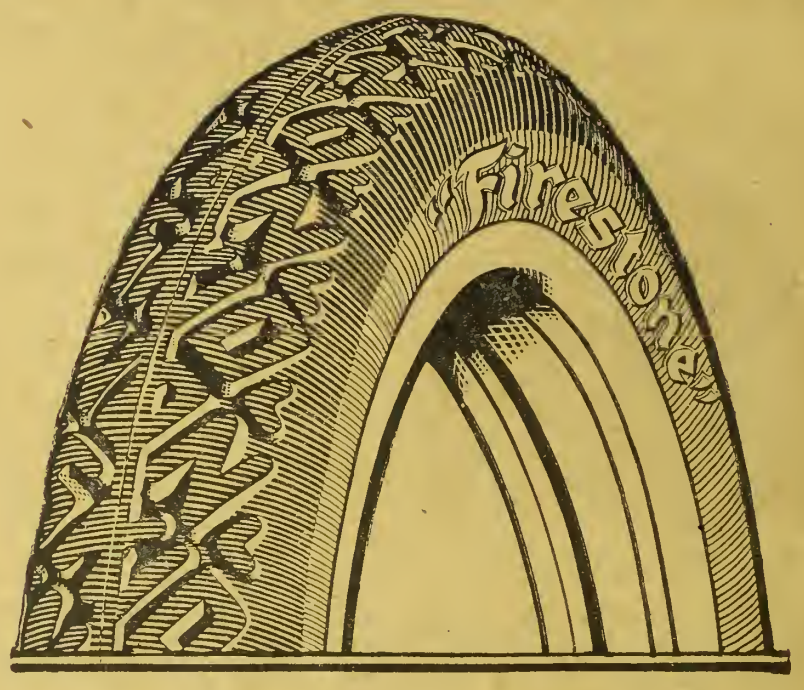

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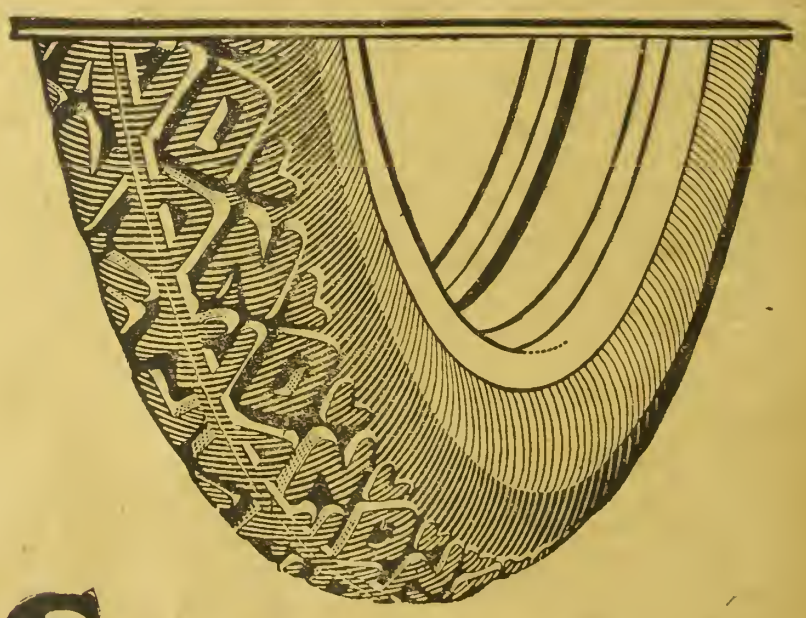

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Shall We Let Money Lenders Kill Farm Loan Law?

BORROWERS ARE AROUSED OVER EFFORT TO STOP FLOW OF CASH

ALVIN T. STEINEL.

R. I. Gwyn's $700 barn, built by a loan from the Land Bank.

WILL the farmers of the west permit the mortgage brokers to rob them of the benefits of the Federal Farm Loan law? This is a pertinent question in the answer to which every farmer in America is interested, whether he ever hopes to become a borrower through the channels of co-operative organizations or not. It is a vital matter to the 12,298 members of the National Farm Loan associations who have borrowed over $348,000,000 at 5½ per cent interest, on the amortization plan and whose heritage of rural credit at low rates is seriously threatened by a court proceeding pending in Washington.

What is to be done about it? Until the United States Supreme Court passes upon the point raised by the American Mortgage Bankers' association no definite action can be taken, but while awaiting that decision, farmers must prepare themselves with facts and figures that can be used before Congress in seeking to strengthen the law. Public opinion must be aroused to the necessity for keeping the farmer on an equality with the business man in securing proper financial backing, and there must be an organized effort to extend the benefits of rural credit at low rates to the tenant farmer, so that he may in time become a farm owner.

During the fall of 1916, when the question of locating the Federal Land banks was under consideration, the writer visited a number of communities in eastern Colorado, to explain the provisions of the law and help in organizing local loan associations. One of the first communities to be visited was the Cope country, in southern Washington county. I went there at the urgent invitation of Ray Marple, a young farmer who had studied the subject of rural credits and knew what a fine thing it would be for his section if loans could be secured by the farmers through the federal farm loan act. Farmers at Cope, Thurman and Joes were much interested. The meetings were soon followed by organization, with Cope as the center of what is now a large and flourishing National Farm Loan association numbering over 70 members.

It was interesting to go back over the same ground last month, accompanied by Mr. Marple, who is secretary-treasurer of the association, and call on the farmers who are borrowing under the system. On every hand there were visible evidences of improvement, due to the loans. Big barns, better dwellings, good cattle and hogs, larger farms—all this and more shows that the federal farm loan law was not a false or misleading promise, but is an actual accomplishment of vast benefit to agriculture. But these outward evidences are only half the story. The thing that made me feel that Western Farm Life had been repaid for its efforts in behalf of cheaper money, were the expressions of satisfaction from farmers and their wives, who urged with every power of emphasis, that we help them retain the benefits of a system, which has taken them out of slavery to the money lender and put them on the same plane as the man of business, who considers it no crime to carry on operations on a reasonable credit basis.

The stories here told form a simple narrative of our calls on farmers and they could be repeated with slight variation in detail from thousands of western farm homes that have experienced the benefits of the rural credits act.

The Big Red Barn.

We found the family of R. I. Gwyn at dinner, in their cabin, a typical homesteader's dwelling, the poorest building on the farm. Nearby was a big red barn, which we had come to see, because the barn was built with farm loan money. People who have never homesteaded on the plains often wonder why the big red barn comes before the comfortable dwelling. Those who, like myself, have lived in a sod house and gone through some stages of pioneering, can understand. In the case of the Gwyn's the explanation was easy. A federal loan was applied for, for the purpose of building a barn to accommodate a small herd of milk cows, and work horses, and furnish a loft for the storage of feed. Having built the barn and being in shape to keep cows, the income from milk is now paying the interest and principal on the loan, taking care of the store bills and putting the Gwyn's in shape for the next step—the building of a comfortable home.

"What do you think of the federal farm loans?" I asked Mr. Gwyn.

"It's the best thing that ever happened to us. The $700 loan I got on this place put me on my feet. I put the money into that barn, so I could take care of cows that would be worth milking. It only takes $22 every six months to pay the interest and pay off some on the principal, and when my time is up on the loan I won't owe a cent. And that isn't all. The fact that I have been able to put up this barn without feeling it has given me a chance to make the first real cash since Mrs. Gwyn homesteaded this place."

"Yes," interrupted Mrs. Gwyn, "I would have sold my relinquishment for $200 at one time. Now I wouldn't think of selling for any price. It is our home and the loan has made it possible to develop the farm. What we want now is an additional loan to build a better dwelling. I don't feel like spending anything on this shack now that lumber is so high, so when we build we want to build new."

"I just figure that this barn hasn't cost us a cent," said Mr. Gwyn, taking up the conversation. "I am raising lots of feed; you can see the stacks for yourself out behind the barn. I have stanchions for my cows; have a steady income from cream, a good calf crop, and am selling Duroc hogs which I raise on skim milk. I need a few more pigs, because I am getting more skim milk now than I can use. You can just say for me that the federal farm loan has been the means of making a farm out of this homestead, and I don't want to see anything happen to the law that would keep the farmer from getting benefits which come back to the public again through this development."

If I don't miss my guess there will be another loan on the Gwyn farm, as soon as the banks resume operations, for the assets are there, and the energy of the farmer and his wife are apparent. They are good for an additional loan to build a dwelling. The easy payment plan puts no burden on them. This is one of many ideal cases in the Cope district which shows that rural credits, at low rates, result in greater production and a contented rural population. Dare we take this privilege from the farmers who are doing the pioneering of this western country?

Duroc sow and her litter on farm of R. I. Gwyn, built up through a Land Bank loan.

Driving on some ten miles we came to a farm that bore every appearance of newness and thrift. There was not only a barn and granary, but a good dwelling.

Was Riding a Tractor.

Looking up over a newly plowed field we saw a tractor coming our way.

"That's S. E. Teter, a member of the executive committee of the Cope National Farm Loan association," said Mr. Marple.

"On his tractor?"

"No, it's not his machine, but he is exchanging labor for the use of it. That's the way we do out here; we help each other."

When the machine reached the fence we went over to talk to Mr. Teter. He was breaking sod for the summer fallow, on which he will plant winter wheat.

"Has the federal loan been of any benefit to you?" I asked.

He was astonished at the question. He wanted to know whether anybody doubted it. His statement was:

"The federal farm loan is the first thing and the only thing the farmer out here has had through governmental sources that has been of direct benefit; don't let anybody take it away from us."

There was earnestness in his voice; just a hint that if something did happen to cut off the loans permanently, the farmers would be mightily disappointed.

The same feeling was reflected by other borrowers. Here is a law that is working out for the benefit of agriculture; agriculture is the fundamental industry; the farmer keeps the wolf of starvation from our doors and now comes a body of men who have lived on usury, the money lenders of America, trying to shut off the sources of our low interest loans to farmers! Don't you think something is liable to happen in rural America if this attack on the law should stop the federal land banks permanently?

Mr. Teter has a $2,000 loan and $65 every six months takes care of interest and principal under the amortization plan. He is paying 10 per cent for some money from private sources and he has a keen appreciation of the 5½ per cent federal loan. These farmers know that they are not using government money, but for the sake of convenience they speak of it as such, because it comes through the agency of the federal bank, although it is the money of private investors who are willing to buy Federal Land Bank bonds. These bonds are tax free; desirable on that account and because of the land security and co-operative pledge of farmers back of them. The loans are handled on a narrow margin and the farmer gets the benefit in a low interest rate and long time.

After a night spent at the Marple ranch we started out again over muddy roads and wet meadows. It does get wet in the dry land country when the summer rains show up on time. Our

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Home of F. H. Robinson, one of the members of the Cope National Farm Loan Association.

What a County Agent Did in Corn Improvement

BRIEF REVIEW OF SIMPSON'S WORK IN BOULDER COUNTY

H. H. Simpson.

H. H. Simpson, who for nearly six years was county agriculturist for Boulder county, is known as the man responsible for development of Minnesota No. 13 corn in Colorado. In the following review only brief mention can be made of this and other big things done by the Boulder County Farm Bureau by reason of Mr. Simpson's ability in keeping the farmers interested in their own problems. The present article is the third of a series of reviews of actual work performed by Colorado county agents on which the results can be figured in dollars and cents. Counties, in co-operation with the federal government, spend many thousands of dollars annually in support of county agent work, and farmers are entitled to know whether the returns are worth the outlay. Ask any Boulder County Farm Bureau member for the answer.

IT is interesting to look back over the six years' record of work of H. H. Simpson, who until recently was county agricultural agent for Boulder county. Examination of the records shows what a steady pull along definite lines means for county agent work. The outstanding project is the work done by Mr. Simpson in the development of Minnesota No. 13 corn. Colorado has had an uphill fight against prejudice and climatic conditions in the establishment of a variety of corn that would provide a sure crop of silage every year. It is due to the efforts of Mr. Simpson and the co-operating members of the Boulder County Farm Bureau that we now have a dependable variety suitable to conditions at an altitude of 4,500 to 6,000 feet.

From the very time of his arrival in the county in 1914, Mr. Simpson began to dwell upon the necessity for seed improvement. One of the first results along this line was a movement for the passage of a state pure seed law. This measure was originated by the Boulder county organization and finally put through the legislature by concerted effort of the farmers of that county, with some assistance from the outside.

Before going further into the matter of Minnesota No. 13, it might be well to take up briefly other strong lines of work carried out in Boulder county, such as the silo campaign and the standardization of wheat varieties, which took the form of a farm test comparing Marquis and Defiance. Results in this test have been shown annuallly at the Boulder county fair and the experiments are being continued, although the farmers themselves now know pretty well which of the two varieties are best suited to their individual conditions as a spring wheat.

Mr. Simpson's report covering the year 1914 states that a great deal was done toward inducing the farmers to test their seed for germination. Demonstrations were given in the rural schools; some of the alfalfa seed offered for sale was carefully watched and many samples were tested for purity and germination. During that first year of his service a seed committee was appointed for the purpose of studying the seed laws of other states. A county seed day was held during the fall, the purpose of which was to call attention to the importance of selecting seed from the field. This work took shape rapidly and finally resulted in the passage of the present pure seed law, which has been of great benefit to the farmers of Colorado. It is difficult to estimate what this law has meant to Colorado in the way of larger crops, the benefits having gone out to all sections of the state regardless of whether they are enjoying the privilege of county agent and farm bureau work.

There was a continuous campaign for silo building, Boulder county having on January 1, 372 silos. At the time county agent work was established there were only a few silos in the county—less than 100.

Silo building, of course, could not have been carried on without a dependable silage crop. It is in this respect that the work with Minnesota No. 13 brought its best financial results to the farmers. Cattle feeding and dairying are some of the big industries and a large business is conducted in the buying and selling of silage each season. The county agent was called upon almost daily to help farmers estimate the tonnage contained in silos and his recommendations along that line are very interesting, as they are based on actual experience.

Estimating Contents of Silos.

In his 1919 report Mr. Simpson says: "The county agent has become quite a factor in most contracts where silage is sold, for he was asked to figure the capacity of 89 silos during the year, and only today while writing this report he was interrupted to figure six silos. The county agent has always maintained that one of the greatest things the agricultural college could do would be to work out a satisfactory rule for measuring silos. Two new rules have been published recently, one by Nebraska based on unsettled silage; and one by Missouri and Kansas, based on settled silage. Neither is satisfactory and leaves the farmers just as much at sea as before. The Nebraska rule tends to run higher and the Missouri lower than the rule used by our farm bureau. They do not check closely and in one case differed as much as 40 tons."

These suggestions, coming from a man who has had so much practical experience in applying the various rules for measuring silage, should be heeded by the experiment stations. Silage is a commercial commodity and naturally the buyer and seller want a fair basis on which to figure their transaction.

Under the head of "Crop Improvement," Mr. Simpson states that his main effort during 1919 was centered on Minnesota No. 13 corn, Marquis and Defiance spring wheat and Turkey red winter wheat. Other varieties of plants that have been placed in the standard list for Boulder county are pinto beans, Danish ballhead cabbage, mountain Danver onions, Green mountain potatoes and John Baer tomatoes.

The wide advertising given Minnesota No. 13 corn brought a demand for seed that could not be filled. Orders came from many western states and in many cases money had to be returned, because the farmers were unable to supply the seed. There were orders for over 60,000 pounds and only about 30,000 pounds had been produced to supply this demand. Every pound of seed shipped out was inspected and tested. The standardization committee, comprising several farmers, drafted rules for registering various seed crops, which will be of interest to other communities where similar work is in contemplation.

During 1919, thirty farmers made application to have their Minnesota No. 13 corn registered and, after inspection, fifteen of these were accepted for registration. It was not the intention in this registration work to include all fields that were grown from pure seed, but only to register enough each year to supply ample seed for handling Boulder county's crops. It is pointed out by Mr. Simpson that many fields of unregistered corn are, for all practical purposes, as good seed as the registered fields. Only a limited number of fields can be given the careful inspection and complete handling under the registration rules. These rules covering wheat and corn are as follows:

Wheat.

Turkey Red, Kharkoff, Kanred, Marquis, Defiance:

1. To register a field, an application to the committee must be made before it is cut, so that it may be inspected while still standing.
2. The field must be grown from seed (a) that the source is known; (b) that the committee is satisfied is pure as to variety; (c) sample of seed must be submitted for inspection (except year 1919).
3. The field must be inspected and approved by committee and in no case shall it show more than 1 per cent heads of any other variety.

Certified Seed:

1. Must be grown on registered field.
2. If threshed in an unclean separator, it must be grown on a field large enough to allow at least 50 bushels of grain to be run through the separator before any seed is saved.
3. Must show practically no smut (one-tenth of 1 per cent), and must conform to the standard weight per bushel.
4. Must not be cleaned at public elevator.
5. Must show less than 1 per cent mixture of other varieties, and contain no noxious weeds seed.
6. Must have good color and be free from cracked or shriveled kernels, and otherwise the quality of seed must meet the approval of the committee.
7. Germination must be above 90 per cent.
8. Sample of seed must be left in office of county agricultural agent.

Corn.

Minnesota No. 13:

1. To register a field of Minnesota No. 13 corn, an application must be made to the committee before September 15.
2. The field must be grown from seed that is registered in this county, or from seed that comes from a known source outside and that said source is approved by the committee after investigation as to its purity.
3. Field of corn to be registered must be at least 30 rods from any other corn field that is itself not registered corn of the same variety. However, the committee reserves the right to refuse to register a field even at the above distance, if the conditions indicate that there may be a possibility of mixing. Each field must be inspected before any seed is selected.

Certified seed:

1. Must be seed selected from a registered field.
2. If shelled, it must be either graded or tipped and butted, so that all odd shaped and small kernels are removed.
3. Germination test must show at least 85 per cent.
4. All seed corn sold as certified must be inspected and approved by committee and a sample left in office of the county agricultural agent.

Test of Kanred Wheat.

One of the new projects undertaken during 1919 was a test of Kanred wheat, the county tgent having secured two bushels of this new variety, which amount was given to three co-operating farmers. Only two of them succeeded in getting it sown in the fall of 1918 and neither had good luck with it on account of weather conditions. However, one farmer, who did not plant his wheat until February 4, got 78 bushels of No. 1 wheat from 1.45 acres, and with the seed thus grown 100 acres were planted in the fall of 1919, which should provide a good test to be announced, probably at the Boulder county fair during the coming fall.

Tests with alfalfa at high altitudes—7,000 feet and over—have been conducted, the variety being the Baltic. These test plots have done well and farmers in the higher mountain valleys are much encouraged with the results.

Many other lines of activity might be mentioned, such as dairy improvement, which includes the activities of the Boulder County Cow Testing association; the organization of a purebred stock breeders' association, and combination sales successfully put over by this association in co-operation with the Larimer county breeders; the furnishing of labor to the farmers; combatting of crop diseases; introduction of farm accounting systems on a number of farms and the continued work to make the Boulder county fair successful from the educational standpoint.

Boys' and Girls' club work also was kept going year after year in successful fashion with splendid showing at the county fairs and a good representation at the National Western Stock Show each winter.

Review of the Activities.

In order to give those who are not informed an idea of the wide variety of a county agent activities, the following is quoted from Mr. Simpson's last annual report, showing the number of demonstrations on each subject:

Multiple hitch	3
Kanred wheat	3
Grimm alfalfa in high altitudes	3
Stock peas at high altitudes	1
Corn for seed, Minn. No. 13	10
Kherson oats	1
Wheat grading	4

Under the head of "Crop Projects," we find the following:

Farms selecting seed corn in fall.	39
Acres planted with fall selected seed corn	334
Farms testing seed corn for germination	44
Acres planted with tested seed	2,360
Farms growing corn for ensilage	330
Acres of corn grown for ensilage	6,183
Total number of farms on which corn growing was introduced, or farm practice relative to corn culture modified as a result of corn projects (include spread of influence from demonstrations).	12
Total acres of corn involved in above question	136
Farms treating seed wheat for smut	14
Acres sown with treated seed	420
Total number of farms on which wheat growing was introduced or farm practice relative to wheat culture modified as a result of wheat projects (include spread of influence from demonstrations)	40
Total acres of wheat involved in question above	1,160
Farms treating seed potatoes for disease	9
Acres of potatoes planted with seed treated for disease	27
Total number of farms on which potato growing was introduced, or farm practice relative to potato culture modified, as result of potato projects (include spread of influence from demonstrations)	4
Total acres of potatoes involved in question above	12
Total number of farms on which alfalfa growing was introduced, or farm practice relative to alfa culture modified, as result of alfalfa projects (include spread of influence from demonstrations)	7
Total acres of alfalfa involved in above question	140
Total number of farms on which barley growing was introduced, or farm practice relative to barley culture modified, as result of barley projects (include spread of influence from demonstrations)	8
Total acres of barley involved in above question	112
Total number of farms on which rye growing was introduced, or farm practice relative to rye culture modified, as result of rye projects (include spread of influence from demonstrations)	1
Total acres of rye involved in above question	43
Total number of farms on which orchards were planted, or farm practice relative to horticulture modified, as result of orchard projects (include spread of influence from demonstrations)	4
Total acres of orchards involved in question above	6
Total number of farms on which red alsike or white clover growing was introduced, or farm practice relative to red alsike or white clover culture modified, as result of clover projects (include spread of influence from demonstrations)	3
Total acres of clover involved in above question	18

The above is only a partial review of the varied activities of a county agent. The work pays or the farmers in our best agricultural counties would not be behind it.

Ask Western Farm Life Service Bureau. Information free on all phases of farming.

Niagara County Apple Growers Know How to Pack

FOLLOWING OLIN'S TRAIL THROUGH YORK STATE ORCHARDS

ARTICLE II.

THE Niagara county growers have given their first concern to a standard, uniform reliable, "the same all the way through," pack. While these growers think co-operative selling is possible and often pool their fruit, they feel that standardizing comes first of all. Co-operative sales can receive attention later. These fruit growers seek to get right in grade and pack, and encourage the formation of an association in every orchard district in the county. This decreases the amount of fruit peddled out in car or truck load lots, put up in the jumble, mixed or undesirable way that formerly prevailed. Some people have said a barrel covers a "multitude of apple sins." The central packing house association eliminates the evils while it retains the container so generally in use in the east.

The last part of May the manager of the county Farm Bureau took the writer over to New Fane one evening, where he had been called to organize a new packing house association. This district already had one association of sixteen to twenty members. It was deemed best to form a second association rather than add more members to the established association. In other words, two associations of twenty each seem to give more satisfaction and produce better results than would one association with fifty to one hundred members. The president of the old association was there to help his neighbors in every way he could to get started right. Mr. Peet and the growers worked beyond the midnight hour with interest intense and as keen as when they began at 8 in the evening. New York state has a law outlining a general plan for these non-profit co-operative associations that are incorporated and can do regular business through a board of directors. One important regulation in all of the central packing house associations is that no one can become a member unless he is a bona-fide fruit grower. When he ceases to produce fruit, he must sever his connection with the association. Thus the directors must be growers and the officers they choose—president, vice president, secretary, treasurer, etc.—are growers connected with the given association. The goal toward which Farm Manager Peet and the orchard men of Niagara are aiming and hope soon to reach, is a central packing house association at each loading station in the county.

W. H. Olin.

The accompanying article is the second of a series of three detailing investigations made by Prof. W. H. Olin in the center of New York state's great apple growing district. There is so much food for reflection and such a wealth of practical information in these articles that we would urge our mountain states fruit growers to give them careful reading. Prof. Olin is Agricultural Supervisor for the Denver & Rio Grande Railway, with headquarters in the Equitable Building at Denver. He served for some years as supervisor of marketing for the Frisco Railway at St. Louis, and prior to entering railway agricultural work was engaged in teaching and extension activities at Colorado Agricultural College, and the University of Idaho. He is known to more farmers in the mountain region than any other extension worker. Of late he has been giving particular attention to the problem of fruit marketing and just now that subject looms large in the mind of every orchardist in this region. We know we can grow the finest fruit that is produced, but we have not solved our marketing problems. Prof. Olin touches the heart of the matter in these articles and he is not giving advice, but is citing examples that show us how the thing is done in a successful producing district. This series is not giving the complete information. Necessarily some very interesting tables are omitted, but fruit growers are urged to send for copies of the bulletin that is to be issued by Prof. Olin's department in the near future, as that will contain the complete report. Send your name and address to him at his Denver address, as given above if you wish a copy of the bulletin.—Editor.

The County Central.

To facilitate the work, insure thorough inspection and render the administrative control what is desired, a general or county central association has been formed which has supervision over all the local packing house associations which shall be established in Niagara county. Each local association selects a director for the county association from its membership. These directors select the officers for the county central. The general plan of county central administration is similar to that of the California Fruit Exchange plan and also the United Fruit Growers Incorporated of British Columbia. There are at the present time thirteen locals in the county central, with other districts arranging to organize to come in soon. This plan of organizing has spread out to other adjoining counties and the last week in May a meeting was called at Albion, N. Y., for the express purpose of perfecting arrangement for forming one general or central association that will cover, in its jurisdiction, all orchard districts of western New York. This will then establish a definite standard for the largest fruit districts in the greatest apple state in the Union. The general plan of Niagara county central will be followed in administrative control and the same brand or label used to protect fruit quality. Thus we can see Cataract apples and peaches bid fair to become as popular and as generally known as Sunkist oranges or Skookum apples from our Pacific Coast producing districts.

Let us now look over the orchards of this important New York county. One is first impressed with the good roads over this whole district. State highways cross the county north and south, east and west. No street in Denver, the metropolis of the Rockies, has a more dependable or substantial hard surface than have these 250 miles of state highways in Niagara county. The average width is 12 feet, so autos or teams can safely pass each other without crowding. Concrete is used for surfacing, also good quality brick substantially laid and other tried and substantial surface materials are made use of. Whatever the material used, it is uniformly smooth and the proper upkeep is rigidly maintained. For districts off the state highways, the local district and the county improve the road and give to all sections something better than the old-time rutty, irregular, rough and, at times, muddy road which makes hauling to loading stations expensive, cutting down the profits on any farm commodity which must be hauled to market. Niagara county demonstrates the economic value of improved highways and each of its fruit growers have become good road boosters and willingly pay the tax required for their maintenance.

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How Cost of Pork Production May Be Reduced

ECONOMIES IN FEEDING PROGRAM ARE ESSENTIAL TO PROFIT

H. A. LINDGREN.

THERE is a great deal of discouragement among the hog raisers at this time. This is due to the high price of grain and the comparatively low price of finished hogs on the market. It is hard to see just where we expect to profit when grain costs $3 to $3.25 a hundred and the top price for pork on the market ranges around 14 cents. This obstacle is causing quite a number of our hog raisers to discontinue the production of pork.

There is one thing that every farmer should bear in mind in this connection and that is that every farm, no matter what is raised, has more or less of waste product. This may be in the form of cull potatoes, apples, or other fruits, grain stubble, etc. Hogs will utilize these waste products to better advantage than any other farm animal. In fact, they are the only animal that will utilize the cull vegetable crops, or cull fruit crops, and they will gather up the grain from the stubble fields closer than most any other animal. Taking these things into account one can afford to raise hogs even at a slight loss, as this loss can be more than taken care of by the utilization of waste.

It is possible, by taking advantage of the alfalfa pasture on the farm, to produce pork economically even at present prices. It is not possible to expect to make a profit on feeding grain alone, at this time, as it requires from 450 to 550 pounds to produce 100 pounds of gain. However, if grain is fed in limited quantities to hogs running on alfalfa pasture a reasonable profit can still be made.

In a feeding test conducted on a farm in the Uncompahgre valley, 22 hogs weighing 114 lbs. when the test began, were run on alfalfa pasture for a period of 33 days. They were fed a limited amount of grain of 1.3 per cent; by this we mean 1.3 lbs. of grain to every 100 lbs. of hog per day. From this allowance the hogs gained .7 of a lb. each daily. The grain fed was whole corn. In this particular test it required 228 lbs. of corn to produce 100 lbs. of gain. This was an unusually good showing, but if the proper attention is given to the alfalfa pasture on which they run it is possible to duplicate this record most anywhere, providing the hogs are healthy and free from lice.

A word here in regard to the pasture for hogs will be of interest. It has been found repeatedly that hogs will do better on the young tender shoots than on the old hardened stalks. For that reason it is advisable to divide the pastures so that the hogs can be shifted from one to the other at intervals of a week or ten days. As soon as the hogs have been removed from one division a mowing machine should be run over the lot and the growth that has been left by the hogs clipped down. The water should then be turned on and the young tender shoots will immediately start and have a very fair growth by the time the hogs are turned back at the end of a week or ten days.

Where too much grain is fed the hogs satisfy their appetites on grain and will not eat as much pasture as they should. For that reason under present conditions, when grain prices are high and pork prices comparatively low, it is advisable to limit the grain ration to 2 lbs. or less. Another test in the same locality will serve to illustrate the point.

In this particular test 31 hogs were fed for a period of 43 days. The initial weight of these was 116 lbs. They gained 1.73 lbs. a day, which was considerable more than was gained in the first test mentioned. This later lot was fed 4.6 per cent of grain per day. In this case it required 415 lbs. of grain to produce 100 lbs. of gain. These hogs had enough grain to satisfy their appetites and were not induced to eat a great deal of pasture. The pasture was just as good as in the previous test quoted, but was not made use of by the hogs. This plan may prove satisfactory (that is, feeding a larger percentage of grain a day), when grain prices are low and pork prices high, but under existing conditions the practice would prove a loss.

Another point in this connection, which is of great assistance in economical pork production, is the matter of taking advantage of the growing period of the young pig's life. It has been found in experiments that the young growing pig will use practically one-half as much grain in putting on 100 lbs. or gain as the matured hog. This applies from the time the pig is farrowed until it weighs 80 to 100 lbs. It is advisable to provide a creep for the young pigs while they are still with the sow. This enables them to get grain whenever they want it without being disturbed by the older hogs. The grain they eat at that time brings more return than at any other period in their lives. So it is advisable to take advantage of that system.

In regard to the feeding of grain on alfalfa pasture, it has been found that ground wheat, ground barley, or corn all give very satisfactory results. However, it is necessary to select the grain that costs least money, or if possible one that has been raised on the farm. It is felt that the more successful hog enterprise on the average farm is the one that is kept within the limits of the grain produced on the farm. That is, unless equipped to do so, do not raise more than you can feed on the regular cropping program.

The idea of keeping the hogs growing is an important one. A stunted hog will never produce pork as economically as the thrifty, growing pig. Early in the summer or during the time that the pasture is at its best, feed a limited amount of grain and keep the hogs growing until such time as the waste products are available in the fall. The hogs then have the frame and can be fattened out largely on these waste products with a very good profit. Of course, it is understood that such watery feeds as apples and potatoes should be supplemented with some grain. Four hundred pounds of cooked potatoes or 600 lbs. of raw ones, usually can be depended upon to replace 100 lbs. of grain in the fattening ration. In the case of apples or root crops it requires from 650 to 800 lbs. to replace 100 lbs. of grain. In case one is not in position to avail themselves of the cull potatoes or apples it is advisable to plan ahead by planting an acre or two of some good root crop, that is particularly adapted to the soil. Such roots as mangels, rutabagas and turnips, are very satisfactory for this. Some have grown carrots to very good advantage and used them for hogs. However, these do not usually yield as well as the mangels, which point should determine the crop to grow.

One of the cheapest ways of producing pork is the use of the stubble fields after the grain has been cut in the fall. In spite of all that can be done there is more or less grain scattered on the ground during the process of cutting and stacking. Hogs will pick this up and produce excellent gains without any additional grain.

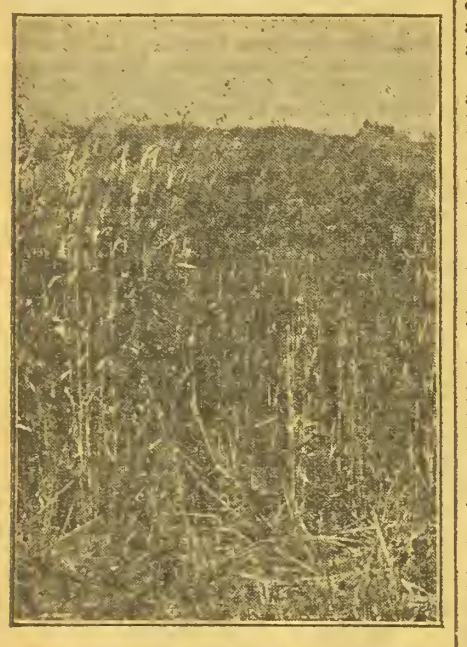
The hogging down of corn has been found a very satisfactory way of producing gains. This not only produces economical gains, but also is one means of saving labor on the farm. This system, however, requires additional fencing and may not be practical in every case. At any rate it is worth looking into under most any system of farming. While hog production at times does not look as though it was worth while, we must nevertheless bear in mind the fact that pork is one of the most desirable meats we have and the market for it is very popular. Those who can find it possible to produce it economically need not worry about the future market. Meat production is not keeping pace with population increase.

Analyzing Dr. Chilcott's Bulletin

FLAWS IN EXPERIMENTAL WORK POINTED OUT.

E. R. PARSONS.

IN our article on deep plowing, which appeared in the issue of April 1, the first of the two paragraphs that we quoted and discussed should have been credited to Tractor Farming instead of the Journal of Agricultural Research, in which appeared Dr. E. C. Chilcott's report on deep tillage experiments. In this report we find the following paragraph relating to the same subject:



Barley on 10-inch plowing on the E. R. Parsons Ranch.

"It is mistaking or failing to recognize the purpose of plowing that leads to the belief that its efficiency increases with its depth even though that depth be extended below all practical limits of cost and effort. Plowing does not increase the water holding capacity of the soil, nor the area in which roots may develop, or from which the plants may obtain food. Plowing removes from the surface either dry or green material which may encumber it, provides a surface in which planting implements may cover the seed, and removes or delays the competition of weeds or plants other than those intended to grow, and in some cases by loosening and roughening the immediate surface, checks the runoff of rain water. All these objects are accomplished by plowing to ordinary depths, as by subsoiling, dynamiting, or deep tilling by any other method. There is little basis, therefore, for the expectation of increased yields by these practices and the results of the experiments show that they have been generally ineffective."

On examining these experiments in detail it appears quite clear to the mind of any farmer accustomed to deep tillage that these conclusions are hardly in accord with the facts.

In the first place plots were subsoiled altogether regardless of whether the nature of the soil demanded it or not. Where soft subsoils, such as that at Akron were broken up, there was naturally no gain in yield. What farmer would have expected it? But where the subsoil was clay or other hardpan, such as some of the Judith Basin plots, which needed opening up, there was an immediate and profitable increase in yield.

It is easy to understand that when the results of a series of experiments on land which needed subsoiling are lumped together with another set of experiments on land in which subsoiling is a detriment, the gains in favor of subsoiling might easily appear negligible.

No farmer would waste a minute trying to open up a subsoil already soft and permeable and no one would recommend it; but it pays and pays well, as can be demonstrated by these same experiments, to open up a tight subsoil to let the water in, and give the roots a chance to go after it. The method of subsoiling two years in succession and then plowing for two years, as used in these experiments, is not the way to obtain the best results. The best crop can be expected the year after subsoiling after the ground has partially settled, and another subsoiling at this time loosens up the ground too much and cuts the yield.

It is one of the first principles of agriculture that the optimum condition for crops is not when the land is unplowed nor when the land is fresh plowed, but something between the two, and this condition can be obtained by allowing time for nature to pack it, which is much better than artificial packing. The effects of a good subsoiling will last for several years, and in fact no more effective means of reducing the yield could be devised than by subsoiling again just as the land is reaching the optimum condition for a crop.

In his report Dr. Chilcott quotes Mosier and Gustaffson of Illinois as saying: "The subsoil ran together as soon as it was wet and became approximately as it was before." We also read, "One cycle of wetting and drying overcomes the effect of cultivation."

This is evidently eastern lore and has no place in a report on dry farming experiments. It requires an immense amount of water to pack land as solid as it was before plowing, and on the dry farm sufficient may not fall for several years. There are many farmers who have a streak of deeply plowed or subsoiled land in their fields which is very clearly indicated every season by the growing crops. On the writer's ranch two or three rows were plowed and subsoiled to a depth of 20 inches for potatoes. Every year afterwards the grain crops on this streak were taller and yielded more grain than the rest of

Barley on 7 to 8 inch plowing. The horses could not finish at the 10-inch depth, so Mr. Parsons compromised with the plower at a lesser depth, with resultant lower yields.

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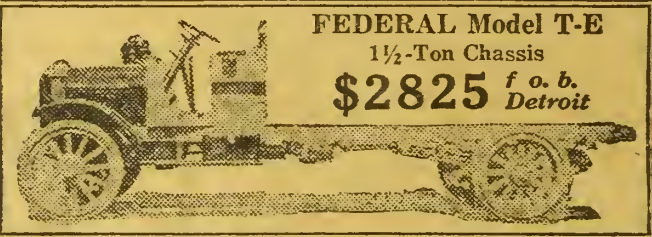

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the field, so long as he lived on that ranch.

Statement Is Absurd.

On page 484 of this report it says: "Plowing does not increase the water-holding capacity of the soil, nor the area in which roots may develop, or from which the plants may obtain food."

The absurdity of this statement is so patent to everybody that it is hardly worth arguing about. Plowed land occupies almost twice as much space as solid land. What causes this increase in bulk? The air spaces between the granules, nodules and clods. When it rains these spaces fill with water, the loose soil becomes a big sponge and can hold nearly twice as much as before it was plowed. The plowed land holds the water until it can soak down into the subsoil and the deeper it is plowed the more water it can hold. As far as plant roots are concerned, when a subsoil is opened up for the penetration of water, the roots naturally follow and subsoil water contains usually a fair amount of mineral plant food. The experiments, the results of which are embodied in this report, were made at various stations throughout the dry farming belt, some with soft subsoils which needed no opening up, and others with tight clay and other formations more or less impervious to water.

The subsoil at Akron is described on page 483 as being a very loose and open subsoil. The findings of the experiments naturally go to prove that there is no need to make it any looser and that by doing so there is no particular increase in yield.

At the station in the Judith basin the subsoil is a heavy clay down to three feet, where it changes to gravel. We quote only the yields of the first year of subsoiling because those of the second year were probably cut by the second year subsoiling, which was not needed and must have been most detrimental to the crop.

Bushels per Acre.

1910.	Spring Wheat.	Oats.	Barley.	Corn Lbs.
Subsoiled	15.0	25.3	15.0	3.650
Plain plowed...	14.0	20.9	12.5	2,900

The winter wheat subsoiled plot showed no gain. We do not quote it because a hundred things may happen during the winter to stunt or mar the yield of a tenth of an acre of a crop, which is green and edible at this time of the year.

Bellefourche Station, Heavy Clay Subsoil.

1909.	Spring Wheat.	Oats.	Barley.	Corn.
Subsoiled	28.5	60.8	33.8	20.8
Plain plowed...	23.3	46.9	25.0	23.5

Gains From Subsoiling.

This station shows remarkable gains from breaking up the heavy subsoil. There is no reason to believe that the corn should not respond to the subsoiling as well as the other crops. We must attribute it to the uncertainty of small plot experiments, or as it is called in the report, a "probable error of mean ratio." The gain from the three first crops is five, fourteen and eight bushels per acre respectively, or an average of nine bushels per acre. The effects of subsoiling on the land are apparent for five years or more and no further work of that kind should be done for at least three years. An increase of 9 bushels for three years is 27 bushels per acre from one subsoiling. What will that subsoiling cost? Five dollars at most. At two dollars a bushel, here is over fifty dollars for five! Truly, according to Dr. Chilcott's figures, subsoiling pays WHERE IT IS NEEDED.

We all know enough about subsoiling to be sure of an increase wherever such a proceeding is indicated and it is very easy for the farmer to find this out by trying it. We cannot tell much about subsoils by looking at them, nor about topsoils by soil analysis. The only sure way is to grow something on them and watch results. The farmer can take a spade and dig a small space in his cornfield 18 inches or two feet deep and note the difference in yield on that particular spot. This spot experiment might give him an inkling, as plot experiments sometimes do, as to whether it would pay to proceed any further in the matter or not.

There are many farms in the clay and hardpan districts which have been reclaimed from bankruptcy and made profitable by subsoiling. Dr. V. T. Cooke told us lately of a ranch which was put on a profitable basis by just this operation. Subsoiling is not so expensive as it looks. The plow for this work needs to be no wider than one inch with a sharp point, and two 1,400-pound horses can pull it following behind the regular plow team. Twenty-five or thirty years ago subsoil plows were hard to find; but the writer bought an old-fashioned bull-tongue and had it cut down to the right size. It was on land worked with this that he raised his best ears of corn. It was also used to advantage in one corner of the orchard which would not wet down. Soon after subsoiling the moisture line dropped three feet.

Good Uses for Dynamite.

As far as dynamiting is concerned it is unlikely that anyone would take up a dry farm that needed it; but at the same time there are peculiar conditions, which can be corrected with dynamite. There are some slopes where there is a hardpan at two feet or more which prevents the precipitation from sinking below it. The consequence is that the water collects on top of the hardpan and works its way downhill, seeping out at the foot of the slope and it becomes so much useless moisture for all the good it is to the farmer. In many orchards and some grain fields this condition has been corrected with dynamite and the trees have taken on a new lease of life. It has also been found beneficial in some instances to dynamite the ground between trees, which had become packed from years of trampling by the horses hauling the necessary implements for cultivation.

It is a great labor saving device in digging tree holes. A hole about two feet deep and large enough to admit the cartridge is made with the crowbar and then half a stick of dynamite is inserted and touched off with a fuse after being properly tamped. The result is a small hole in the center, a shattered subsoil and a lot of loose dirt easily thrown out with the shovel. The effect of dynamite on the subsoil lasts for years. Clay may come together again after a long time, but gravel and conglomerate cemented with lime never solidifies, for the lime will never bind again unless first dehydrated with fire.

On the writer's ranch some holes were dynamited for trees six years ago. The trees were never planted, but the grain still shows where every hole was. The University of California believes in deep work for dry farms and recommends deep plowing, subsoiling when necessary, and dynamiting, for special purposes. The result is, the great majority of the farmers plow deep. In the San Joaquin valley where the precipitation is 12 inches, they plow deep, fallow their land and raise 20 sacks of wheat or barley to the acre, and the dry farm land sells for $400 an acre!

We have been advised at various times by our official friends that we should not fallow because it uses up some humus, that cultivation for anything except killing weeds is of doubtful value, and now they tell us that the results of deep plowing, subsoiling and dynamiting are negligible as far as increase in crop yield is concerned, and yet it is these very operations that have raised dry farming from an affair of shallow plowing, nubbins, and rye, to the level of an industry which may some day feed half the people of the United States.

On Dry Land Crops.

What is your idea of sweet clover, Sudan grass and alfalfa as grown on the dry lands?—B. A. L., South Dakota.

These crops are all valuable and we have discussed sweet clover and Sudan grass rather extensively from time to time and intend to return to these subjects in the future. Alfalfa has been disappointing in some sections on non-irrigated upland, but on bottom land where there is an underflow, which really should be called sub-irrigated, alfalfa is an established and indispensable crop. All over eastern Colorado there are dry water courses or draws where depth to water is from 10 to 30 feet. In such places alfalfa has been found a successful crop. Usually two crops are cut a year. On such lands the seed may be broadcasted. On upland it is usually sown in rows so that it can be cultivated. This practice requires careful preparation of the soil to increase its water holding capacity.

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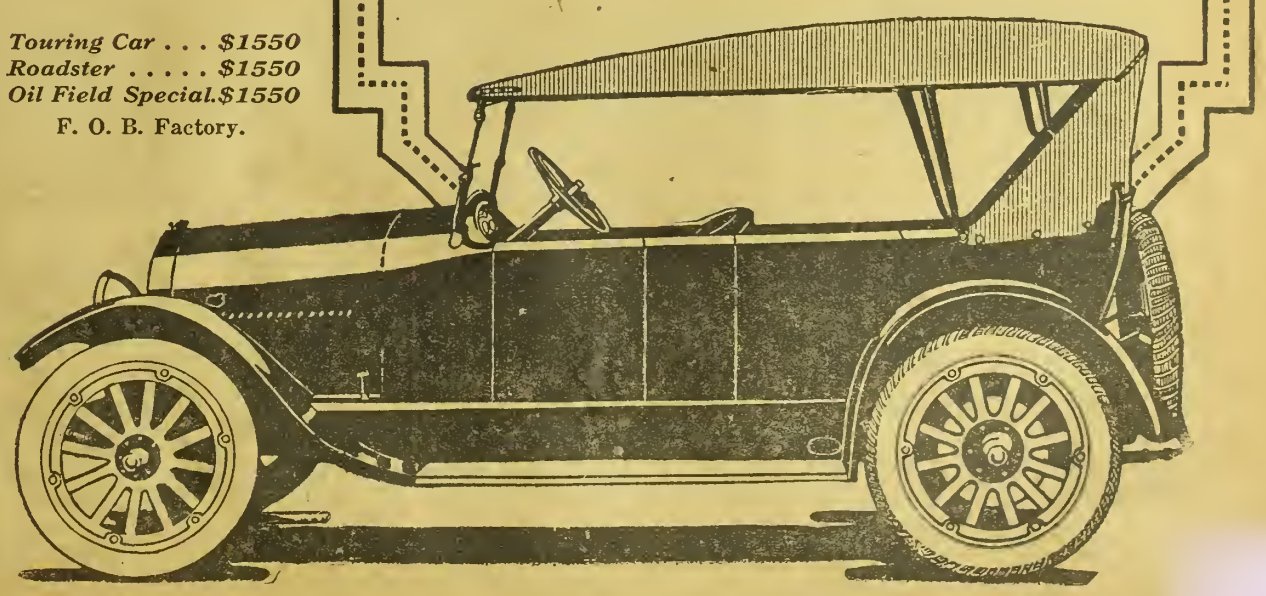

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Fighting Farm Loan Law.

On another page of this issue there appears an account of the visits made by one of the editors of Western Farm Life to farmers in eastern Colorado in search of information regarding the benefits of the Federal Farm Loan law. The story speaks for itself. We want every farmer to read it carefully, because the matter is of vital interest, not only to borrowers under the Federal Farm Loan system, but to all who believe that the farmer is entitled to credit on the same basis as is extended to the business man.

The American Mortgage Bankers' Association, comprising a large number of the money lending concerns of the country, have succeeded in shutting off rural credits temporarily by raising the point of legality of the tax free feature of farm loan bonds. The matter is pending in the United States Supreme court and while awaiting decision the land banks cannot offer their bonds. In consequence, the stream of money is shut off and no loans can be made until the court gives an opinion on the constitutional point involved.

If the money brokers win their contention, it means that interest rates on loans must be advanced, because the banks are doing business on a narrow margin and giving the borrower the benefit of this saving. The chief reason for the success of the system is the fact that bonds, through the sale of which funds for lending to farmers are produced, have been tax free, just as are municipal and other bonds issued in the interest of public development. By this means agriculture has been getting a mighty lift. This is decidedly in the interest of public policy and national advancement.

No one is hurt through this system of financing the farmer except the mortgage broker. The government assumes, through the machinery of the Land banks, the office that formerly was taken by the broker, who took a commission from the man who furnished the money and another commission from the borrowing farmer.

We have every reason for expecting a decision favorable to the government, but if this attack fails, we know that the mortgage brokers are ready with other technicalities, in an effort to tie up the system completely. Thousands of applications for loans are being held up and the brokers hope to gain by the delay, even though they should not win a permanent victory.

Should they win their point it will be necessary for the farmers to appeal to Congress for relief. The rural credits law was passed after many years of earnest effort and the farmers of America will not stand idly by and see the business of lending money go back into the hands of the usurers.

The American Farm Bureau Federation is "on the job" at Washington, but nothing can be done while the matter is before the court. However, every farmer should make it his business to call attention of his congressmen and senators to the need for protecting agriculture against this attack on the Land banks. Let us be prepared for whatever the decision may be. If the tax free feature of the bonds is unconstitutional new legislation will be necessary to protect the thousands of borrowers. If the court gives the government a favorable ruling we must be on the lookout for some new line of attack.

There are now in operation 3,983 National Farm Loan associations, with a membership of 12,298 farmers, who have borrowed $347,990,941 through the Federal Land banks. The mortgage brokers were skeptical of the success of the system, but they have found out that the farmer is taking advantage of the opportunity to borrow money at low rates on long time, hence their attack on the system. We ought to give them a good fight, farmers.

✦ ✦ ✦

The Cabana "Decision."

The farm press is being informed by the press agent for Oliver Cabana that the decision of Judge Sears in the injunction suit involving the directors of the National Holstein Friesian Association is a complete victory for Cabana. The Buffalo newspapers seem to have reached the same conclusion. There is absolutely no fault to find with the decision, which reads like good law and unbiased justice, as summarized in the following points:

First—That the association cannot cancel or expunge A. R. O. records and the certificates of such records, no matter by whom such certificates are held, without giving to the holder of such certificates the protection accorded by the "law of the land."

Second—That before action can be taken, notice must be given to the holder of such certificates, setting forth any charges which the association make with respect to such records, and all proofs with respect to the honesty or dishonesty of any records must be presented in the presence of the accused.

Third—That the hearing must be had before a fair and impartial tribunal, the members of which must be shown to be free from bias or prejudice.

We do not think any breeder will take issue with Cabana or the courts on these points. However, what the rank and file of the Holstein men are interested in is to learn the truth about the confession of Cole, who swore that he falsified records on the Cabana farm. That he afterwards repudiated this confession did not improve the matter. The doubt thrown on the records still exists and the decision of Judge Sears has settled nothing so far as those records are concerned. This sort of a technical victory may be satisfactory to Cabana, but it does not appease the demand of the Holstein breeders for the truth.

The truth was all there was at stake when the directors started their investigation, and that was and is the issue now, and that was the thing which was prevented from coming to light by the injunction secured by Mr. Cabana's attoreneys. One of the Buffalo papers makes the following comment: "And it is quite apparent that the ruling of Justice Sears in the Cabana case will work a decided benefit and be of great value to the thousands of breeders in the United States who today hold these A. R. O. certificates."

The A. R. O. records of "thousands of breeders" have not been in doubt, nor discredited, nor did any "thousands" ask any court to come to their rescue. The shoe is on the other foot. Let us hope that the delay caused by a refuge to the injunction will not prevent the truth from coming out now. So far Cabana's victory has been in a gain of time.

✦ ✦ ✦

Enforce the Stallion Law.

A word of warning has been issued by Prof. R. W. Clark, Animal Husbandry Specialist of the Agricultural college, regarding enforcement of the Colorado stallion law. Violations are being reported from various sections and it may be necessary to institute prosecutions if stallion owners continue to disregard the law. Some interesting history is given by Prof. Clark regarding similar legislation in Montana, where he had charge of the stallion registration law for five years beginning with 1909.

Prof. Clark says: "Stallions and jacks had to meet requirements of the law before they could enter the state, and the stallion board prosecuted the railroads and the stallion owners when they violated the law. Everybody was equal before the law, and when the law got into operation stallion owners fell over themselves to comply with it. If a shipment of stallions that could not meet the requirements came into the state, the owner was given an opportunity to ship them out at once, or stand prosecution and advertising. A great many shipments stopped at Billings, the gateway to Wyoming and Colorado, and the undesirable stallions were sent into these states out of Montana. Colorado and Wyoming had no stallion law; if so, it was not enforced. Many carloads of reject stallions were sent here. I often wonder when I see a bunch of inferior horses how many of them were sired by these undesirables.

"In one case a farmer bought a black stallion with a star in face and thought he had a Percheron, but in a few months the horse faded and had a piebald face and white legs. In another case a man bought a grade stallion for $600, registered him in a bogus book and sold him for $3,500. There were lots of such cases at first, but as the stallion law was enforced, there was a thinning out and a cleaning up. You cannot imagine the deplorable condition of the horse situation in a state where there is no stallion law or where the stallion law is not enforced. I have been informed that there are breeders of purebred horses in Colorado who are not complying with the stallion law. Probably they think it is useless for them to do so when their neighbors do not. When breeders take such a stand there is little hope for the horse industry."

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Getting Along Shorthanded.

Overhauling machinery in winter or early spring is a big help toward getting crops in on time and where a person tries to get through with little help. Machinery must be in good shape to avoid loss of time. I usually sow spring grain on fall plowing, using a 15-30 tractor to do the work of disking and drilling in one operation. After spring sowing I plow or disk all ground to be listed to corn and cane. This saves at least one cultivation and is done earlier, thus eliminating the work of cultivating when hands are most needed for other use.

I use a two-row lister and six horses for listing, harrowing after lister once a day. After the crop is up, I harrow several times, then use a two-row listed corn cultivator for two cultivations.

I then go over my grain harvesting machinery to make sure everything is in good order, replacing badly worn machinery with new, as often a new piece of machinery will pay the difference between itself and an old one in a single season.

In harvest, the grain is headed and threshed from the barge, as this eliminates the handling of the grain from the stack and does away with the stacker. The threshing crew consists of about four more men than it takes to head.

I sometimes plow or do other tractor work earlier in the season for return work during harvest. After harvest I go over my cultivated crop with surface blades on the cultivator. I summer fallow about four or five hundred acres and have the tractor disk and drill fall wheat, also use horse drill.

I have my own silo filler and corn binder and exchange work with my neighbors at filling time, running two or three binders, or cutting sleds. In this way I get through quickly, returning the work by the use of my silo filler or other machinery. I then finish my wheat sowing, putting all the force on drills I have.

I farm about 700 acres to wheat and 200 to row crop. In addition to farming, I run cattle in pasture and feed in winter. This ranch is operated by three men, including myself, except at harvest time. In order to exchange work with neighbors one has to be on agreeable terms with the entire community and repay work satisfactorily.—Lester M. Lesh, Pierce, Colo.

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Some Figures on Shoddy.

The truth-in-fabric bill before Congress was left in the hands of the interstate commerce committees of both houses at adjournment. This bill provides that manufacturers must stamp their cloth with the percentage of virgin wool and shoddy it contains.

It is startling to learn that in 1919 old woolen rags have been rewoven into cloth amounting to 380,000,000 yards. By mixing a little virgin wool with it 620,000,000 yards was made. The amount of new wool used alone would have made 240,000,000 yards.

A chain is no stronger than its weakest link. It is no wonder that our clothing does not wear better when this old material, which has spent its usefulness composes the larger part of the cloth. If the bill is passed we are enabled to get better goods for our money by knowing which contains new wool. A great deal of virgin wool has been stored in warehouses during the past year and the sale for it has been slow because of the dealing of the manufacturers in shoddy material.—H. A. L.

If in need of advice, ask Western Farm Life Service Bureau.

The Branding Iron

The following "Hot Weather Hints" are from the pointed fountain pen of H. W. D., the Kansas Sunflowers man of the K. S. A. C. Industrialist:,

Shimmie on your own side.

Muzzle the pup and send your wife to the country.

Don't argue; RUN.

Wear cool clothes, if any.

Avoid politics, religion, and relatives—as topics of conversation.

Don't cuss, or fret, or fuss, or fume, or fan.

It's a great life.

Don't weaken.

* * *

While we are not unmindful of the East's problem of reduced farm acreage, we are, nevertheless, thankful that the cityward trend is not noticeable in these mountain states. In fact, the trend is the other way. Assessors' figures for Colorado, though incomplete, already indicate that the total number of farms reported for 1920 is 5,000 greater than for the previous year. Only one county in the state shows any abandonment of farms, and there is a special reason to account for this. The reduction occurs in a section where war demands for wheat and beans brought idle prairie lands under cultivation, financed for the most part by business men. There has been no abandonment of farms by actual farmers, and any reduction in acreage by individual farmers has been much more than offset by new development.

* * *

Petaluma, Calif., is advertising its third annual Egg Day for August 21, 1920. Petluma lays (and lays is used advisedly in this connection) claim to being "the world's egg basket," which claim is justified by the fact that six million hens, representing an investment of $20,000,000, inhabit the henneries in that vicinity. The Petaluma Chamber of Commerce is urging hotels to join in an "Eat More Eggs" campaign. Now if we can get the hens to co-operate in a "Lay More" movement all will be happy.

* * *

The Steamboat Pilot remarks that if gasoline doesn't come down several people known to the editor will be pushing their cars around. Nothing new; we know lots of 'em who have had to push their cars with the tank half full; we've helped push.

* * *

Inspired—so to speak—by Lloyd Mifflin's verses "To the Milkweed" which lead Miss Douglass' department in the present issue, the Proof Reader, who took a correspondence course in poetry, contributes the following, of interest to stockmen and dedicated to Dr. Geo. H. Glover:

To the WHORLED Milkweed.

None call thee flower? What would you, poison ivy of the Plain,
Thou vampire luring livestock to its doom!
I'll say thou art no flower! A stain thou art; a blot upon the moor.
Show thy green charms to grazing kine and sheep, unhappy thing,
And weave thy silken web more fine than looms of dusky Ind.
Enticing fair thou art, but hidden woe dost bear in tuft and whorl—
Of strange exotic breed, the poets sing,
But underneath thy gossamer weaving Death doth sting!

Justifiable Efficiency.

Avery Hopwood, the playwright, has often gone on record as opposed to the present efficiency-expert craze, declaring that it is all bunk and nothing but an expensive fad.

"But," he adds, "as in everything else, there are exceptions. There was Boggins, for instance. Boggins was a great efficiency man in the office, but even more so at home. Why, every time Boggins Junior was naughty his father laid him on the floor and spread a rug over him, so that the beating would kill two birds with one stone, as you might say."
—Argonaut.

Comment by Farmer Putnam

LOST ON THE PRAIRIE, TERRIBLE ADVENTURES OF TOM AND JAKE; TRUE STORY OF A SLEEPLESS NIGHT.

LOTS of folks has been wonderin' where to find Salem, which is where Josephine has got her ranch and where she cooks and washes and scrubs fur me, in other words, keeps house—and keepin' house ain't no occupation, accordin' to the census men. Salem is a real place and it's in Arapahoe county and all the old-timers livin' southeast of Denver knows where it is. But I got a new place to tell you about that none of you know yet how to find. Its name is Robertsonville; location near the U. P., about 20 miles east of Denver, on that thar Golden Belt highway. They ought to call it the Oshun-to-Oshun because a feller drivin' over it gits seasick if he ain't got no shockabsorbers on the flivver, or in the backseat. This here new town that I'm boomin' is on the site of a old prairie dog town. They ain't no houses on it yet—only one hotel, the Hotel Maxwell, a 25 h. p., portable, comfortable and roomy lodging place—and that hotel was thar only one night.

This here new town of Robertsonville was discovered by me and Jake Robertson, the Arapahoe county club leader, and I named it in his honor. Him and me and two other fellers was comin' home from a meetin' of the Strasburg Farmers' Union one night. The other two fellers was ridin' in a fliv. and we give 'em the road and followed along behind. It was a nice cool night so we didn't hurry. We didn't want to violate no speed limits, because the auto book sez: "The careful driver is the one that gets there."

We got thar all right; and staid thar! That's how we discovered this here new town. We was hummin' along fine and Robertson was sayin': "I been drivin' this bus two years in my work, all over this county and she's never give me a hint of trouble. I've got a fine engine and that's everything in a car." Just then the engine stopped.

Here, dear reader let us draw the curtain. Let us not dwell on the sad side of this here romance, "Lost on the Prairie, or the Terrible Adventures of Tom and Jake; the True Story of a Slow and Sleepless Night." It don't need to be explained. Anyhow the engine stopped and took a long rest. I sez to Robertson:

"Jake, what makes you stop here? We ain't to Denver yet?"

"No we ain't—not quite—it's only a matter of 21 miles, but wait a while, she'll start up presently. She's probably wore out. I been racing around over the country all week and this is Saturday night. A man ought to have more regard for dumb machinery then to abuse it this way. Just keep your shirt on, we'll be goin' soon."

"I'll keep my shirt on all right Jake," sez I, "this here is no night to sleep shirtless on the prairie. I don't want to git snakebit in the heel."

"Is that your vulnerable spot—the heel—like Achilles?" sez Jake.

Gosh, the feller was bein' overcome by sleep; I didn't know what he was drivin' at. He was foolin' with the sparkplugs on my advice. I told him that was the fust thing to do; unscrew every one of 'em, wipe off the carbon, and then she'd start right up lickety split. He followed my advice. Now when that didn't work I sez:

"The next thing is to try fur a short circuit."

So he done that and she wouldn't start. Then he primed the engine with gas and she wouldn't start.

Then he cranked and he cranked and he cranked until he got cranky. I tried to spin her round, but she wouldn't spin. Finally I got tired of givin' advice and Jake got tired of tryin' to take it and sez: "Well, Farmer, I reckon we're stuck fur the night. Where do you want to sleep?"

"Give me the second floor front with bath," sez I.

"All right, that means curl up in the back seat; you git your bath when that rain cloud opens up on us."

Purty soon all was still around us. Over the lone prairie come the faint murmur of the hoot owl and the long drawn out yelp of a lonesome coyote. I must a dropped off to sleep about that time fur I don't know what happened till I woke up when I heard Jake say:

"Fur the love of Mike, Farmer, are you runnin' a sawmill?"

"Z-urz— zurz-shrupp!!" sez I sittin' up. "Did somebody knock? Come right in bellboy."

Then I seen I was still in the backseat of the Hotel Maxwell and not in a brass bedstead in the Brown Palace.

"Ain't you got this durn bus started yet?" sez I.

"I hain't and I don't intend to start her. I'm tired," sez Jake, "and the car's tired. I'm goin' to camp here till a. m.; it's Sunday by this time anyhow and no hurry about me gittin' in, so let's make the best of it and go to sleep."

So we both pretended to go to sleep and I dreamed that I was the owner of all the prairie between thar and Denver; that every acre of it was broke out and planted to prickly pear cactus, which I was raisin' fur cattle feed, expectin' to burn the spines off with torches. I was makin' money offen that kind of feed when my luck changed and a bunch of Indians come springin' up outen the grass and drove me acrost my cactus field barefoot. That woke me up ag'in and I couldn't hardly raise up. I was crunched up with my knees under my whiskers and one of my feet was so sound asleep that it hurt, just like they was needles goin' through it. I reckon that's what made me dream of cactus.

"Jake," sez I, "are you asleep?"

I couldn't see him anywheres, but I heard his voice comin' up from the front seat and he was half hangin' outen the side door, havin' draped hisself gracefully around the emergency brake, with the self starter under the small of his back, his head restin' easy on the clutch, and one hand graspin' the gearshift. His engine was runnin'—not the engine of the car—and while he wasn't sayin' anything, he made a noise like he was runnin' in low. It was my turn to wake him up, so I sez:

"Fur heaven's sake Jake, throw her in high and close your muffler; you're keepin' the prairie dogs awake!"

This is the kind of a pleasant time we had till the faint glimmer of dawn, which we read about in them novels, come glimmerin' acrost the eastern sky in all its glorious bust of color. I cain't help gittin' poetick when I'm out that way spendin' the night with a friend on the bosom of the prairie. It's a great experience; it makes a man better to commune with nature. I know it does, because me and Jake both let out a lot of cussedness in them still hours of the night.

That's how we come to discover the new town. Just before I started back fur Watkins I got the idea when I seen the inhabitants of this here dog town hustlin' out fur their breakfast. They ain't enough houses in the big cities; now why not do like them prairie dogs and build burrows? Well, I told Jake about it and he sez:

"Farmer Putnam, you've hit on a sound idee at last; you ought to take out a patent on it."

I told him I was not goin' to be selfish about it, because humanity needed them thar idees. I set to work to make a survey of the town. They was several hundred burrows. Now all that has to be done to 'em is to enlarge the entrances and dig out the underground chambers till they're big enough fur humans. I staked out two or three streets in Robertsonville, namin' one Vanderlip avenue, which is the main street of my town. Next to that is Totten Blvd., and then Dodd st., and the rest is still unnamed. I put up a sign readin' "Apartments for rent at low rates; renter does his own remodeling to suit taste and size of family. Apply T. J. Putnam, Salem, Colo."

After I finished my sign I left Jake to wait fur somebody to come out from Denver and tow him in; I went over to Watkins and caught the U. P., after havin' spent one of the pleasantest nights that it was ever my pleasure to spend out on the prairie. Except fur a few facts inserted gratis to fill space, the above is a true account of our adventures. This is only half of the story. I told Josephine the other half, as a excuse fur bein' out all night, but she don't believe it.

I don't know what Jake told his folks, but the above is what we agreed on fur the public.

THOMAS JEFFERSON PUTNAM.

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Powerful, superior construction. Some ECLIPSE WINDMILLS erected 38 years ago are still pumping—without repair expense. Figured on this basis the ECLIPSE delivers a reliable water supply at a cost of about $1.65 a year, the cheapest possible.

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are best wherever an unfailing spark, ring, etc., is needed. Buy them by name—and look for the "Red Seal." Your protection and your guarantee.

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Under our plan, every dealer's supply is always fresh. No chance for you to get run down stock. Ask for Red Seal Dry Batteries — the batteries that thousands of farmers demand. You need them.

Note—Your dealer has a book, "How to Run the Gas Engine — Simplified," free to users of Red Seal Batteries. Ask for it when next you buy batteries.

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and through the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Dry Farming Is Successful.

Will you tell me briefly just what you think of the "dry farming" proposition? I have read that there are a number of good locations in the northwestern part of the state where a man can homestead and make a fine living dry farming. I have not the capital to buy an irrigated farm, and do not believe I would care for that kind of farming anyway, although it is the only kind of farming in which the element of chance is eliminated. I contemplate taking a trip out over the Divide this summer, but my time will be short and I desire to get through with as little expense as possible.—J. A. G., Missouri.

Dry land farming, which means farming without irrigation in regions where the rainfall averages 12 to 20 inches a year, is a decided success. Most of the land area in eastern Colorado is being farmed in this manner. Our irrigated lands are confined to the valley sections and many thousands of acres of upland which cannot be reached through irrigation water will always be handled under what is known as dry farming methods.

There are also large sections in northwest Colorado and in the southwest part of the state, which are being developed in the same way. It is hard to answer your question, "What part of the state is best?" because the answer depends on various factors. There is some good land in every section.

People who are willing to undergo some pioneering hardships and put up with inconveniences for the purpose of securing cheap lands do not mind the handicap of remoteness and poor transportation. However, you should not set your hopes high regarding free homestead lands. There are such lands, many thousands of acres as yet unsettled, but some of these are located at altitudes of 7,000 feet and upward, where the winters are rather severe and long and the crop growing season is short. Other sections are so far off the railroad that it is hard to develop them into paying farms under present conditions.

There are, however, desirable lands lying close to the railroads now held in private ownership, which can be purchased at comparatively low figures. This is true in eastern Colorado as well as in the remoter sections. In eastern Colorado such lands were originally homesteaded or purchased from the large grants that were given the railroads in building through this western country fifty years ago. Prices on unimproved lands of this character, which can be developed under dry farming methods, run from $15 to $40 per acre.

Scrub Bulls on the Range.

I would like to know if it is permissible for owners of livestock to castrate a scrub bull on the open range? We have a bull which we have no papers on and it got out of the pasture a few days ago and was immediately castrated. The foreman of the outfit told me that he or anybody had a right to castrate any bull which had no papers. This bull was three years old and weighed about 1,500 pounds.—Subscriber, Colorado.

The state law gives any stock grower the right to castrate any inferior bull permitted to run on the range. It specifies that at least one bull of not less than 18 months of age must be furnished for every 25 head of cows or fraction thereof over 10 head, and that such bulls must be at least one-half blood, or high grade. The law expressly forbids the running at large of Jersey bulls, and this provision is everywhere considered by stockmen to apply also to bulls of all other dairy breeds. If your bull is not a high grade animal the person finding him on the range had a legal right to castrate him. It has become the common custom on many ranges to keep off all bulls that are not registered, and although the law confers the right of castration only in case of inferior or low grade bulls, stockmen who run registered bulls have agreed, for their own protection, to keep all unregistered bulls off their range. In this case custom virtually makes the law and the owner of a grade bull has little chance of recovering damages, in case an animal belonging to him is castrated.

Detectives Must Have License.

Will you kindly inform me if in this state or any part of it a license or bond is required to work as a private detective? I have just completed a course from a detective agency. Will I be subject to prosecution should I solicit business by advertising or by mail?—Subscriber, Colorado.

Chapter 43 Revised Statutes of 1908 require detectives to take out a license costing $100 and to enter into a surety bond from $3,000 to $20,000.—Hamlet J. Barry, 724 Equitable Bldg., Denver, Colo.

B. Has a Legal Contract.

If A. hires B., and B. works all winter for A., in the spring A. gives B. a garden space in the presence of B.'s wife C. B. and C. plant the garden and afterwards B. moves on his homestead joining A. Could A. refuse to let B. hold his garden or keep B. from gathering the vegetables?—A. C. F. Huerfano County, Colo.

In my opinion B. has an oral lease, and being for less than a year need not be in writing. The lease therefore is good and B. can gather his vegetables. —Hamlet J. Barry, 724 Equitable Bldg., Denver, Colo.

Running Goats on the Range.

What is the law with regard to goats running on the range? Does it require a herder with them if they are turned out on the range? Can they be taken up and held for damage if they break through a lawful fence?—J. Y., Custer County, Colo.

The state laws contain no provision regarding goats on the range. This means that no herder is required with goats and that they can be run on the range just like cattle. There is a law, however, which forbids the running of sheep without a herder in flocks of ten or more at, or within two miles of the limits of any city, town or village. If they break through a lawful fence the owner is held liable for damage to crops and they can be taken up under the state law.

Poison for Grasshoppers.

1. A green bug about half an inch in length completely destroyed my Irish potatoes. What is the remedy?

2. Grasshoppers have entered my garden and destroyed onions at ground surface. What is the remedy for such pests? Y. J. A., Prowers County, Colo.

1. We are unable to determine from your description what kind of a green bug it is that is attacking your potatoes. Would suggest that if the injury is serious you collect a dozen or two of the insects and mail them to Prof. C. P. Gillette, State Entomologist, Agricultural College, Fort Collins, for identification. Undoubtedly it is one of the common potato pests which can be reached by spraying with Paris green or arsenate of lead. Under present conditions arsenate of lead is the cheaper poison to use and is just as effective for destroying ordinary garden worms and bugs. It is sold in both powder and paste forms. In small gardens 2-3 of an ounce of powdered arsenate of lead or ten level teaspoonfuls to one gallon of water, is used in making a spray. This is applied with a small hand sprayer. It can be used on potatoes, cabbage and other similar crops. The number of sprayings to be applied will depend on the insect and on local seasonal conditions.

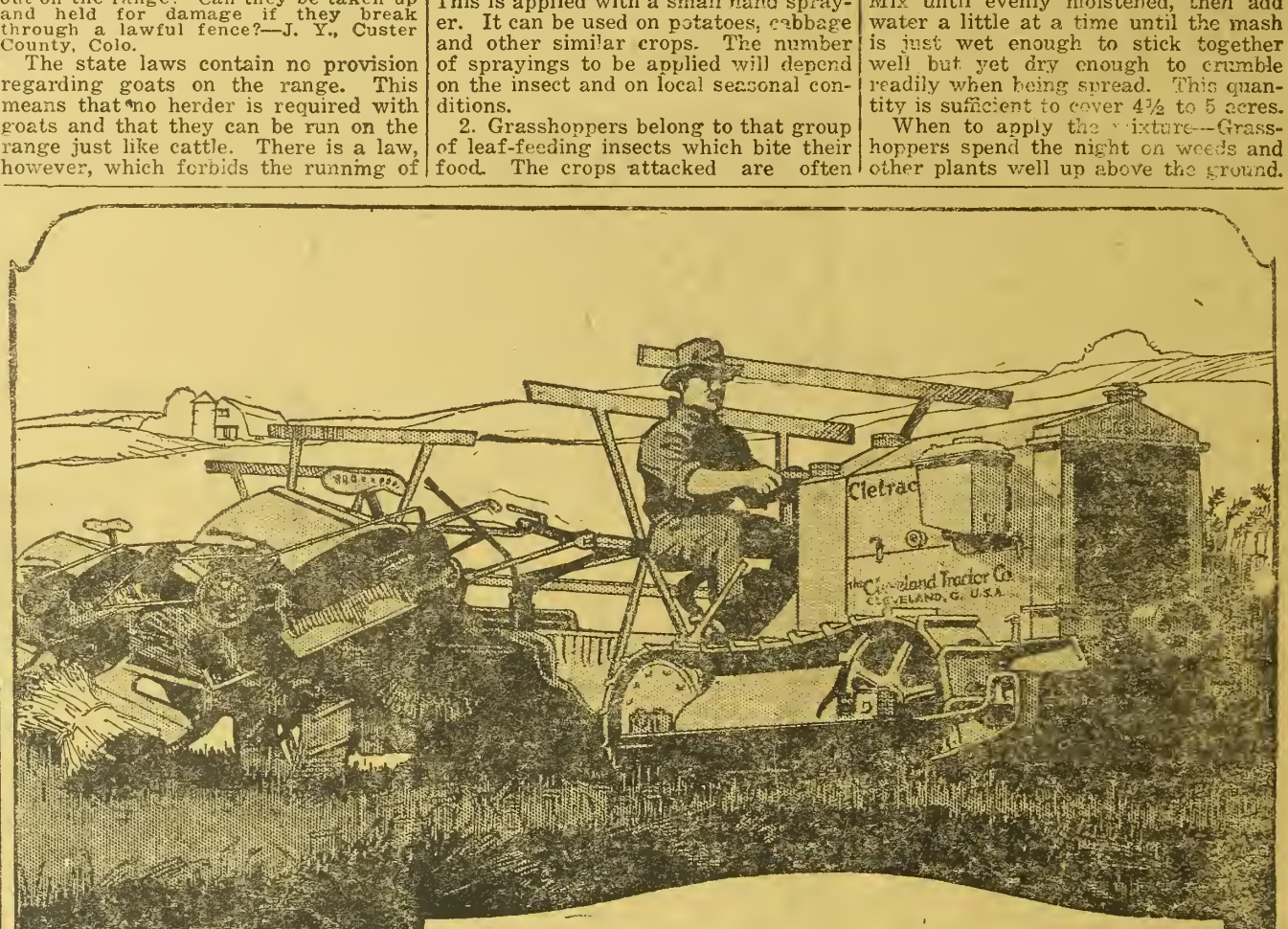
2. Grasshoppers belong to that group of leaf-feeding insects which bite their food. The crops attacked are often completely defoliated, and in the case of root crops such as sugar beets, turnips and others, the roots are often eaten as well. During recent years grasshopper injury has usually occurred near wild land or waste land about the borders of fields, roadsides, ditch banks and fence rows, which are favorite breeding grounds of all grasshoppers. With the passing of the Rocky Mountain locust the migration of large swarms of grasshoppers from long distances appears to be a thing of the past.

The most effective remedy employed in the control of grasshoppers is the poisoned bran mash known as the "Kansas Mixture," which is made of the following ingredients:

Bran	25 lbs.
Paris green	1½ lbs.
Molasses	2 quarts
Lemons	5
Water, about	3 quarts

How to prepare the mixture—In preparing this mixture proceed in the following manner: Thoroughly mix the bran and Paris green while dry until the whole has a uniform greenish color. Take about two gallons of water and add to this the molasses and lemons after the latter have been finely ground, rind and all. Stir this mixture until the molasses is completely dissolved, then pour it over the bran and Paris green. Mix until evenly moistened, then add water a little at a time until the mash is just wet enough to stick together well but yet dry enough to crumble readily when being spread. This quantity is sufficient to cover 4½ to 5 acres.

When to apply the mixture—Grasshoppers spend the night on weeds and other plants well up above the ground.



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YOUR Cletrac fleet keeps going steadily through the heat and strain of the harvest rush—and helps you beat the labor shortage.

Each sturdy Cletrac hauls two binders easily, cutting full, clean swaths and getting all the corners. Quick response to the steering wheel and short-turn ability fit this tank-type tractor for accurate, profitable harvest work.

While part of your fleet is finishing the harvest, the others "get away" to an early start in plowing, and they make quick work of it before the sun dries out the stubble.

Cletracs follow close behind the plows, too, in fitting. They prepare a moisture-holding top mulch. They do not sink into fresh-plowed ground—do not form tractor hard-pan.

An improved water air-washer protects the powerful Cletrac motor on these dusty, dirty jobs. Keeps the tractor working smoothly as it helps you farm more acres.

Cletracs are a big-paying investment for the grain farmer. Let us tell you more about them.

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Not until after the sun rises and they have become warmed do they become active and begin feeding. After their night's fast the hoppers are hungry, so that if the poisoned bran is scattered before they begin feeding in the morning the best results are secured. If the mixture is put out in the evening it loses much of its odor during the night and is less effective as a result. When put out after the hoppers have filled up in the morning they are less hungry and do not eat so freely of the bait as earlier in the morning. Then by the time they are ready for another meal the sun has dried it more or less, which makes it less appetizing.

Dry Farming Questions.

Answer to questions of R. A. Z., Baca County, Colo.:

You ask whether a pit silo is more practical than one above ground. Pit silos are more common in eastern and southern Colorado than the above ground type for the reason that they are less expensive and they answer the purpose quite well where farmers have small herds of dairy stock. The only objection is that it is rather a laborious process to raise the silage from the pit and this cuts quite a figure where a man has a large herd. The pit silo, however, has several advantages over most other types. Silage will not freeze, the silo can not blow down and it is absolutely fire proof.

Red clover, timothy and June clover are not considered suitable for dry land crops. You also mention white beans. The pinto or spotted bean is a better dry farming crop than the white bean and it is extensively grown in eastern Colorado under dry farming conditions.

Potatoes make a good dry farming crop on certain soil types, especially the sandy loams. Regarding shade trees, you can get detailed information from Prof. W J. Morrill, State Forester, care Agricultural College, Fort Collins, Colo.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Tails Drop Off the Pigs.

Would you please tell me what to do for little pigs that have sore ears and some of their tails are coming off. The hind legs are also sore and lame.—G. H., Huerfano County, Colo.

This may be due to sunburn, but probably is necrobacillosis. Necrobacillosis is a general term indicating several diseases caused by the necrosis germ. Among these are, contagious foot rot, calf diphtheria, necrotic soremouth, necrotic enteritis, etc. If these pigs are examined carefully, it will probably be found that there are ulcers either in the mouth, stomach, intestines, inside of the sheath, or swellings on the head or elsewhere on the body. This disease has probably caused a greater loss among hogs in Colorado than has hog cholera, although it is a chronic disease. The ulcers should be treated with lunar caustic. Little pigs are must usually affected. It will be well to dip them in a tub containing a solution of potassium permanganate, made by dissolving one heaping teaspoonful in a half gallon of water. Pigs should be provided with shade during the hot days of summer and the food should represent a well balanced ration. Recently all of the hogs on a farm were found to have had their tail eaten off to the backbone. They were eating each other's tails and were otherwise in a very unthrifty condition. The ration was balanced by adding tankage and recovery was complete. They needed something that they were not getting in their food and in this instance it probably was protein. With these suggestions, look the proposition over and let me hear from you again.—G. H. G.

Horse Has Sweeney.

I have a fine filly just past three, that I worked with three other horses to a sulky plow about three hours one day. I noticed before I quit that she was traveling queer. I haven't worked her since and she hasn't been lame for several days. I have been rubbing her shoulders thoroughly with a liniment frequently. But there is quite a depression in each shoulder three or four inches back from where the collar works and extending 6 or 8 inches vertically. Will it hurt her permanently? Can those muscles be caused to build up and fill those depressions in her shoulders? The filly is fat and feels fine, runs, jumps and plays, is running on the orairie.—L. F., Huerfano County, Colo.

Paralysis of the suprascapular nerve (sweeney) is due to mechanical injury to the nerve where it turns round onto the outer surface of the shoulder blade and is placed superficially an inch or two above the shoulder joint. It is usually caused by a badly fitting collar, although it may be caused by a more direct and sudden injury. As a result of the paralysis the leg has a tendency to move backwards and outwards when weight is first placed upon it. The slipping of the shoulder outwards (shoulder-slip) causes a gap of variable size between the shoulder and the chest wall. The paralyzed muscles degenerate and undergo atrophy about the second week, which may last for several months. The tendency is toward complete recovery without treatment. This may be depended upon unless the nerves have been seriously injured. Do not submit the animal to heavy work. The horse will be better off in a pasture or may be driven, with a breast collar, in a buggy. Mild irritants to the wasted muscles will be beneficial. Do not blemish the animal by heroic blisters. Try massaging for two weeks, followed by mild liniments. Later it may be advisable to apply a mild blister occasionally. The horse should recover in time for fall plowing. It is well to remember that a collar which will fit a horse when work begins in the spring is quite sure to be too large for him a month later. It is usually the large collar that causes sweeney.—G. H. G.

Diagnosis Is Uncertain.

What is wrong with this horse? Is there any medicine or otherwise that I can cure the trouble? I do not think that it is strain halt, as he only shows signs of the trouble just when he is grazing or standing around, he never does this when traveling. He will draw his foot or hind leg up as high as he can as if he had cramps. The muscles of his thigh, flank and hip will tremble and he appears as if it pains him. He raises this leg for a moment and then raises the other foot in the same manner.—J. R. J., Montrose County, Colo.

This case probably represents a disease of the coverings of the spinal cord, or of the large nerve trunks leading from the same. Again it may possibly be caused by pain in the kidneys, bladder or elsewhere. Ask your veterinarian to make an examination. Potassium iodide may be indicated, but any treatment in advance of diagnosis would simply be guesswork and scarcely worth while.—G. H. G.

Cannot Get With Calf.

Have a heifer that has had five services since last September; no signs of pregnancy. Milk runs from her all the time. Should she be milked. Is 22 months old; never had a calf; seems to be normal in every other way; good appetite, comes in heat regularly about every two weeks. What would you advise?—W. M., Fremont County, Colo.

In the physiology of pregnancy, the abnormal condition of the heifer is explained by abnormal development of the ovaries. The ovaries being undeveloped or abnormal the heifer will probably never get with calf. She will never reach a maximum milk flow without becoming pregnant. The milk is no doubt perfectly wholesome, but she will not be a profitable milk cow and had better be fattened for the block. Just what her condition is can only be determined by examination, and this by an expert. Competent veterinary assistance can be obtained at Pueblo. Otherwise it may be well to keep her for a few months and if she fails to conceive, fatten her for the block.—G. H. G.

Collie Has Paralysis.

I have a fullblooded Scotch collie dog about 15 months of age, which has lost the use of his hind legs. I do not believe he has been injured in any way, and treatment for worms has not brought about any improvement. He seems to be in good health, but cannot move around without dragging his hind legs. What would you advise?—E. A. S., Costilla County, Colo.

Paralysis of the hind legs in dogs may be caused by many things, among the most common of which is canine distemper. Most dogs have distemper before they are one year old, although they may have it in a light form. Your statement that "he became sick about three weeks ago and a few days later lost the use of his hind legs," indicates distemper. At this time there is not much that can be done. Canine distemper serum is to be considered. The paralysis results from the effects of the specific toxin of canine distemper, much the same as paralysis sometimes follows diphtheria in children. Aside from the biologic mentioned, there seems to be nothing that can be depended upon to benefit these cases. With good care he will probably recover.—G. H. G.

Colorado State Farm Bureau News

Matter appearing in this department relates to the activities of the State and National Farm Bureaus, including official communications from the Colorado State organization and general reports, calculated to keep farmers informed regarding progress of this great educational movement.

Wool producers will be interested in the following report from the special committee of the American Farm Bureau Federation, which joined with other representatives of the sheep raisers in a successful effort to finance the producers through the present crisis. This is an example of the manner in which the Farm Bureau through its machinery reaching up from the producer in his local community to the county organization, thence to the state and finally to the national bureau, is able to accomplish results quickly.—Editor.

The need for early return from the wool clip exists in a serious way in the range states where the wool growers are primarily and altogether sheep raisers, and to a degree in all fleece wool states. For wools that are consigned, it is customary for the commission houses to make an advance payment of 75 per cent in order to enable the seller to continue his business until he receives the final returns from his clip.

The data presented below show the amount and value of the wool, of the various states, which we estimate has not been realized upon in any way and from which some revenue must be derived to make it possible for the owners to continue their business.

The following table shows for a number of states the reported production in 1919 and our estimate of the amount of the 1920 clip that has not yet been sold or advanced upon:

States—	1919 Production. Pounds.	Est. Amt. Wool not sold or advanced upon Pounds
Arizona	15,000,000	2,500,000
California	13,000,000	12,000,000
Colorado	9,000,000	8,000,000
Idaho	21,000,000	10,000,000
New Mexico	15,000,000	15,000,000
Nevada	10,000,000	5,000,000
Montana	22,000,000	14,000,000
Oregon	13,000,000	16,000,000
Texas	14,000,000	14,000,000
Utah	16,000,000	5,000,000
Washington	6,000,000	2,000,000
Wyoming	34,000,000	20,000,000
South Dakota	5,000,000	4,000,000
	193,000,000	127,500,000

In addition to these amounts, there is a total of 68,500,000 pounds in the states of Maine, New York, Pennsylvania, West Virginia, Kentucky, Ohio, Michigan, Indiana, Wisconsin, Minnesota, Iowa, Missouri, Kansas, Nebraska and Illinois.

In our opinion, the loans necessary to be placed on this unfinanced wool will amount to a total of $50,000,000.

The growers were first called upon to present their case and showed that the year 1919 was one of record breaking prices for feed as well as labor, and in addition to that, range conditions were such that the lambing crop of 1920 was approximately 60 per cent. Conditions in the east were somewhat similar due to an excessively hard winter and high feed costs. Regardless of these high production costs, the wool market in the past two years has been gradually declining, while woolen products have been constantly appreciating in value.

The records of the Bureau of Markets show that wool prices in March, 1919, were averaging 25c a pound for the grower, and that in May, 1920, the average price was 63c, showing an advance of approximately 150 per cent; while cloth—16 oz. clay worsted—in March, 1919, sold at $1.30 per yard, and in March, 1920, the price was $5.45, showing an appreciation in value in excess of 300 per cent. It was further shown that at the present moment, while dealers and manufacturers are talking in terms of reduced prices, retailers and jobbers say that no reduction in the price of finished products is being made to them and in certain sections prediction is made that those holding discount sales will be obliged to replenish their stocks at prices higher than were paid for the goods sold.

The relation of the finished product to the price of raw wool was discussed and it was clearly demonstrated that the price the grower received for his wool had no effect on the price the consumer paid for his finished product, the initial cost for material entering into a suit of clothes being so small that in a $100 suit the difference between a price of 20c a pound and a price of 70c a pound, to the grower, would not amount to more than $2 on an entire suit. In 1919 woolen cloth manufactured from wools produced in 1918 and costing 20 per cent more than they did in 1919, were sold on the market at a cost of over $1 less per yard than the same grade, made out of the cheaper wool stocks and sold the subsequent year.

Another interesting sidelight on the market trend shows that while in 1910 the price that the grower received—approximately 30c per pound—was within 6c per pound of the price the dealer received and that this level was practically constant up until May or June of 1919, yet in May, 1920, when the price to the grower was averaging 63c, the price the dealers received ranged from 70c to 97c, showing conclusively that if there is an abnormal advance in wools at the present time, those who have benefited by it have not been the producer, but rather the dealer.

The quantity of wool stocks available, both in the United States and in the world, was next discussed. The general opinion, with one or two exceptions, was that wool stocks of the world at present were not excessive; in fact, considering the world's enormous need for wool, stocks were thought to be somewhat subnormal and that the quantity of wool held by England and Australia was not in excess of 1,400,000,000 pounds, and this represented the largest available supply in any one section of the world. Manufacturers' lofts carry no excess stocks of wool and stocks of manufactured goods are low and mills must purchase wools before starting to fill trade orders.

No effort was made by growers to fix or determine on a fair market value for wools, as the growers realize that wool is not a commodity restricted only to the United States, but that it is a world product and the vast majority of it is under the control of the British government, and that prices ruling at London sales must, to a large degree, determine the values the American growers can hope to get for wools of similar grade. The opinion of this committee is unanimous that this is not the time for slaes as no legitimate market exists and sales can only be made in a speculative way to those men who are safely figuring on making profits on the deal.

At the close of the discussion setting forth the situation, the representatives of the wool growers appointed a subcommittee consisting of bankers thoroughly familiar with the entire situation to further confer with the board for the purpose of perfecting a plan. The outcome of this conference was the formulation of the following statement which has been authorized by the Federal Reserve Board:

"A wool grower may ship his wool to one of the usual points of distribution, obtaining from the railroad a bill of lading for the shipment; the grower may then draw a draft against his bank for such an amount as may be agreed upon by the grower and the bank, secured by the bill of lading. The Federal Reserve Act authorizes any member bank to accept a draft secured in this manner at the time of acceptance, provided that the draft matures in not more than six months from the time of acceptance. After acceptance such a draft bearing the endorsement of a member bank is eligible for rediscount or purchase by a Federal Reserve bank, provided, that it has a maturity of not more than three months from the date of rediscount, or purchase.

"It was suggested that the Federal Reserve Board communicate with the Federal Reserve Banks, pointing out that shipments of wool to points of distribution may properly be financed by acceptances in the above manner."

While the statement refers only to acceptances based on bills of lading, Governor Harding referred those present to the provisions of Sections 13 of the Federal Reserve Act, as to eligibility for discount of paper secured by warehouse receipts.

Lincoln County Stock Farmers Form a Shipping Association.

For some time the farmers of Lincoln county have been in need of more equitable methods of marketing live stock. The local buyers who were forced to depend on an occasional shipment and an unsettled market, have bought on a wide margin, while the farmers who had to depend on high priced feed and labor have been loosing money on most all stock marketed.

To meet this demand for better marketing facilities, the Lincoln County Farm Bureau took up the work and circulated a petition to obtain the assistance of a livestock specialist from the Agricultural College, in organizing a livestock shipping association.

Prof. R. W. Clark of the Agricultural College assisted at the meeting held in Hugo on Saturday, June 19, at which the Lincoln County Livestock Shipping Association was organized, and the following board of directors elected: John Huffman of Limon, Lawrence Anderson of Bovina, J. E. Simmons of Hugo, Ludwig Kuhl of Hugo, and George Hatton of Boyero.

The plan of the work is to employ a manager who will devote his entire time to the work. He will ship from any point in or near the county where a carload of Lincoln county stock can be obtained. He will receive for his work an amount to be decided on by the board of directors, but not to exceed 25 cents per 100 on all livestock shipped. This will mean quite a saving to the farmers as the local buyers have often been taking $2 or more per 100. Arrangements will also be made to insure all stock against loss in shipping.

List your stock with the association and get the full market value less the actual cost of marketing.

For further information call on the county agent or any of the board of directors.—Scott Wisner, County Agent.

Western Farm Life: Enclosed find P. O. order for $2 as per your subscription offer. Keep it coming, it is a good paper for the western farmer. I don't want to farm without it. Parsons' articles are good and logical and Farmer Putnam letters are always welcome.—E. H. Holtsclaw, Byers, Colo.

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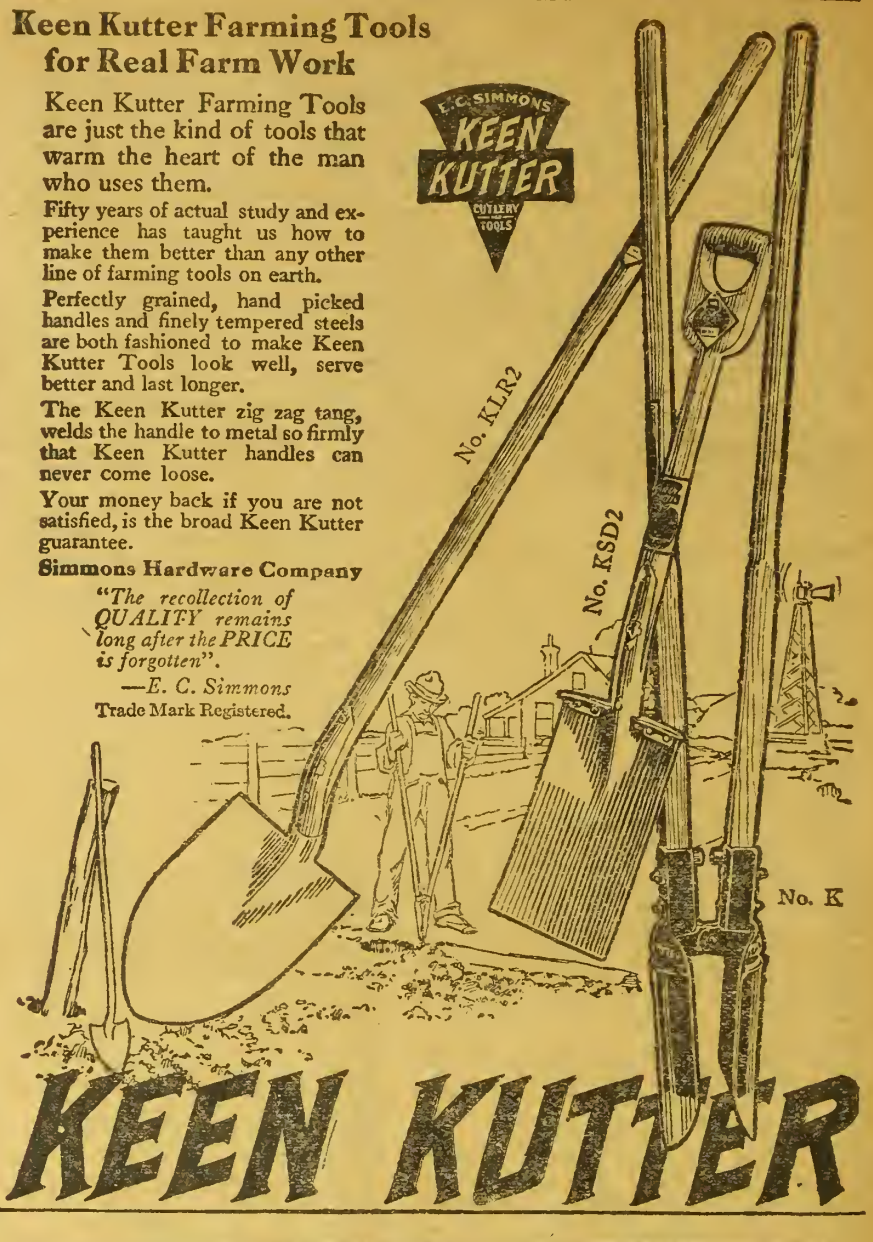

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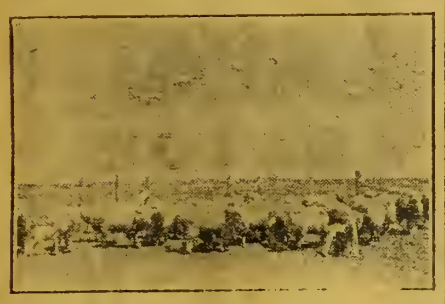
K. HADDELAND,
Dunn Block, Great Falls, Mont.
Canadian Government Agent.

Sheep on Summer Fallow.

The animal investigation section of the State Experiment Station co-operating with the government field station at Akron, Colo., are trying to determine the value of sheep on the average dry land farm. An experiment which has just been started at the Akron field station has been planned with the idea



Ewes and lambs being used in experiment at Akron, Colo.

of showing the benefits that can be secured by carrying a breeding flock of sheep along with the general dry farming scheme from year to year.

It is believed that the sheep will tend toward a cleaner cultivation of the land by eating the weeds and that the different fields included in the rotation will, at different times during the year, furnish stubble and fodder that will tend to keep the maintenance cost of the flock at a minimum. In the case of fallowed land it is believed that at least one cultivation can be saved where sheep are allowed to keep the land free from weeds. At the same time data are being secured on the carrying capacity of the native sod and botanical observations on the flora are being taken to secure complete information regarding grazing problems.

The test has been planned to include three lots of ten ewes each.

These three groups will be run respectively on three ten-acre plats. The first plat will consist of native sod alone which is used as a check to show the carrying capacity of typical grazing land. The second and third plats will represent miniature dry land farms each having eight acres under cultivation and two acres in native pasture.

The land under cultivation in these two plats will comprise two standard dry land rotations. In one plat the rotation will be corn, barley, summer fallow and winter wheat. In the other plat the rotation will consist of corn, barley, winter rye (pastured in spring and then turned under), and winter wheat.

The sheep secured for this test are 2-year-old grade Rambouillet ewes. They produced this year a 90 per cent lamb crop, consequently there are nine lambs included with each lot. They will be pastured along with the ewes until fall, each year, at which time several of the best ewe lambs will be saved with the idea of gradually replacing the flock and making it a permanent one. The remaining lambs will be sold each fall.

As will be noted, the experiment this year has been planned for all three lots on the basis of one sheep per acre. This experiment should furnish some valuable facts for dry land farmers. It is planned to issue a report next fall covering the first summer's work.—E. J. Maynard, Specialist in Animal Investigations.

Niagara County Apple Growers Know How to Pack.

(Continued from Page 5).

Care of the Orchards.

As we go out over the county one sees in the fruit districts that nearly every grower is helping his trees to do their best. Orchards are carefully pruned; either careful tillage is maintained, or cover crops are grown in the orchard. The old-time weed infested orchard, trees smothered at the root and trunk with suckers, sod bound and sick looking orchards are the exception, not the rule. The first orchard man the writer got a chance to interview was Mr. F. M. Bradley, an old-time chum of Ed Mathews, our pioneer orchard grower in the North Fork country, on the Western Slope. Mr. Bradley said:

"You know over 80 per cent of the apple is moisture. We cannot make it rain here whenever we want it to, by just going to the irrigation ditch and let the water come. We depend on rainfall and must husband what moisture the Lord Almighty gives to our district. We have found that a good soil mulch helps us to hold moisture. Therefore, at least every alternate year, we maintain, by good cultivation, a careful soil mulch. Then on these off years, or every other year, we can grow rye, vetch, red or medium clover, or some other cover crop in the orchard, taking care to seed to this cover crop at such time, in the late summer or early fall, as shall not rob our ripening fruit of the moisture needed for proper maturing. We plow this cover crop under the following season in late May or early June, so the fertilized bloom shall have ample moisture to bring on the embryo fruit in a natural and desired manner. These cover crops put in middles, between rows of trees, feed, by their decay, vegetable matter into our soil, right where the roots of the trees can make the best use of it. Of course, as far as we have the old stand-by—good old barnyard manure—we use it in our orchards. You know the livery stable has gone from our towns and the farm auto does not make much of a manure pile. The chickens are all over the farm, so their droppings do not collect to a very great extent.

"We fruit farmers are too busy getting orchards in shape to produce a profitable crop next year, to milk many cows. Commercial fertilizers are too expensive to be profitable. So we must use our best heads and, by careful farm practice, carry on, as best we can."

When one looks at this orchard man's farm of 225 acres, each field in the pink of condition, and sees his substantial barns, granaries and other outbuildings, and sees in the very foreground that fine farm home, which would grace the residential district of any modern city, one is led to say that this man is a success in every sense of the word. He farms with his head as well as his hands.

The next farm down the road had an orchard fully fifty or more years old. A cover crop of medium or red clover was all over the orchard. "Next week," said Mr. Peet, "this man plans to turn all this crop under. He gave a good soil mulch last season."

Orchard a Century Old.

The next orchard had a good crop of winter rye, which was just being turned under to feed, by its decay, vegetable mold into the orchard soil. We now come to an orchard with some of the largest trees the writer has ever seen. Some of the trunks are full three feet in diameter. Mr. W. M. Dolan of New Farm, on the state highway into Lockport, the county seat, is the owner of this orchard. In answer to our questions, Mr. Dolan stated:

"Yes, this orchard is much older than I am. That five-acre block you see over yonder, is 90 years old. We have deeds which go back to the Old Holland or Dutch grants, so we can definitely state its age. We have one or two of the old-time Blue Pearmain trees put out by the "patroons" of that early day, still bearing reasonably well. That tree yonder, is an old-fashioned pie apple, a French variety. The most of my orchard consists of our standard types, Baldwins, Russets, Greenings, etc. We find here, that it is a good plan to cultivate alternate years. This is my year to do this. On that five-acre block of ninety or more year old trees, I am using chips, corncobs, etc., to feed potash into the soil. I find that gives me good results. I get my cobs from the mill to put on this orchard block. It feeds color into the fruit and greatly invigorates the trees. You will not believe it, but some of those older trees gave me, last year (1919) twelve to fifteen barrels of apples. In 1896 from that tree yonder (pointing with pride to a monarch tree), I gathered twenty-two barrels of good quality apples."

This man has eighteen acres in apples and twenty-two acres in peaches. As we went along and talked with these growers we found they were following careful orchard culture because they were members of a central packing house association and wanted to have the very highest percentage of good quality fruit possible. They assert that this pays in dollars and cents. Each man had displayed in a conspicuous manner, where it was visible from the highway, a placard which reads: "Niagara County Farm Bureau, (here name of member), (1920.)" We found that this one county has 2,300 paid up members, for Niagara county has had the record in the past of more paid up members of the County Farm Bureau than any other county in the nation.

Concerning Sheep Grazing.

Do the Colorado laws allow sheep to graze right up to man's fence on deeded land, or is there any certain distance you could force the sheep to stay back from your fence?—B. H., Montezuma county, Colo.

There is no law covering the point you bring up. Colorado is an open range state and sheep are allowed to graze right up to the fences. There is a provision in the law which forbids grazing along roads or lanes that are fenced on both sides with a lawful fence but no provision of any kind regarding the use of the range.

Make Every Minute Pay Dividends

DURING these days of short working hours, high wages and unsettled labor conditions, every hour saved for essential work is money in your pocket. Every hour you spend on the road between your farm and town represents unproductive time. During your busy season someone is getting high wages for this time, or you personally are spending valuable time. Make every minute pay dividends. Reduce the number of hours spent on the road and increase the hours of productive farm work.

You can haul your farm products to town with an *International Motor Truck* and haul supplies back to the farm in about one-fourth of the time that would be required with a team and wagon—a road saving of 300%. Thereby you save, during the year, many hours for necessary farm work—hours and minutes that total into days. You save money in wages, or at least make the high wages that you are paying someone pay you greater returns.

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Dairying and Hog Raising

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All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, Western Farm Life, Denver, Colorado.

Milk Production Statistics.

The importance of the dairy industry is indicated by the fact that during the calendar year 1919 approximately 90 billion pounds of milk were produced in the United States, enough to provide nearly 850 pounds for every man, woman and child or practically two and one-third pints per day. On the basis of the average 1919 prices this milk had a cash value to the producer of more than $2,000,000,000.

Approximately half the milk produced is used in the production of various manufactured dairy products.

The number of cows estimated by the Bureau of Crop Estimates is as follows:

Number of cows on farms January 1—

1919	23,475,000
1920	23,747,000
Average number on farms for year	23,611,000
Estimated number of cows in cities and villages	1,400,000
Total number of cows	25,011,000

From census reports, from the records of cow-testing associations and from surveys made by the Department of Agriculture and various agricultural experiment stations it seems fairly safe to estimate the average production of cows properly classed as dairy or milk cows at from 3,800 to 4,250 pounds a year. The average number of cows on farms for the year 1919 was 23,611,000, to which must be added the number in cities and towns, making a total of 25,011,000. Granting that 10 per cent of the farm cows were heifers or nonproducers, the average number of producing cows would be around 22,650,000. On an assumed average annual production of 4,000 pounds each, these 22,650,000 producing cows should have produced 90,600,000,000 pounds.

Special Prizes for Holsteins.

The Holstein Friesian Association offers special pribes to be awarded at the leading fairs of the country. Colorado State Fair will receive prizes amounting to 20 per cent of the general Holstein classification, except championship classes. The National Western Stock Show at Denver will receive special cash prizes amounting to 25 per cent of the general Holstein classification, except championship classes.

Western Slope Fair, Montrose, will receive two silver cups to be awarded to the exhibitors of the best aged herd and the best young herd. At the Northwest Livestock Association show at Lewiston, Idaho, special cash prizes will be awarded, amounting to 15 per cent of the classification, excepting the championship classes. The same will be true at the State Fair at Boise.

In Wyoming at the State Fair held at Douglas, a silver cup will be given for the best herd of registered Holstein Friesian cattle.

In New Mexico the State Fair at Albuquerque and the State Livestock and Products Exposition at Roswell, cups will be given for the best herd of registered Holsteins.

The Utah State Fair at Salt Lake City will receive special cash prizes of 15 per cent additional to that offered by the fair, excepting championship awards. In all cases when these prizes are given photographs of the prize winners must be supplied to Secretary F. L. Houghton of Brattleboro, Vermont. —H. A. L.

Tuberculosis Eradication Bill.

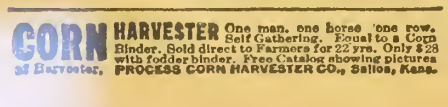
The State Veterinarian, Dr. C. G. Lamb, is working on a bill to be presented at the next session of the Colorado state legislature relative to compensation to owners of livestock found to be tubercular.

The federal government has appropriated $500,000 to be used in co-operation with the states, which fund will not be available unless the states take advantage of it by appropriating sums to equal that given by the national government. In other words, if a stockman has a tubercular animal, and destroys it, he will receive a certain amount from the state and a like amount from the national government. The amount each will be $25 for a grade and $50 for a registered, or a total of $50 for a grade and $100 for a purebred. In addition to this the testing will be done by federal veterinarians without cost. This bill is a worthy one and should be supported by all. Now is the time to get busy on this as at is felt that the number of tubercular animals in the state is small. If it is delayed until such time as there are more cattle it will be very much harder to handle the eradication work. Other states are already doing this kind of work and Colorado should fall in line. Authorities feel that it will be possible to stamp out tuberculosis if all of the states will do their part.—H. A. L.

The Summer Silo.

The silo can be used for both winter and summer, or silage can be fed the year around in all seasons. By the summer silo we refer particularly to the supply of silage during the summer months. Silos, as a rule, are bought with the idea of supplying winter feed. Silos are put up in the summer, filled in the fall, and generally before new grass comes every bit of silage is gone, and the dairyman especiallly notes at this time a severe shrinkage in milk flow. Profit in the dairy means supplying the animal with its requirement at all times, never allowing it to shrink through want of food. A shrink is unprofitable. It cannot be made up, and it is bad business. For this reason and many others the summer silo is rapidly gaining favor.

I recently heard a very well posted dairyman remark that if he had to choose between winter or summer silage feeding, he would prefer to go without the winter supply. This man had much experience in the business; he knew that the biggest damage to a dairy herd is generally produced during July and August, when pastures become dry and short, flies are bad and conditions most unfavorable. The lure of the pasture is too great for the average cowkeeper. It is so easy to simply turn the cows in the pasture and forget them except, perhaps, on a Sunday once in a while when they are salted, or if they be milk cows when rounded up morning and night for milking. True there is a short season, especially in the corn belt, when pastures are exceptionally good. In May and June we generally find the grass tender and green and plentiful in quantity, but even during these months silage can be fed with profit to any class of cattle. During the early part



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Every claim thus made is subject to easy demonstration, and every De Laval local agent is glad of the opportunity to prove these claims to you, in your own dairy, without cost or obligation on your part.

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of May the grass is more or less watery and lacks body and nutriment. Animals are often injured by the assumption that they are receiving all the green feed that they need. In June, as a rule, the grass is at its perfection, but July comes with a drouth, flies become very numerous, weeds spring up in the grass and pasturage conditions become poor. This is the time for the summer silo. With cows in a darkened barn and plenty of succulent silage, good records can be produced and that at little cost.—A. L. Haecker.

Advanced Registry Work.

There is a great deal of interest at this time among the owners of registered dairy cattle in the advanced registry testing. In order to work out the plans for handling this work in the state in a more efficient manner, Prof. Geo. E. Morton of the Colorado Agricultural College called a meeting of the breeders recently at the Auditorium hotel in Denver. There were about fifteen dairymen who responded to the call. As a result of this getting together, a better understanding exists between those at the college, who are directing advanced registration work in the state, and the breeders.

The main points under discussion were the matter of prorating the expense incurred by the tester in a month to all of the breeders who have testing done and the handling of special requests for testers, when it did not work in with a regular schedule. After considerable discussion in which the breeders expressed their views, it was voted to leave the working out of the details to the dairy division at the college.

Other points of interest were discussed, such as the use of standardized glassware in advanced registry work and the question of the salary of testers.

Mr. W. B. Fairbanks was introduced by the chairman as being the next supervisor of testing in the state. He takes the position made vacant by Earl Darrow, who has resigned from the college work to take a position with one of the large ice cream manufacturing plants in Denver.—H. A. L.

Concerning Pig Club Work.

We have called attention repeatedly in these columns to the fact that the producer of purebred swine seed stock should learn the business of producing pork successfully before taking up the more difficult and complicated work of producing high class purebreds for the purebred trade. The great majority of successful Duroc breeders, who are making money and are meeting with success in the business learned the fundamentals of successful feeding and developing hogs in producing porkers for the market. And it is folly for our agricultural leaders to permit the thousands of Pig Club members at the beginning of their work to attempt to produce breeding and place all of their hogs—good, bad and indifferent—upon the purebred market and disseminate a lot of scrubs each of which does its bit to injure the good reputation which the purebred swine breeders of this country have spent years in establishing.—Duroc Bulletin.

Feeding Garbage to Hogs.

O. A. Taylor of Pocatello, Idaho, can vouch for the advisability of feeding garbage to hogs. Mr. Taylor was a poor man ten years ago. Today he is worth in the neighborhood of $75,000. He is independently rich. How did he do it? By putting pork on his hogs with the least possible expense to himself.

Originally, Mr. Taylor was a cattleman near Pocatella. As civilization pushed westward, this became an unprofitable occupation. His land become too valuable to be used exclusively for the range cattle business. Finally, one summer's day, a real estate dealer from Pocatella drove out to his ranch with an offer for his holdings too tempting to refuse. Standing on the front veranda of the old ranch house he signed the contract that later proved to be the initial step toward the founding of one of the thousands of small villages that have sprung up apparently overnight since the west became conscious of the pressure brought to bear by the eastern immigrants.

Mr. Taylor then moved to one of our larger southern cities, where he purchased a 160 acre farm, five miles east of the city on what is known as the Frazier Pike.

Immediately after his purchase, he called on the mayor of the city. It proved that a farmer from across the river had agreed to take all the garbage from the city providing it was delivered to his farm. In order to obtain sanitary conditions, and to relieve the dumping situation, the city had conceded to the farmer's proposition. Mr. Taylor, however, knew what he wanted and was willing to pay for it.

"You will pay us $2.50 a ton for garbage that we have been giving away to get rid of it?" The mayor was astounded. Before leaving the office, Mr. Taylor signed a contract that provided that all garbage collected by the local sanitary department, should be delivered to this farm at a charge of $2.50 a ton.

The majority of his hogs are bought on the St. Louis market. He endeavors to keep between 1,500 and 2,000 hogs in the feed lot the year round. Each lot of pigs are kept on full feed for 60 to 80 days, owing to the market demand. In this way he feeds around 8,000 hogs every year. Supplementary feeds are deemed unnecessary by Mr. Taylor, other than a small amount of shelled corn to help balance the highly nitrogenous garbage.

The city sanitary department delivers the garbage to the farm each day. It is dumped on the concrete feeding floors where it is sorted into piles according to its feeding constituents, and fed without further preparation. The hogs are fed all they will clean up three times a day. They seem to thrive rapidly on this ration, some gaining as much as two pounds a day.

Some little difficulty was experienced in keeping the hogs on full feed. On a full feed of garbage alone, they have a tendency to go off feed. This was remedied largely by the addition of about two pounds of shelled corn per pig daily.

"I prefer to start with a 120-pound pig when garbage is to be fed," said Mr. Taylor. "I have always obtained best results when feeding grade Durocs. I find that I am able to keep them on full feed longer than any other breed or grade that I have fed. They appear to be stronger and more growthy during the feeding period and when ready for the market they show the compactness and mellowness of fleshing so desirable in market type hogs."

Mr. Taylor estimated that 100 pounds gain required 1,500 pounds of garbage and 150 pounds of corn. His figures compare favorably with those of John M. Evvard, chief of hog husbandry of Iowa State College. Prof. Evvard found the garbage requirement per 100 pounds gain to be 2,465 pounds offered and 2,050 pounds consumed.

Does the feeding of garbage pay? This question may be answered by a study of the cost of production as presented by Taylor. With garbage at $2.50 a ton and corn at $1.86 a bushel, the cost per 100 pounds gain was $5.60. With hogs selling at the present glutted market at $14.60 to $15.75, the garbage fed pigs returned a profit of $9.57 for every 100 pounds gain. Does it pay?—J. L. Fletcher in Duroc Bulletin.

Holstein Breeders' Picnic.

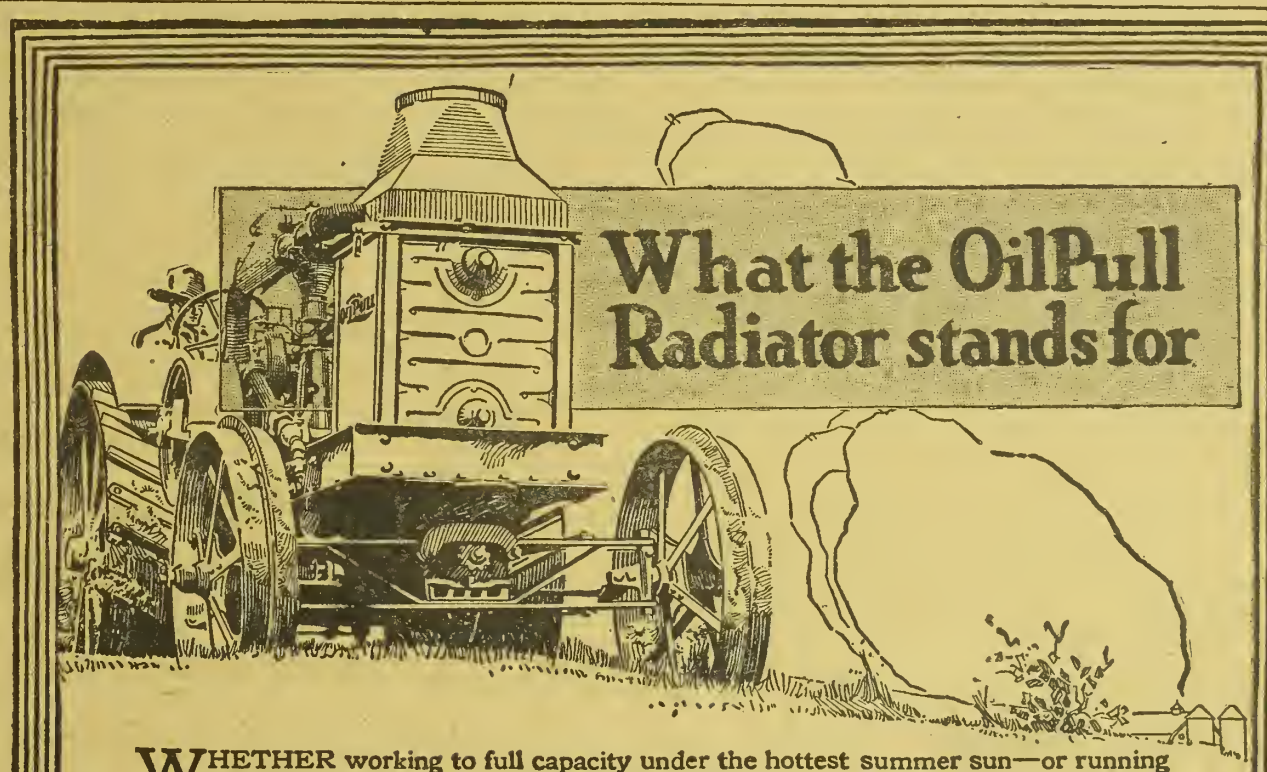
The Holstein Friesian Picnic will be held at Palmer Lake, Colo., August 6, 1920. This event is open to all who are interested in dairying in Colorado. All are asked to bring their baskets well filled with food in order that there will be enough to go around. A good program is being arranged. Sports and speaking will be the order of the day. Be sure to be at Palmer Lake by 11 o'clock. Plan to come and enjoy the day.

Food Value in Ice Cream.

There is nothing that suits the fancy more during the hot summer days than does ice cream. It is palatable, refreshing and satisfying. It contains all of the food value found in milk, including the vitamines. This makes it especially desirable as a dessert.

A glass of good, clean, cold milk is a very pleasing drink at any time during the day. Why not induce our soda fountain proprietors to have it on tap at all times? This no doubt will be done if the public will ask for it. It would be especially valuable for children. Think of the difference that would result to the child from a glass of milk rather than a glass of soda water made from syrups that contain acids that are often injurious. These two articles should be pushed especially during the summer months and it will assist in an improvement of the market for dairy products.—H. A. L.

Western Farm Life: Enclosed find check for $1.75 for your valuable magazine and Modern Priscilla. I thank you for the very pretty post cards and would have sent in my subscription earlier but was prevented by sickness. We sure like your paper for it grows better each month and we glean much useful information from its pages.—Fred C. Adams, Yuma, Colo.



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The Dairy Farmer's Climate.

I was reading an article by Ellis Parker Butler where he said that it was his opinion that people made their own climate or carried their climate with them, and once in a while I get an inquiry asking me in effect if a certain breed of cattle is not too tender for Utah climate, and these inquiries do not always refer to the same breed of cattle, either. Not long since I received an inquiry asking if the Ayrshire cattle were adapted to the Utah climate. On another occasion it was: "How will the Guernseys do in our climate?" And another time: "Don't you think the Jerseys are too tender for our climate?" And similar questions have been asked about the Holsteins.

The strange part of it is that these questions come from people living in the finest valleys in the state, where there is one of the best climates for any recognized kind of breed of cattle that the world knows anything about. Some of these breeds of cattle are developed under climatic conditions that do not equal those that prevail in the Utah valleys, and I have about concluded that Butler is right—a man makes his own climate and the owner of dairy cattle is largely responsible for the climate that surrounds his cows. For instance, it is only recently I visited a farm where the climate was rigorous for the particular section in which it was located. There were a number of cows in the yard surrounded by a dilapidated pole fence. The frame work of the shed supported an irregular hummock of straw which at one time had covered most of the frame work, most of it having been blown away; along the back of the shed against the prevailing wind was a windbreak of three poles, averaging 4 inches in diameter. There was no bedding and no place that was dry where a cow could lie in comfort. I learned that the cattle were watered once a day by being driven to the canal 40 rods distant, where the water, if not frozen over, flowed for many miles between icy banks, and for a fact the climate around the place, as the owner had developed it, was a little cold for most any kind of livestock.

A mile and a half away I visited another place. There was no big barn, but along the north side of a roomy corral was a deep shed. It was roofed with straw, lying deep and well settled over the entire frame work. The straw was weighted and held in place near some of the corners by weights secured by baling wires. It was not an old country job of thatching, but was a fairly good roof and the straw was thick enough and placed in such a way that it shed the water, and the back towards the north was closed up with native lumber, well battened with light slabs. The east and west ends of the shed were similarly closed. There was a good layer of straw under the shed and the cattle were lying there in comfort. A well just outside of the corral fence, supplied with a windmill and pump, provided water that twice a day was pumped into a trough extending into the cattle yard where the cattle could get water that was not icy but many degrees above freezing, and the weather about this farm was mild and pleasant compared to that we had emerged from a half hour before at the place I have mentioned above. It was a question of owners and their attitude towards cow comfort. Most any breed of cattle would have given good results in the hands of the owner of the last farm spoken of, while most any breed of cattle would have shown poor keeping and unsatisfactory results in the hands of the first. Both these men had come to that section of the country at the same time under conditions that placed them about even in the start. One man did not have superior climatic or location advantages. He had the advantage of being by nature or early training a better stockman. How is the climate on your farm?—Ben R. Eldredge, Western Office Dairy Division U. S. D. A.

Cow Testing Reports.

The Boulder Cow Testing Association reports 163 cows tested with an average milk production of 668 lbs., and 27.1 lbs. of butterfat. The high cow produced 2,344 lbs. of milk and 79.7 lbs. of butterfat. The high herd consisted of 10 cows with 8,453 lbs. of milk and 40 lbs. of butterfat per month. In this association there were only 163 cows this month. The high cow is owned by Lee Johnston, Longmont. She produced 2,344 lbs. of milk and 79.7 lbs. of butterfat. The owner of the high herd of ten cows is H. S. Andrews of Boulder.

There were 263 cows in the Otero County Association with an average of 542.7 lbs. of milk, 21.22 lbs. of butterfat. The high cow produced 1,502 lbs. of milk and 49.6 lbs. of butterfat. The high herd of 10 cows is owned by J. Blum of La Junta, he is also owner of the high cow. This herd of 10 cows produced 891 lbs. of milk and 32.18 lbs. of butterfat.

The old Boulder County Cow Testing association has been disbanded and the new association, the Platteville, Boulder and St. Vrain Valleys Cow Testing Association, has been organized, with headquarters at Fort Lupton. Some members of the old Boulder association are in this new one. Lloyd Simpson has been employed as tester, but Mr. Doke is testing for the month of June, due to Mr. Simpson's illness.

Another new association has been organized in Douglas county and the Melvin district. R. L. Sherman, an experienced man from New York and Illinois, is testing. We expect some interesting comparisons in the different associations in the state.

Silage for Sheep.

Silage is rapidly coming to play an important part in the feeding of Idaho sheep. Owners of large flocks who have not yet used it are building silos and those who have used it are building more, after having thoroughly satisfied themselves of its many desirable qualities. It cuts down the cost of their feeding operations, keeps the sheep in better health, assists in preventing the sheep from going "stale" when feeding alfalfa hay alone for a long time, and causes the ewes to produce more milk for their lambs.

When used with alfalfa in fattening operations, it cuts down the cost of fattening, keeps the sheep in good health and promotes keen appetites. One Idaho feeder fattened 1,492 lambs for 81 days last winter on corn silage, cut alfalfa hay and corn. Silage and cut hay were fed morning and evening, and corn at noon. When on full feed the lambs received four pounds of silage, 1¼ pounds of corn, and all the cut hay they would clean up. The supply of silage was used up ten days before the lambs were shipped and they were finished on cut hay and corn.

These lambs made an average gain of 31 pounds a day each. Part of the corn used cost $2.85 per hundredweight and part $2.95, and the alfalfa cost $15 per ton. Allowing $9 per ton for the corn silage, it cost $15.77 to put 100 pounds of gain on these lambs. This gain required 246 pounds of corn, 482 pounds of alfalfa, and 1,072 pounds if silage.

Alfalfa and silage also make an excellent combination for wintering ewe lambs and when properly fed will lower their winter feed bill and bring them out in the spring strong, thrifty, and ready for the range.

Many sheep men object to feeding silage to bred ewes, even though they consider it a good feed for them, because it is usually fed in racks and they believe that the ewes crowding about the racks injure one another internally, thus causing them to abort their lambs. One of Idaho's best known sheepmen who feeds about 1,000 tons of silage per year in racks to bred ewes, states that he has never had any trouble along this line, and would not give up silage as a part of the winter ration for his ewes. —R. B. Millin, Sheep Specialist, University of Idaho.

If you have alternatives in the utilization of crops, they are the crops to bring into your cropping system. Wheat has only about one use, but it has two or three other virtues to make it fairly indispensable in a cropping system. It is a good cash crop, and a good nurse crop, and occupies the ground during the winter when otherwise the land would not be used. And last but not least, it fits in well with corn from the standpoint of the time of year work must be done on the crop.

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Elbert County Calf Club.

Members of the Elbert County Shorthorn Calf Club were visited recently by Mr. A. G. Cornforth, calf club leader, Mr. B. H. Gleason, and County Agent Aicher. It took a full day to make the rounds, but it was well worth the time. The first place visited was that of Mr. Gleason's. There are two club calves at this place, belonging to Marjorie and Loren Gleason. These calves are roan and look like real show calves. From here the Carnahan ranch was visited, and at this place are two more calves belonging to Allen, Jr., and George Carnahan. These two boys have large growthy calves, well worth looking at and show that the boys understand caring for them.

The next place visited was that of Ed Clark west of Elbert. Helen Clark, the owner of the club calf, at this place had a real surprise for all, for instead of having just the one, she now has two, her club heifer now having a little baby heifer. She says that she will not trade her two for any three belonging to her father. From there the Murray ranch was visited, where Marvin Murray is the proud owner of a calf. His, too, is a good looking animal that has gained quite a bit since he has owned her.

The Litherland ranch was next. At this place are four calves belonging to Florence, Verner, Sharon and James Litherland. These calves were grazing on the hillsides and it was a beautiful group to look at. From here the Fred Weiss ranch was visited, where Floyd Weiss is the owner of a purebred. This young man is all business and has a calf to be proud of. Two miles east on the William Weiss place is another calf belonging to Paul Weiss. This calf made a good growth since last fall and shows that it has been well cared for. Marvin Myers was next visited. This lad had a little trouble in getting his calf to eat grain, but nevertheless she has made a good growth and looks exceptionally good.

From here the Mike Kusma place was visited, where Ben is the owner of a beautiful red calf. This animal is of good size and shows that she has had good care. The next place visited was that of Alfred Maul, southeast of Kiowa. George Maul is the owner of a club calf here. He drew one of the smaller calves last fall when the calves were distributed, but it has made a good growth. The last place was that of J. R. Bruce. James, the owner of the calf, has a good looking roan heifer that will show up well this fall.

As a whole, the calves look exceptionally good and the children should be congratulated on their good showing made thus far. The calves have gained from 200 to 250 pounds since the youngsters have had them. Much enthusiasm is being shown by the club members and there will be real competition amongst the youngsters when the calves are exhibited this fall. More than $200 in prize money has already been offered, and before show time the amount is expected to reach $300.

This is the one means of keeping the youngsters on the farm. Keep them interested by giving them something to work with, something that they can call their own. Along with this they will learn a few business principles, and learn how to feed, care, and show stock. Let us have more purebred calf clubs next year.

How Hog Champs Are Made.

The experience of the Kansas State Agricultural College in feeding breeding stock for rapid gains is available to all owners of purebred hogs. Last year the college was successful in developing a litter of Poland China fall pigs. Out of the seven pigs raised a boar and four sows were shown. The boar was fourth in the open class and third in the futurity show at the free fair at Topeka. The gilts were first, second and fourth in the open class and first and third in the futurity, and the first prize pig was junior champion sow of the show.

In herds the college won on produce of dam, second on get of sire, young herd and young herd bred by exhibitor. The National Swine show is the greatest of all hog exhibitions. Here the entries are chiefly the champions of various state shows. Showing these five head against the best Poland Chinas from the whole United States the college won fourth, fifth, sixth, and seventh, of the prizes for groups.

This litter was farrowed September 22, 1918. They were weaned when nine weeks old and partly hand fed and sometimes self fed from this time. Shorts and tankage were self fed free choice, but corn was never self fed and during the greater part of the time none at all was fed. Green rye pasture was used all winter and was a great advantage, as there were few days when green feed was not available. When 4 months old the boar weighed 160 pounds and the gilts averaged 133 pounds.

Not being satisfied with their growth it was decided to feed some oats. Since oats with the hulls included are too bulky for growing pigs, the milling department ground the oats and separated the hulls from the flour. Oats were 80 cents per bushel and since the oat flour amounted to 76 per cent of the grain the cost of the feed was $3.30 per hundred weight. This was fed as a slop, mixing the oat feed with part milk and part water. Gains were better from this time on. At 6 months of age the boar weighed 250 pounds and the gilts averaged 212. At 8 months the weights were 375 pounds and 315 pounds respectively. This is at the rate of two pounds per day.

When the weather became warm the pigs did not take as much exercise as needed, so they were driven on the road early each morning a distance of about one-half mile. This is absolutely necessary to keep the appetite good. Good gains were made during the hot weather. When 12 months old and just before shipment to the National Swine show, the boar weighed 590 pounds and the gilts averaged 492 pounds.

The method of feeding produced prize winners and did not in any way injure the reproductive ability of the pigs.—The Kansas Industralist.

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Shall We Let Money Lenders Kill Farm Loan Law?

(Continued from Page 3.)

first stop was at the F. H. Robinson farm. Mr. Robinson is one of the old settlers in the Cope country. He saw the value of the federal loans right from the start and having a well developed farm, then of 320 acres, he made application for a loan of $4,500, which was granted. After explaining my mission I asked him what he had to say about the value of the farm loan system.

"Make It Strong," Says Robinson.

"What do I think of it? Well, now, you just say anything at all that is good about the federal loan system and put my name to it; you can't make it too strong to suit me. It's the best thing that has been devised to help farming. In my case it saved me 10 per cent interest; it gave me a chance to buy another quarter that I needed and I was able to carry out the improvements on this ranch which make it a

Roy Marple, Secretary-Treasurer Cope National Farm Loan Association, who piloted the writer on the tour among the borrowers.

real livestock farm. I am running about a hundred head of cattle and horses, not counting the young stock. I have put in a pumping plant for irrigation of a field of alfalfa and I am getting along fine. My success is due in a large measure to the low rate loan that I have been able to get."

Mr. Robinson, in further discussing the benefits, pointed out how land values had risen in the community by reason of the financing of the farmers who have been benefited just as he has been, allowing development of their business without having to sacrifice to pay either interest or principal. The theory of the farm loans pleases the borrowers.

Private money through the orthodox channels of the farm mortgage companies in many new sections is loaned with the prospect of a certain number of foreclosures. The federal land banks lend on the theory that every borrower will be able to pay out in full and never default in a single interest payment. The theory works out because the terms are easily met. In the Cope association there has never been a case of default in interest and never even a remote hint of foreclosure. Borrowing has lost its terrors for the borrower because he knows he can pay out.

A point mentioned by Mr. Robinson was this: "I think one of the things that ought to be mentioned is the fact that a man who has a federal loan on his farm and is using the money for proper development, is a better risk for a second mortgage than a man who is not a federal borrower. We know the federal bank is conservative in the amounts allowed; we know the man keeps up his interest and that he is constantly reducing the principal and we can see what he is doing with his money. It makes his business better and therefore gives him a better credit rating than he had without this new money. I would never hesitate to lend on a second mortgage to a land bank borrower for that reason."

Secretary Marple said that the system was working out just that way in the Cope district; borrowers found that their credit was better for any accommodations they needed, and the banks in that section are not discriminating against federal borrowers, but rather preferring them.

Driving into the town of Cope we met Mr. E. E. Brown, son-in-law of the founder of Cope grove; a monument of thousands of forest trees planted by the pioneer John C. Cope as an evidence of the fact that the prairie can be made more beautiful and attractive. Mr. Brown is not a borrower. He was formerly a county commissioner and has taken an active interest in public affairs many years.

"I hope Congress will see to it that the Federal Land banks continue putting money out to the farmers. It has been a fine thing for this community in every way," said Mr. Brown.

Country Banker Favors It.

Since I had last visited Cope a bank has been established and being curious to know what a country banker thinks of the Federal Land bank and its workings, I put the question to Mr. J. M. Fisch, an officer of the State Bank of Cope.

"We think it is a fine thing for this community. It has helped many of our farmers to prosperity."

Mr. Fisch is a farmer and he has a loan from the Federal Land bank, so he speaks from actual knowledge of the system and from knowledge of the banking business as well, when he says that the country banks are glad to have this new capital come in to help develop farms and make the farmers better customers of the local banks.

W. E. Foran, who also is interested in the bank and in land development, said:

"Lend all the money you can here; it helps business; we welcome the activities of the Federal Land banks."

He pointed out some flaws in the methods of administration; said there was a great deal of red tape that was burdensome, but that such things probably could not be avoided under government management; nevertheless, speaking for the community, he saw that the federal loans were great factors in the development of good farming and the prosperity of the farmers.

Passing on out of town we saw a fine school house as another evidence of general prosperity that has come to the Cope district in the last three years.

We found another "satisfied customer" in C. O. Krauth, whose farm is located seven or eight miles northwest of Cope. Lumber and other material for a new barn is on the ground and when work slacks up this summer there will be a "barn raising" on the Krauth place, with a federal loan as the source of the barn money.

Here the dwelling place is finished. It is a concrete house with sod core, a favorite method of construction which was introduced by Dr. Wheeler, the Cope community physician. The sod house comes first. After a few years this is often converted into a concrete dwelling without touching the sod walls, which are left to form the core. This provides a structure that has every quality of permanence and the appearance of neatness within and without. In some cases the inside walls are plastered and finished as are those of a frame or brick dwelling. The Krauth's followed that plan. In other cases, for example in Secretary Marple's home, the inside walls were given a coating of concrete plaster and then tinted; the ceiling covered with plaster board and tinted to match the walls, and decorated with oak stained paneling. But to return to the subject:

Big Saving in Interest.

Mr. Krauth found his first loan of such value that he applied for and received an additional loan, the total amount being $4,000. With the original loan he liquidated a debt from private sources which was costing him 10 per cent interest. On the Land bank money he pays 5½ per cent interest and with an additional 1 per cent on the principal under the amortization plan, he is reducing interest and principal at a lower rate than the private loan had cost him in interest alone. Does he think the Federal Land banks are of benefit to the farmer?

"I'll say they are," is the way he put it. "I'll say it for myself and say that it has been beneficial to many of my neighbors. As soon as farm work slacks up a little I'll get busy putting up the barn. I need it, but I would not have been able at present prices to make this investment without the help of the Federal Land bank."

At the next ranch we visited, that of George D. Young, Sr., we found three borrowers—Mr. Young, Hugh McPeek and Roy C. Tarpenning, the two last named having come over to Young's on a business visit. The showers had interrupted farm work, so the clan had come together for dinner at Young's, and that over, they all drove to the school house to lay out a baseball diamond. We saw them using the scraper on the prairie. They had all outdoors to choose from in finding a suitable spot. The natural turf was there; all it needed was to mark off the diamond and cut any high grass that might lose a bounder.

Mr. Young, Sr., in answer to a question about the farm loans, said: "Is the system a success? Well, the very best

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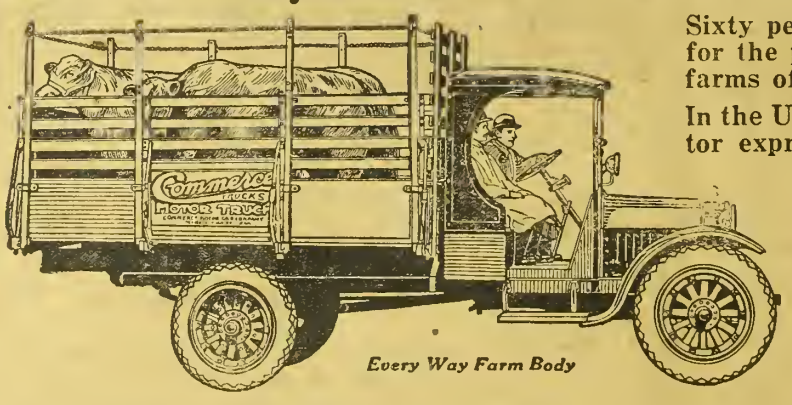

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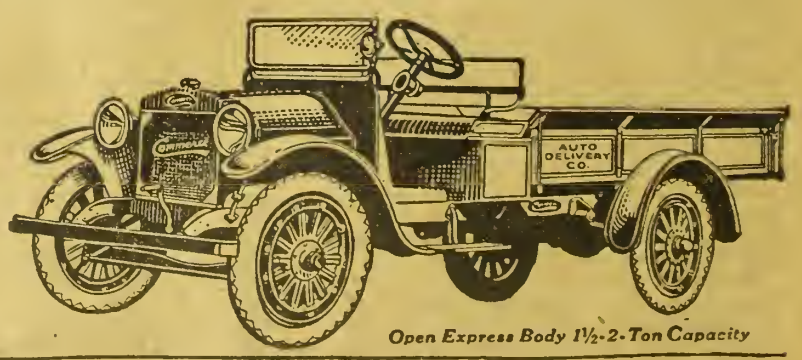

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evidence that I could offer you is the fact that the money lenders are trying to put it out of business. If they were not hurt they would not 'holler.' Nothing better for farming has ever come to this country than the Federal Land banks, and I do hope that they won't make a mistake down at Washington and permit discontinuance of the system."

Roy Tarpenning and Hugh McPeek echoed the words of Mr. Young. Not far away we found the ranch of George Young, Jr., who through a federal loan of $1,700 has been enabled to start as a breeder of registered Polled Herefords. Cattle and sheep are his specialty. He was not at home so we could not get his word of approval, but the farm speaks for itself.

Then there was Pearl Lord's place; he put his money into improvements and not a finer farm is found for many miles around. He said that federal farm loans had been of great benefit to him and he hoped nothing would happen to stop the flow of funds.

Similar testimony was given by Guy R. Smith, president of the Cope Farm Loan association, whom we saw toward evening as the last on our day's journey.

"The Federal Land banks have been of great benefit to this country. I am a borrower and the loan has enabled me to extend my farming operations. It has been a good thing for every man of us."

What do you say, farmer friends, shall we let the money lenders take it away from us?

The Cope National Farm Loan Association was organized in March, 1917, starting with 27 members, who applied for an aggregate of $40,000 in loans. A total of 104 applications have been filed, the loans applied for amounting to $128,000. Over 70 loans are active and the total placed in the district is $109,000. The officers and executive committee are Guy R. Smith. president; Frank Robinson, vice president; Roy Marple, secretary-treasurer. The executive committee is composed of Pearl Lord, Roy C. Tarpenning and S. E. Teter.

Dividends received from the Federal Land Bank by the Cope association amount so far to $370, of which 10 per cent is held back as a reserve and the balance paid out to borrowers, who are stockholders. Running expenses are paid by assessment which is raised through a fee of $5 paid on application, and an additional one-half of 1 per cent, which is paid by the borrower at the time the loan is closed. This assessment plan has not only taken care of all running expenses, but has provided for a deficit incurred during organization of the association. There has never been a single case of delinquency or delay in paying interest and principal installments.

Another noteworthy feature is the fact that not a single appraisal of the local loan committee has ever been changed by the federal appraiser. This is due to the policy of the association of making requests for loans conservative. They ask for what a farm is entitled to and do not go on the theory of asking more than is needed and then having their request cut down by the bank. The appraisements have averaged about $1,500 on the half section of land.

On Poultry Diseases.

It seldom pays to treat fowls that are diseased. Fowls that have shown any signs of physical weakness at any time in their lives, should not be used for breeding purposes. Fowls that are diseased cannot be very productive. The value of an individual fowl and its product is not sufficient to justify a very great expenditure of time and medicine. If the disease is infectious or highly contagious, it should never be treated. The danger from diseased fowls about the place is entirely too great. The better practice would be to kill diseased fowls as soon as they are noticed. All cases should be diagnosed to determine the nature of the disease and then the carcass destroyed by burning. Fowls that have died of disease should not be buried, as it is quite likely that they will be uncovered by some dog.

Prevention is better than cure. Ordinary preventive measures consist of keeping houses, yards or runs scrupulously clean. Give only clean feeds and drinking water in feed hoppers and drinking vessels that are immaculately clean. The straw in the house should be fresh and clean at all times. Flocks should be protected from outside contagion. If fowls are taken to a poultry show, or new stock purchased, they should be isolated for several days to see that no disease develops.

Lice and mites are the cause of much disease. Fowls that are infested with lice and mites are constantly annoyed. They lose much blood and as a consequence are low in vitality. Proper sanitation will aid wonderfully in keeping down lice and mites. Clean quarters, plenty of sunlight and good ventilation are the greatest enemies of lice and mites, as well as of diseases. Dark, filthy corners are their natural incubators.

Lice are continually on the fowls' bodies. Licene and similar remedies are splendid for lice and may be obtained through the local druggist or poultry supply house. These ointments should be applied to the flesh of the fowls and not smeared in the feathers. Full directions for use come with each package. If these ointments are applied two or three times a year, there will be no trouble with lice.

Mites are on the fowls at night and go off during the day. During the day they can be found in the cracks and dark places about the roosting quarters. If mites are kept out of the quarters when fowls roost they can do no harm. Mites can be kept out of the roosting quarters by painting the perches, dropping boards, and the walls up as high as the fowls can reach, with a mixture of equal parts of kerosene and Zenoleum, Kreso or some other of the coal tar preparations found on the markets. Spraying the quarters with a two or three per cent solution of some one of the coal tar preparations or orchard sprays is also good. The only advantage there is to the painting process is that it does not need to be done so often. In the first warm days of spring the mites begin to require attention. If they are not allowed to get a start they are easily kept down. If mites are kept down during the summer months, they will not bother in winter.

Ptomaine poisoning is caused by feeding mouldy feeds, usually meats. Dead carcasses that have been allowed to lie around the place and decay are a very common cause. Ptomaine poisoning is mistaken for a multitude of ills.

Roup is an aggravated case of cold and becomes contagious. When colds are noticed, the flock should be treated for lice and ventilation corrected. Permanganate of potash in the drinking water is a good treatment. Use enough of the permanganate to give the water a rich color. All ailing fowls should be removed from the general flock.—Pren Moore, Poultry Husbandman, University of Idaho.

Manure on Utah Soils.

Bulletin No. 172 on "The Value of Barnyard Manure on Utah Soils," by F. S. Harris, issued recently by the Utah Agricultural Experiment Station, contains some interesting and practical conclusions that will be of benefit to farmers throughout the intermountain region. It is pointed out that the idea sometimes presented, that Utah soils are so fertile that they do not need manure, is not borne out by these experiments. Dr. Harris' conclusions summarized in this bulletin are as follows:

Manure applied to sugar beets at the rate of ten tons to the acre gave an increase in yield of about one ton of beets for each ton of manure. Five tons to the acre gave nearly two tons of beets for each ton of manure, but where as much as forty tons to the acre were applied the increase was only about .4 of a ton of beets for each ton of manure.

Where potatoes were manured at the rate of 5 tons to the acre the yield was increased nearly 13 bushels for each ton of manure, but where 40 tons were applied the increase was only 4.3 bushels for each ton.

Manure applied to wheat gave an increased yield of 2 bushels for each ton of manure where 5 tons were applied, 1.13 bushels were 15 tons were applied, and only .33 bushels for each ton of manure where 40 tons were applied.

Manure applied to oats gave an increase of 1.65, 1.21 and .36 bushels of grain respectively for each ton of manure when 5, 15 and 40 tons of manure to the acre were applied.

The average of nine years of manure applied to corn gave an increase of 3.83 bushels of grain and 428 pounds of stover, and 1.61 bushels of grain and 214 pounds of stover, respectively, for each ton of manure when 5 and 15 tons were applied to the land each year.

The use of farm manure under dry farming conditions does not seem to be so immediately profitable as under irrigation; the residual effect of manure under dry farming is very marked.

The use of manure on expensive crops such as sugar beets and potatoes gave a higher return for each ton of manure than when it was applied to wheat and oats.

These experiments bring out clearly the fact that manure is much more valuable on Utah soils than it is usually thought to be.

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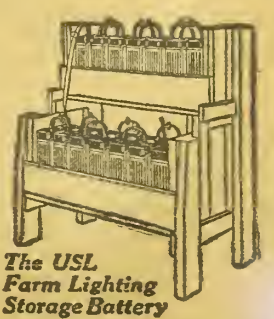
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The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

To the Milkweed.

None call thee flower!....I will not so malign
The satin softness of thy plumed seed,
Nor so profane thee as to call thee weed.
Thou tuft of ermine down fit to entwine
About a queen; or, fitter still, to line
The nest of birds of strange exotic breed.
The orient cunning, and the somnolent speed
Of looms of dusky Ind weave not so fine
A gossamer....Ah me! could he who sings,
On such adventurous and aerial wings
Far over lands and undiscovered seas
Waft the dark seeds of his imaginings,
That, flowering, men might say, Lo! look on these
Wild Weeds of Song—not all ungracious things.

—Lloyd Mifflin.

What Mary Wants.

Dear Mary:

Small Sarah and I have one thing in common anyway—when our workin's annoy us, everybody knows it. But I om sorry that indigestion is troubling her this early in life. Never again shall I mention ice cream cones and babies in the same breath.

Never was there such a turmoil over what we eat—why we eat it and what to do about it when it does or doesn't do what it should. Small Sarah is acquiring an education very early in her life.

The book you asked about that I had gotten from the "Springs" Library, and liked so well, was "The Care and Feeding of Children," by Holt. Who the publisher is I have forgotten, but can get it from my library friend if you can't find it from this description.

That book and some others I have read says that orange juice is not only good for constipation but that it has some of those awfully important vitamines in, which nobody knows anything about, but which seem to act as a sort of electric button to switch on growth or switch it off, depending on whether you have or haven't them. One teaspoonful a day can be fed as early as two months and when a baby is six months old she can have a tablespoonful, two or three times a day.

Now one peculiar fact is that the juice from good canned tomatoes has the same effect and can be fed in the same amounts as the orange juice. So if you can't get oranges, there you are. But it doesn't sound so good, because I never did like canned tomatoes as well as oranges.

And do you remember what horrors we used to have over the Russian women at home feeding cabbage to the children? Science doesn't say that chunks of cabbage are the best dietetical regulators in the world, but it does say that the juice of scrapped raw carrots and cabbage is good for babies, especially if they aren't growing right. Of course, you don't give them an ice cream cone full, or anything like that, merely a teaspoon full.

Thus my sermon on "Child Feeding" ends and you are to consult some one who knows. This is merely interesting information.

I lost a few chicks with scours but began on good clean sour milk with the others and haven't had any more trouble.

My roses are just getting glorious. This old place can be a dream, and the trimming and the pruning and the loving little pets and pokes we have given the old bushes are paying in the beauty we are getting this year. Bring Sarah over and put her in the hammock out there, where the big pink roses are thickest and I believe you could feed her onions and dried beef with no bad results.

We are all fine and planning a great day for the "4th." Can you join us? Never mind the eats.

Whoopee!—the boiler with my canned peas is going over!

Love to you. SARAH.

Sarah's Book Suggestion.

Just by way of comment on Sarah's book suggestion, there is an excellent bulletin "Use and Preparation of Food," gotten out by the Federal Board for Vocational Education, Washington, D. C., and procurable for a few cents—6 cents, I think—merely by writing to the Superintendent of Documents at Washington, enclosing coin or money order, but not stamps, as the government printing office does not take stamps.—E. D.

Lye Hominy.

A request for a formula for making lye hominy has come from R. Rosenberger, Sterling, Colo., and the recipe was secured from Mrs. W. W. Goodwin of Canon City. She makes a larger amount than this, the amounts given being just two-thirds the original recipe. A large amount is hard to wash and it is rather discouraging to one not used to preparing it to have so much on hand. Many a Red Cross cooked food sale in Canon would have been incomplete without Mrs. Goodwin's hominy, for she is an expert in preparing it. This is the recipe:

For one and one-half cups of shelled corn, take two gallons of water and two level tablespoons of concentrated lye. Put the lye into cold water, stir well, and add the corn. Put all together in an old granite or porcelain cooking vessel on the back of the stove early in the morning, and cook very slowly about half a day, stirring occasionally with a wooden or granite spoon. The hominy should be cooked until the hulls begin loosening. They will usually float to the top.

Then drain off the lye water and rinse the corn until you do not feel the lye in the water. Rub the hulls of kernels loose. Then wash and remove all these hulls and black tips. When the hominy is washed thoroughly, cover well with water and cook until it is soft. Just a little salt may be added just before removing from the stove if it is desired.

In winter the hominy will keep well in a cool place, but in summer it should be canned for keeping. When hot, put in sterilized jars. Adjust rubbers and lids and boil for three quarters of an hour, tightening the lids and sealing when removing from the stove.

It is hard to wash the hulls loose from the hominy and get them away from the kernels. This is the scheme Mrs. Goodwin uses: A new small granite wash pan was secured and holes punched in it with a nail. The holes are just three-eights of an inch in diameter and were punched from the inside out, so that all the roughness is on the outside. Otherwise the kernels would be badly broken. These holes are just large enough for the hulls and black buds or tips to go through nicely. It is an easy matter to dip up a panful of hominy and shake it a little under the pump until the hulls go through.

Any granite colander with holes large enough would do just as well, though colanders usually have smaller holes. Notice that granite is better than tin or iron; it does not discolor so badly.

Milk as a Summer Food.

Milk is a real food just as much and even more so than many other products which cost a great deal more. Milk contains all the food ingredients of meat and in addition it contains a vital food substance indispensible to growth and health. Milk is a complete food and a protective one in that it tends to make good the deficiency of other articles of the diet. Its protein or muscle building ingredients are ideal in quality; its sugar is of the best; its fat is superior to the fat of any other food because of the presence in large quantities of this vital substance called fat soluble A, so essential to human welfare, and its mineral matter is most wonderful in promoting growth and repair in stimulating the physiological functions of the body. The use of milk is neglected in many homes and other less digestible foods are used. This is unfair to the growing child, who needs the vitamines found in milk to promote health and vitality.

In the summer time nothing is more palatable than a glass of cold milk. Not only is it palatable, but it tends to build up the human system and assists greatly in warding off disease.

There is no more delightful dessert for summer use than ice cream. This product of the dairy contains the vitamines found in milk and it is extremely pleasing during the hot days of summer. The National Dairy Council has recently published a booklet containing 150 recipes for making palatable dishes from milk and its products. This booklet is available for all who desire it. It may be had from the office of the National Dairy Council, 910 S. Michigan avenue, Chicago, Ill. It should be in every home, as it contains many things in the way of recipes that are new to many people. It also gives an idea of the food value of milk and its products. —H. A. L.

New Assistant to Meredith.

Elmer D. Ball of the Iowa Agricultural College, has been appointed Assistant Secretary of Agriculture. The new assistant secretary combines the qualities of an agricultural scientist and a practical farmer. Born at Athens, Vt., 50 years ago, he went with his parents to Iowa when a small boy, and was brought up on a farm in that state. He owns and operates a farm in Utah.

Since his graduation from the Iowa Agricultural College, Mr. Ball has been a teacher in agricultural colleges and an investigator of scientific and agricultural problems. For three years after graduation he was research assistant at the Iowa Experiment Station. In 1898, he became associate professor at the Colorado Agricultural College and remained there for four years. From 1902 to 1907 he was a member of

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Everything they wear and in any desired quality.

THE DENVER DRY GOODS

the faculty of the Utah Agricultural College. At the end of that period he took leave of absence and went to the university of Ohio for graduate work, receiving the degree of Ph. D. He then returned to Utah Agricultural College to accept the position of dean of the college and director of the experiment station. He remained in that position until 1916, when he became state entomologist of Wisconsin. Two years later he returned to his alma mater as a member of the faculty and of the experiment station staff, from which position he was called to Washington to become assistant secretary of Agriculture.

New Fashion Service.

All Patterns Now 12 cents Each: Address WESTERN FARM LIFE, Pattern Department, 1518 Court Place, Denver, Colo. Read This Before Ordering Patterns.

Write your name and postoffice address plainly. Enclose 12 cents in stamps or coin (wrap coin carefully) for each pattern ordered. Send your order to Pattern Department, Western Farm Life. Our patterns are furnished especially for us by the leading fashion designers of New York City. They are mailed out from Chicago headquarters to save time. About ten days should be allowed us to get patterns to our customers. **Please do not order from any list published by us before March 1, 1920.**

No. 9346. Ladies' One-Piece Apron.—Cut in sizes 36, 40 and 44 inches bust measure. A becoming oval neckline has been allotted to this cover-all apron.

No. 9390. Ladies' Waist.—Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. Tucks make their appearance on the collar and set-in vestee for a novel effect.

No. 9701. Ladies' Dress.—Cut in sizes 36, 38, 40 and 42 inches bust measure. Thus attired in a frock of organdie, the summer girl may feel certain of her charms.

No. 9348. Ladies' House Dress.—Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. Striped material is used to good advantage in a style like this.

No. 9436. Ladies' and Misses' Drawers.—Cut in sizes small, medium and large. This style is exceptionally easy to make as it is cut in one piece and may be finished at the lower edges to suit the individual taste.

No. 9379. Girls' Dress.—Cut in sizes 4, 6, 8, 10, 12 and 14 years. The blouse is worn over a skirt which may be either plaited or gathered and joined to an underwaist.

No. 9511. Ladies' Skirt.—Cut in sizes 26, 28, 30 and 32 inches waist measure. Side plaits and inverted plaits maintain straight lines in this skirt of sport silk.

No. 9463. Girls' Sacque Apron.—Cut in sizes 1, 2, 4, 6, 8, 10, 12 and 14 years. If made of gingham with linen collar and cuffs, this apron may be used for a dress as well.

Grange Picnic at Lakeside.

The annual Grange picnic for the Denver vicinity will be held at Lakeside Park, Denver, July 24, with an afternoon and evening program. Darden and Progress Pomona granges are co-operating in this affair. There will be a fine program comprising athletic sports and entertainment of various sorts, including a basket supper. There are no speeches on the program for this year. The committee is arranging for many events of interest and grangers are promised a royal good time. Among other things that will prove exciting is a ball game between Darden and Progress nines.

Colorado County Fairs.

Colorado State Fair, Pueblo, Sept. 19-25; J. L. Beaman, manager.
Adams County Fair, Brighton, Sept. 14-17; G. R. Smith, secretary.
Arkansas Valley Fair, Rocky Ford, Aug. 30-Sept. 3; J. L. Miller, sec.
Boulder County Fair, Longmont, Sept. 7-11; Harry E. Niven, sec.
Central Community Fair, Greeley, Sept. 14-17; F. A. Neil, sec.
Chaffee County Fair, Salida, July 4-5; W. T. Bozeman, sec.
Colorado-New Mexico Fair, Durango, Oct. 5-8; W. W. McEwen, Jr., sec.
Conejos County Fair, Manassa, Sept. 15-17; G. Wayne Roberts, sec.
Crowley County Fair, Sugar City, Aug. 25-26; R. A. Hamilton, sec.
Delta County Fair, Hotchkiss, Sept. 7-10; Paul Wilson, sec.
Douglas County Fair, Castle Rock, Sept. 27-28; Danl. L. Ball, sec.
El Paso County Fair, Calhan, Sept. 30-Oct. 2; D. E. Nance, sec.
Grand County Fair, Kremmling, Sept. 23-25; Emil Schlumpf, sec.
Huerfano County Fair, Walsenburg, Oct. 6-8.
Kit Carson County Fair, Burlington, Sept. 29-Oct. 2.
Larimer County Fair, Loveland, Aug. 30-Sept. 3; J. W. Thompson, sec.
Lincoln County Fair, Hugo, Sept. 22-25; E. J. Blades, sec.
Logan County Fair, Sterling, Sept. 7-10; C. J. Funk, mgr.
Moffat County Fair, Maybell, Sept. 10-11; J. B. Wills, sec.
Morgan County Fair, Ft. Morgan, Aug. 30-Sept. 2; R. L. Ripley, mgr.
National Western Stock Show, Denver, Jan. 22-29; Fred P. Johnson, sec.
Phillips County Fair, Holyoke, Sept. 21-24; R. N. White, sec.
Routt County Fair, Hayden, Sept. 15-17; B. H. Fairbrother, sec.
Saguache County Fair, Saguache, Sept. 16-18; Wm. Fellers, sec.
Sedgwick County Fair, Julesburg, Sept. 15-17; C. S. Deily, sec.
Trinidad-Las Animas County Fair, Trinidad, Sept. 28-Oct. 1.
Western Slope Fair, Montrose, Sept. 14-17; Jno. H. Wells, sec.
Yuma County Fair, Yuma, Sept. 15-17; W. W. Williams, sec.

Utah Fair Dates.

Utah State Fair, Salt Lake City, Oct. 4-9, 1920.
Cache County Fair, Logan, Sept. 21-23; H. R. Hovey, sec.
Dixie Carnival, St. George, Sept. 10-12; A. B. Andrus, sec.
Peach Day, Brigham, Sept. 15; Le Roy Selby, sec.
San Juan County Fair, Lockerby, Sept. 17; L. H. Doyle, sec.
Sanpete County Fair, Manti, Sept. 22-24; Glen A. Jensen, sec.
Sevier County Fair, Richfield, Sept. 16-18; J. Lerue Ogden, sec.
Summit County Fair, Coalville, Sept. 22-24; Stephen R. Boswell, sec.

Littleton Livestock Tour.

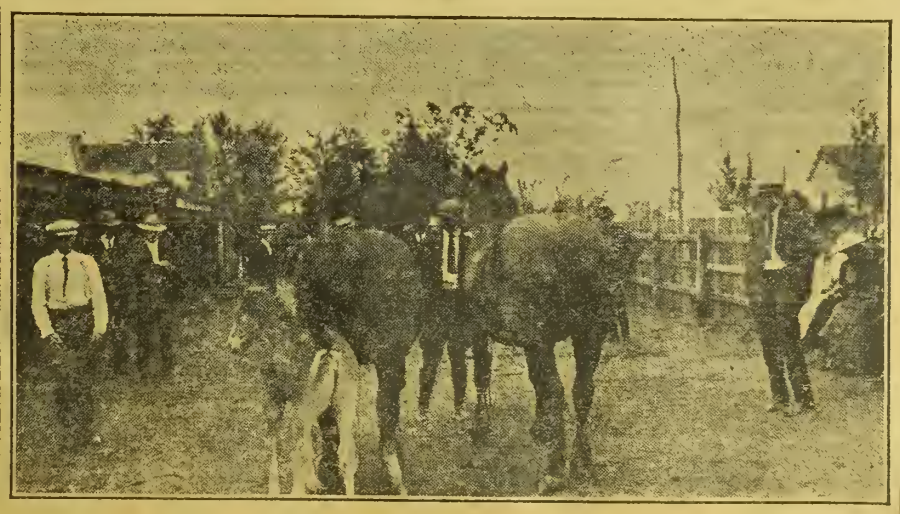
(Continued from Page 1.)

herd of heifers now from the herds of Squibb and Painter, also a carload from McCray's herd in Indiana. They have some outstanding Percheron horses. One of the pleasing sights on the farm was a large machine shed in which all of the farm machinery was carefully stored. Mr. Smith stated that it saved a great deal more in the life of the machinery than the building cost.

We next proceeded to the farm of Geo. Baker. This breeder is well known by all Hereford fanciers for the class of animals he is developing. His herd is one of the most practical in the state. We saw his cow herd and they are exceptional in type and quality. His young calves do justice to his herd sire, Mischief Mixer, who is by Beau Mischief. Mr. Baker has two sections of irrigated land and raises 300 acres of alfalfa in his crop rotation. From what was seen on this tour, it is safe to predict that the next National Western Stock Show will contain its usual high quality in Herefords.

The last farm visited was that of Mr. O. E. Green. This is the old Shirley Hotel farm and has been purchased by Mr. Green, who hails from Genoa, Neb., where he has been engaged in Hereford breeding for many years. It is said that Mr. Green has developed some of the biggest Herefords in the west. He has some of these big ones on the farm at the present time. The farm is being worked over into a Hereford breeding plant. There are 80 head there at present. Mr. Green has some great Beau Mischief cows and is using a Parsifal 16th bull.

There were about sixty people on the tour. It was successful in every way due to the manner in which it was managed by Mr. Cave.—H. A. L.



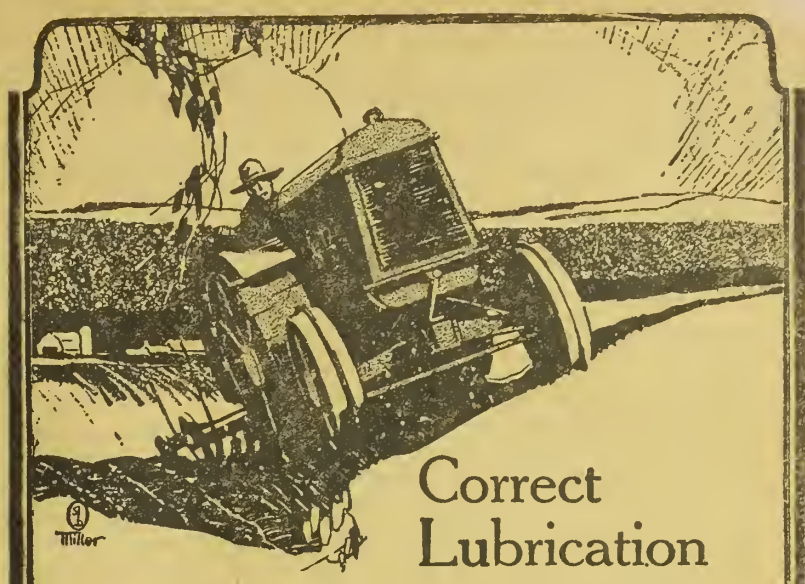
H. Bert Cave's Belgians being inspected on the Littleton Livestock Tour.

A Homesteader's Kick.

Western Farm Life:

Enclosed find a $1 bill sent for an advance subscription for two years and as a premium I choose the fence pliers. I don't know whether you are on the side of the cattle men or homesteaders, but you can't be both. The cattle men die hard here and cause us homesteaders lots of trouble in the meantime. The worst is the lawyers and merchants and bankers in the towns are for them every time and the homesteader can go it alone. Seems strange to me most of the settlers are from Kansas and Oklahoma, and are a good class of citizens, but the cattle men seem to like this grass the best, even the Registrar of the land office. We have to almost fight for a school for our children, and then have only six months, and no maps, charts or anything else, and I think our children are the most important crop. We have been here four years and expect to stay if possible. My folks live in Wyoming and that state has a better school law than Colorado. Why couldn't the coal mines on the school lands be mined for the benefit of schools instead of operators? — Subscriber, Prowers County, Colo.

If in need of advice, ask Western Farm Life Service Bureau.



Correct Lubrication and *Marketing Waste* Costs

H. C. Filley of the University of Nebraska attributes much of the high cost of living to wastes in marketing, which in turn adds to the cost of production and cuts the farmer's profit.

Tractors play an important part in today's farm production. And the tractor *on the job* not in the repair shop. Tractors that care for you because you take care of them.

Stanolind Tractor Oil is the ideal lubricant. It keeps engines fit because it is especially manufactured by a great concern for the special service required in tractor work; where the cylinder heat is unusually high.

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To introduce the best automobile tires in the world. Made under our new and exclusive Internal Hydraulic Expansion Process that eliminates Blow-Out—Stone-Bruise—Rim Cut and enables us to sell our tires under a

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We want an agent in every community to use and introduce these wonderful tires at our astonishingly low prices to all motor car owners.

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FARMERS' AND STOCKMEN'S EXCHANGE

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

PLYMOUTH ROCKS

BARRED PLYMOUTH ROCK EGGS FOR SALE, $1.25 per setting of 15; $6.00 per 100. John M. Mischke, R. F. D. 3, Loveland, Colo.

LAYMORE BARRED ROCKS—EGGS $5.00 FOR 15. Baby chicks 50 cents each. Nebraska State Fair and Missouri first prize winners. First in Colorado in profit with over $70 each in 1918. J. R. Anderson & Son, Fort Morgan, Colo.

RHODE ISLAND REDS

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A Miller, Alma, Nebr.

LOWER'S POULTRY FARM, ARVADA, COLO., is the oldest and largest breeder of thoroughbred S. C. Rhode Island Reds in the West. Our stock is line bred, from selected heavy laying type for seventeen years. Eggs for hatching, $12 per 100, $5 for 30. Send for catalog and price list of stock and baby chicks.

SEVERAL VARIETIES

BLACK-WHITE CRESTED POLISH PEN, WHITE Wyandotte pen; classy stock. Champney, 2057 So. Broadway, Denver, Colo.

BUFF ORPINGTONS AND SILVER SPANGLED Hamburgs. Orpington eggs $7 hundred, $1.25 setting. Hamburg $1.50 setting of 15 eggs. Leslie Chrestenson, Route A, Akron, Colo.

BABY CHICKS—NOW'S THE TIME TO GET A start with the best laying White Leghorns in Colorado, $16.00 a hundred; week old, $18.00. Reds and Rocks, $20.00. Denver Incubator Co. and Hatchery, 176 S. Broadway, Denver.

ANCONAS.

FOR SALE—10-WEEKS-OLD PUREBRED S. C. Ancona cockerels, bred from hens of a heavy laying strain, $3.00 each. Address, Mrs. Ves Laro, Maxwell, N. Mex.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted

HOGS

BIG TYPE POLANDS SPRING PIGS FOR SALE at weaning time. Correspondence solicited. Gad Barney, Haswell, Colo.

FOR SALE—REGISTERED BIG TYPE DUROC Jersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

FOR SALE—DUROC JERSEY PIGS, BIG TYPE and good type; also Holstein bull ready for service. Geo. S. Turner, Canon City, Colo.

FOR SALE—POLAND CHINAS, BIG TYPE BRED gilts, young boars, weaned pigs; all registered and the real big boned kind; prices reasonable. F. L. Toliver Stock Farm, Ft. Collins, Colo.

FOR SALE—A FEW REGISTERED DUROC boars left. Best blood lines available, such as Path Finder, King the Col, Good Enuff, etc. Three choice boars August 28 farrow by Orion Col. Price right for quick sale. C. Koebel, Hoyt, Colo.

BUY YOUR DUROCS AT WEANING TIME, AND make the big profits yourself. I have prize-winning gilts and boars a few weeks old sired by champions that should be worth several hundred dollars each this year. Write for prices. J. N. Caldwell, Willow Grange Farm, Littleton, Colo.

REGISTERED BIG TYPE DUROC JERSEY hogs. We are now taking orders for boars and gilts of March farrow for May and June delivery. Have one fall boar left. All sired by Orion Cherry King 15th, and I. O. D. Joe Orion, out of the best herd sows Write for prices. Money back if not satisfied. J. O. D. Ranch, Aroya, Colo.

CATTLE.

HOLSTEIN GUERNSEY HIGH-GRADE CALVES. Write E Terwilliger, 289 Lake St, Milwaukee, Wis.

FOR SALE—ONE WELL MARKED REGISTERED Holstein bull calf. Loving White Wyandotte Farm, Siloam Route, Pueblo, Colo.

FOR SALE—REGISTERED SHORTHORN AND polled Durham bulls and heifers. One double standard 4 year-old roan real herd bull. Please don't write unless you want to buy. J. H. Held Sterling, Colo.

REGISTERED HEREFORD BULLS—THIRTY bulls 12 to 24 months old, of the best Anxiety breeding, hardy and in good condition, with best of bone and ready to go on the range. One 2-year-old bull, full brother to champion cow at Denver, and a 5-year-old bull, the sire of most of the above. Priced for a quick sale. J. O. D. Ranch, Aroya, Colo.

SHEEP.

FOR SALE—REGISTERED SHROPSHIRE EWES and bucks. Some extra fine ones. A. M. Plumb Estate, R. F. D. 4, Box 47, Phone Red 27 R 2, Greeley, Colo.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—TO HEAR FROM OWNER OF FARM for sale. Mrs. W. Booth. H. P. Station, Des Moines, Iowa.

IF YOU WANT TO SELL OR EXCHANGE YOUR property write me John J. Black, 33d St., Chippewa Falls, Wis

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O K. Hawley, Baldwin, Wisconsin.

WANTED—TO HEAR FROM OWNER OF GOOD farm for sale. State case price, full description. D. F. Bush, Minneapolis, Minn.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description and cash price. Morris M. Perkins, Columbia, Mo.

SHAWNEE, OKLAHOMA, CENTER OF A GREAT farming country; write for free agricultural booklet. Board of Commerce, Shawnee, Oklahoma.

FARM AND CATTLE RANCHES—CHOICE LIST. Interested call or write F E. Wrockloff, Merchants Bank, Seventeenth and Curtis Streets, Denver, Colo.

REAL ESTATE WANTED—SELL YOUR PROPERTY quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., Dept 11, Lincoln, Nebr.

OWING TO CHANGE OF OCCUPATION, I WILL sell my ranch and full blood Angus cattle and Percheron horses, or any portion of them. Address G. F. Lucore, Arriba, Colo.

FOR SALE OR TRADE—GROCERY AND MARket in most prosperous mining town in Colorado; approximately $20,000 deal and all clear. Will trade for improved farm. Box 218, Breckinridge, Colo.

FOR SALE—408 ACRES, 160 IN HAY AND grain, rest pasture; good house and outbuildings; good water right. Horses, tools and 30 head cattle. For full particulars write J. D. Sterner, Aspen, Colo.

320-ACRE FARM FOR SALE CHEAP—6 MILES south of Fowler in Otero county, Colo. All good land; 40 acres has been in crop. Price, $12.50 per acre, one-third cash. The Irrigated Farms Mortgage Co., Cooper Bldg., Denver, Colo.

WRITE FOR FACTS ABOUT WYOMING LANDS; complete, authentic information on agriculture, dairying and live stock opportunities in irrigated and non-irrigated districts. Low priced, reasonable terms; good roads, schools and markets. Wyoming Immigration Commission, 324 Capitol Building, Cheyenne, Wyo.

WE HAVE BLACK LANDS FOR COTTON AND grain; loam lands for diversified farming, sandy loams for sweet potatoes and peanuts; grazing lands for live stock, and lands suitable for special crops, fruits or vegetables, either improved or unimproved, in small or large tracts. Write just what you want, and give us a chance to furnish it. Railroad Farm Bureau, San Antonio, Tex.

FOR SALE—152 ACRES; IRRIGATED; ALL tillable; in meadow and cultivation; first water right on never failing creek; six miles north of Cuba. 480 acres in one body; class A forest reserve for 1,250 cattle or 3,500 sheep; abundance water and grass; 200 acres tillable, ten miles east of Senorito, N. Mex. Will sell mountain ranch alone or both. Good stock country. Particulars address owner, M. C. Wiley, Cuba, N. Mex.

ATTENTION STOCKMEN — WE HAVE TWO stock ranch bargains. Just what you are looking for; each ranch comprises 320 acres deeded land with substantial improvements and large acreage under irrigation, and in alfalfa, timothy, clover hay, unlimited outside free range, with 4,000 acres of leased land under fence for fall pasture. These ranches are located three miles apart, 125 miles from Denver. Good shipping point, big money makers. Prices $12,000 and $13,600 on good terms. See us at once for these. Reynolds, Covey & Reynolds, 625 Exchange Bldg., Denver, Colo.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion No display type or illustrations admitted.

WRITE FOR DELIVERED PRICES ON CEDAR posts. Pay after unloading. J. B. Overton, Sagle, Idaho.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

BIG MONEY AND FAST SALES—EVERY OWNer buys Gold Initials for his auto. You charge $1.50, make $1.35. Ten orders a day easy. Write for particulars and free samples. American Monogram Co., Dept. 114, Glen Ridge. N. J.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

RAZOR HONING, 50c; SHEARS, BLADES, 2½c and 5c; hand finish, good workmanship. M. L. French, Fremont, Nebr.

LISTEN—I CAN PUT A STOP TO ALL YOUR binder and header canvas trouble. Send at once for literature. My guarantee is outstanding. Address G. F. Lucore, Arriba, Colo.

HATS CLEANED.

OLD HATS MADE NEW. S. M. BELWOOD, 1542 Court place, Denver.

TOBACCO.

TOBACCO—KENTUCKY'S BEST "OLD HOMEspun" chewing and smoking. Direct from farmers. Trial offer, 2 lbs. postpaid $1.00. Kentucky Tobacco Assn., Dept. 50, Hawesville, Kentucky.

PATENTS.

PATENTS—BOOKLET FREE. HIGHEST REFERences. Best results. Promptness assured. Send model or drawing for examination and opinion. Watson E. Coleman, Patent Attorney, 624 F st., Washington, D. C.

HONEY.

"THEBESTO" ROCKY MOUNTAIN HONEY, light colored, thick, fine flavored; per can, five pounds net, postpaid, anywhere west of Ohio river, $1.50. Send remittance with order. The Colorado Honey Producers' Association, Denver, Colo.

TANNING.

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

MACHINERY.

FOR SALE—CASE THRESHING OUTFIT, RUNning order, complete. Address, Albert Frey, Weldona, Colo.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

Profitable Farm Poultry

W. E. VAPLON.

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, Western Farm Life, Denver, Colorado.

Dollar Eggs Next Winter.

There was once a man named Simon; a good old codger and rather old, I suppose. In his later years, his great hope and only ambition was, to see the promised Messiah. Well, during my recent, declining years, I've had a deep and solicitous hope to see common hen's eggs climb over the dollar mark. Should the weather warm up slightly this summer so that my sluggish, corpuscleless blood can rejuvenate my wasted frame temporarily, I believe my ambition will be gratified. Eggs are going to be a dollar; if they are not, please forget that I prophesied it.

A high price was paid for eggs for storage; that's one factor that helps make the dollar price possible. Only about half the usual number of eggs are going into storage, that's a second factor; this condition alone would boost the price out of sight next winter, but add to this the fact that the country has had a poor hatching season because of bad weather, also the shortage of breeding stock, high prices of feed, material of all kinds and labor, the prices are bound to be above anything they have ever been.

The early pullet is going to shine; she'll be the only thing on the place that will be able to pay for her board. Of course, they have told us that June and July are just as good hatching months as any, but "they" have eggs for hatching or incubators to sell or some other axe to grind. As proof of their assertion they cite an instance of a July pullet that began laying in November and layed happily ever after; or the prize winner that was hatched in June. Quite frequently a pullet does lay at around four months, but pullets, enough to make it pay to stay in the game, require six to eight months good care to bring them to the laying stage.

Have you packed away eggs for the winter's use? If you have those early pullets, packed eggs will come in handy for home use, permitting you to get the "dollar"; if you haven't the early pullets, you'll need eggs and the canned eggs will tide you over.—W. E. V.

Testing Incubator Eggs.

Some time ago I bought an incubator and it hatched 43 eggs out of 69. This is my first experience with an incubator. In the instruction book I read about testing the eggs, but it did not explain how to do it. Kindly send me an explanation as to how to do it. Let me know also what a tester is, as with incubator came a tin piece with mica, somewhat like this diagram.—Mrs. M. L., New Mexico.

The apparatus you describe is the egg tester. It is supposed to fit a lamp in place of the chimney. The egg is held close to the end projecting from the side, so the light shines through the egg. A fresh egg shows clear, so does an egg which is infertile which has been in an incubator for some time. An egg which has been incubated for four or five days will show the chick to appear like a big spider; after that time the development is rapid. We would suggest that when you next start the incubator that you set a hen. On the 5th day test the eggs under the hen first; if any appear as clear as a fresh egg, boil them for chick feed; test them two or three times until you can recognize just how an egg should appear at that stage, then test the incubator eggs. Repeat on the tenth and eighteenth days. Soon you will be able to test rapidly and surely. If ever in doubt as to whether eggs are good or not, keep them in the machine, do not throw them away. Your first hatch was a good one. I hope you have the same success in the future.—W. E. V.

Disinfectants and the Ax.

Within the past six months I have lost several hens; their combs turn blue or dark and they gradually pine away, although I usually kill them as soon as I discover them. Also had several cases where the vent protruded was much inflamed and some swelling. Can you tell me the cause of these cases and cure?

Last year was a good one with me. I got results during the entire year. I had an average of 275 birds; two-thirds of these were hens. They laid for the twelve months 3,341 dozen eggs, netting $86.20 a month for the entire 12 months. Moulting season (October) they fell short $20, November $31, December $10, on the feed, but the average was $86.—L. R., Pueblo county, Colorado.

During two summers while Dr. B. F. Kaupp was at the College, we went into the matter of poultry diseases quite fully. We advertised extensively for some sick fowls and managed to pick up quite a large number; probably no two had the same trouble and we came to the conclusion that fowls have as many ailments as humans. Personally I am never alarmed at any disorder in my flock unless it attacks large numbers because of its contagious character. I used to keep a complete line of poultry remedies and suppose I got a great deal of enjoyment out of treating every ailment that came along, but I think I am safe in saying that my troubles increased with the course of time. My stock of drugs now consists of disinfectants for the drinking water when the roup season appears, and a good sharp ax. I believe that my own time and the time lost by the laying hen is worth more than the fowl itself. We get many such letters as yours but, of course, it is impossible to diagnose the case at a distance. However, should this trouble get alarming, ship a specimen that is very bad but still living, to the Veterinary Department of the College at Fort Collins, addressing the same to Dr. Newsom.—W. E. V.

INCOME TAX BOOK.

MAKE INCOME TAX RETURNS ON THE INventory method. Use a practical cattle record-book and keep a complete record of your cattle. The same book good for a number of years, $3.50 postpaid. Diamond Peak Ranch Co., Tie Siding, Wyoming.

FOR SALE --- A BARGAIN

THE SWEET SEED FARMS

Offer a complete Threshing Outfit, including
1 Compound 25 H. P. Reeves Steam Engine,
1 Reeves Separator.
This outfit has delivered satisfactory service for us. It is too large for our seed work.
The Price for the Outfit **$1,000**
IS A REAL BARGAIN.
Are you interested? Write or wire
SWEET SEED FARMS,
Carbondale, Colo.

For Sale: 12-25 Avery Tractor
Guaranteed in good working order. Real bargain..... **$650**
1739 15th St. Denver, Colo.

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.
C. F. Burke, Mgr. Pueblo, Colo.

Glendale Stock Farm

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Have for sale 35 two-year-old heifers.

We have a few High Class Yearling Bulls For Sale.

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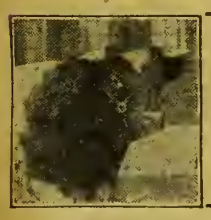

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We have a few splendid bull calves, most of them by the great Majesty's Feather Lad; and we need the room, so prices are right.

Out of Duroc boars, but have a couple of bred gilts to go.

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this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

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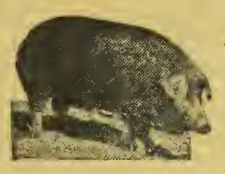
JOHNSTOWN. COLO.

JAMES PONTIAC DEKOL ORMSBY



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R. of M.—15,175 Lbs., 546.3 Lbs. Butterfat. Class A. Only a few cows of this breed exceed this record in Class A official test.

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He is about one-half white, and a beauty. Ready for light service. The first check for $350 takes him.

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FOR

Straight Bates Shorthorns are the "foundation source' of the Milking Shorthorns of England and America.

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Get Into the Purebred Game

I have twenty head of five to seven months old calves that I will sell at a close price of $50 to $100—and good ones at that.

Also yearling heifers and bulls, cows and calves.

Write me. I need the money.

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MILKING SHORTHORNS.
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Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.
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I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.

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20 yearling sows bred to farrow in August and September, priced to sell. All bred to our prize winning Crusader, winner at the Denver show. Shipped on approval and guaranteed.

"Daly's Durocs," Cambridge, Nebr.

I have been a subscriber for farm journals since 1885; am a subscriber to a local farm journal, but Western Farm Life is really the paper I can get the most help from in the dry farming operations. Parsons' articles alone are more than worth the subscription price. —Aaron Schollars, Idahome, Idaho.

Have You Seen That New John Deere Plow?

It's Built Especially For the Fordson Tractor

Because it is built of new-process John Deere steel, the No. 40

weighs less than the average horse-drawn sulky plow;

pulls extremely light—a real fuel saver;

stands the strains under all conditions — its beams are guaranteed not to bend or break.

Due to the self-adjusting hitch—an exclusive John Deere feature — bottoms run true and level at all depths — they neither "nose in" nor "hop out" of the ground.

Its John Deere bottoms insure good work.

YOU have been hearing for some time, no doubt, that John Deere was building a new plow especially for the Fordson tractor.

Perhaps you are one of the many farmers who asked that John Deere build such a plow.

Perhaps you are one of the many who have gone to John Deere dealers with the query: "When can I see that John Deere plow built especially for the Fordson?"

John Deere specialists took their time in building the plow. They had the John Deere reputation to consider, first of all. They knew that farmers expect especially good performance from a John Deere plow. Their task was to give the user the benefit of such performance behind his Fordson tractor—to fit a John Deere-quality plow to the Fordson as carefully as a good tailor fits a suit of clothes to a customer.

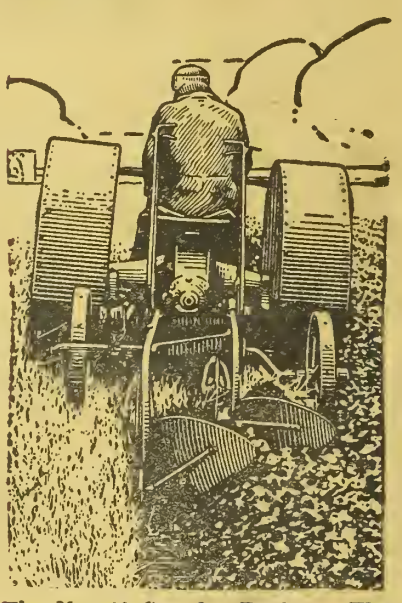
The plow is now ready. It has been branded with the famous John Deere trademark of quality. It is called the John Deere No. 40.

Here Are Features That You have been Wanting

Imagine a two-bottom tractor plow that is lighter than the average horse-drawn sulky plow—

—a tractor plow that pulls so light that it soon pays for itself in lower fuel consumption, greater acreage per day, minimum wear on the tractor—in all the factors that mean lower plowing cost per acre—

—a tractor plow that has this desirable light weight and light draft **plus** tremendous strength—**beams that are guaranteed not to bend or break**; frame construction that stands all of the strain of utilizing the tractor's power under all conditions.



The No. 40 fits the Fordson. The No. 45 is built for use with ANY "two-plow" tractor.

Those are important features of the No. 40 that you are sure to appreciate.

Beams, braces and axles are made of a **new process, John Deere steel** that combines the desired lightness with the necessary strength.

It's the Plow with the Self-adjusting Hitch

The No. 40 has a self-adjusting hitch—an important advantage in plowing with the Fordson.

When you adjust the plow for depth with the depth lever, the hitch point automatically regulates itself to the correct line of draft. That means that the bottoms run true and level at all depths, doing uniformly good work all the time.

It means that there is no undue wear on shares because of bottoms "sledding" or "running on their nose"; no worry or loss of time over hitch adjustments.

The self-adjusting hitch is exclusively a John Deere feature. Any plow for use with the Fordson needs it, but—no other plow has it.

John Deere Bottoms do Good Work; Wear Well

The No. 40 is equipped with genuine John Deere bottoms—the bottoms that scour, wear well and make good seed beds.

These bottoms include both steel and chilled types in a variety of shapes to meet different requirements.

The shares are quick detachable—loosen one nut to remove a share: tighten the same nut and the share is on tight.

The power lift of the No. 40 is simple, strong and positive. It works perfectly. The lifting parts move only when the plow is being raised or lowered—practically no wear.

This is the Plow the Fordson Needs

If you are planning to buy a Fordson tractor, it will pay you to investigate the No. 40.

The tractor will give you pulling power. It will be up to the plow you buy to apply that power. Remember that, no matter how well a tractor may do its part, the plowing outfit is no better than its plow—just as no knife is better than its blade. You need the best plow you can get.

The No. 40 may be on display in your town now. If it isn't it soon will be. Get acquainted with it thoroughly before you buy your tractor.

The best place to judge the No. 40 is in the field. Watch it at work and see for yourself how wonderfully light it pulls; how simple and strong the hot-riveted frame construction is; how the self-adjusting hitch keeps the bottoms running true and level at all times, and how the bottoms scour, pulverize and turn the soil in that John Deere way—the way the practical farmer wants it done.

Another Plow for ANY "Two-Plow" Tractor

If you are planning to buy a "two plow" tractor other than the Fordson you will be interested in the John Deere No. 45. This plow is exactly like the No. 40, except that it has a flexible hitch and rear furrow wheel. It has the fuel-saving light draft, the strain-resisting strength, and the seed bed-making qualities of the No. 40. It is adaptable for use with any standard two-plow tractor.

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JOHN DEERE
MOLINE, ILLINOIS

IN

AUG 21 1920

WESTERN FarmLife

Vol. XXII. *Denver, Colorado, August 1, 1920.* *Semi-Monthly*

HAPPINESS UNDER THE HEDGEROW IN THE SUNNY SUMMERTIME.

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Their traction has increased truck utility for farmers, ranchmen, fruit growers, dairymen and others, particularly owners of motorized farms, by enabling easy hauling through soft fields.

Their cushioning has effected continuous savings in the marketing of delicate vegetables, fruit, dairy products and of eggs and livestock, all of which suffer on slow, jarring solid tires.

Their nimbleness often has accomplished more hauling with less driving and resulted in a quicker feeding of power machinery while releasing hands and saving time for farm work.

Throughout extended terms of service these virtues have been delivered with the stout reliability developed in Goodyear Cord construction by manufacturing methods that protect our good name.

Farmers' various accounts of their successful use of Goodyear Cord Tires on trucks can be obtained by writing to The Goodyear Tire & Rubber Company, Akron, Ohio.

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A Western Magazine for Western Farmers and Stockmen

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Entered at the Denver Postoffice as Second Class Matter

VOLUME XXII. DENVER, COLORADO, AUGUST 1, 1920. Number 15.

Safe Farming Plan Helps Negroes to Success

DEARFIELD COLONY GOES IN FOR DAIRY COWS AND SILOS

ALVIN T. STEINEL.

O. T. Jackson, founder of Dearfield Colony, and Mason E. Knapp, the County Agent.

AN inspiring example of successful negro colonization may be seen in southeastern Weld county, Colorado, where some seventy or eighty colored families have taken up homesteads on the dry land, which they are developing into prosperous farms. This colony is no mere cluster of humble dwellings around a townsite. It is a prosperous, wide-awake farming community reached from the north by the station of Masters on the Union Pacific and from the east at Wiggins on the Burlington railroad. It is known as the Dearfield colony and the town of the same name is located about two miles from Masters. Dearfield is a hamlet comprising two store buildings, garage and a cluster of dwellings surrounded by a well laid out townsite, its streets named and numbered, awaiting the time when the trade of the colony should result in the building of a town. A few miles away over toward the center of the settlement lies Chapelton, with a store as nucleus for another village. These two towns of the future point a moral. They show that the Dearfield colony is building from the farm up and not, as is often the case with colonization schemes, from the town outward.

The writer has seen many townsites in the boom days of the southwest and some sizable little cities that had everything from general store to churches; that is, everything but trade for which the merchants were waiting in the hope that the country thereabouts would soon be settled. Not so in the Dearfield colony. Here there is apparent every evidence of a well thought out land colonization scheme.

This is due to the foresight and wisdom of the founder of Dearfield, O. T. Jackson, whose parents fled from slavery in Virginia to Ohio, where he was born during the stormy days of the Civil War. As a young man Jackson came to Colorado with 20 cents in his pocket. He had learned catering and he made a living at this in Denver. There was in him a love for the land and as soon as he was able he bought a small farm in Boulder county on which he lived for sixteen years. He was impressed by the need among the people of his race for a chance to get ahead. The example of Booker T. Washington was before him and he resolved that when opportunity came he would prove to the world that the negro can advance from the tasks of the common laborer and become a citizen-farmer. This opportunity did come.

Always interested in public affairs Jackson took considerable part in politics and on the election of John F. Shafroth to the governorship he was made messenger to the governor. He served through the Shafroth and Ammons administrations and it was during that period that he found opportunity to select a site for the Dearfield colony. He was fortunate in securing practically the last considerable body of arable homestead land in eastern Colorado. This section had been noted for its excellent grazing and while it is quite sandy the colonists have found it profitable from a farming standpoint. They are all aware of the difficulties and are on the lookout for suitable means of controlling the sand by plowing under fertilizing crops.

Shipping Cream and Poultry.

The main business of the colony at present consists in shipping out cream, poultry and eggs. A few of the farmers are also going somewhat extensively into turkey raising and finding this a profitable side line. Of course, they have the regular dry farming crop program, but they are not making the mistake so often made of breaking out more sod than can be economicallly handled.

The first settlers took up their homesteads nearly ten years ago, Jackson among them, so that the colony has passed the experimental stage. During the time they were proving up many of the colonists worked away from their farms during the winter months laying up a nest egg, which enabled them to buy a few cows and the necessary implements, so that they could blossom out in time as full fledged farmers. They have reached that stage now and very few of them find it necessary to leave their lands to look for labor elsewhere, though calls for help from towns and farms are insistent.

Contrary to the usual history of such movements, these first settlers in the Dearfield country are the permanent occupants of the land. Only two farms have changed hands in the history of the colony. All of the balance are the original entrymen, most of whom have proved up and now have title to their lands.

In company with Mason E. Knapp, County Agriculturist for Weld county, the writer recently had opportunity to visit the Dearfield settlement for the second time. Progress since the previous visit three years ago was apparent on every hand. These people are working in agricultural development from the community standpoint. Several projects are under way and the county agent is finding that they cooperate just as well as do the farmers of the white race. In fact, they seem more willing to follow directions in regard to experiments with new crops. One of the projects undertaken in the colony is that of sweet potato growing. On the occasion of the writer's visit the county agent delivered 1,000 plants to a number of the colonists who had gathered at Houston's store in Chapelton for the purpose of taking up this work. The plants were given out by a leader whose business it is to keep track of the experiments and post the county agent regarding the success of the venture.

Cucumber Growing Succeeded.

Last season a number of the colonists tried cucumber raising on the dry land at the instance of the Heinz Pickle Company, who furnished the seed and supervision of the experiments. This work proved quite a success, one farmer reporting a revenue of $100 an acre. Others also did fairly well. The result is that this season 75 acres in cucumbers were put out in one, two and three acre patches by various colonists. The company furnishes the seed and in case of failure of the crop the farmers are out nothing except the use of the land. There is, however, little fear of a failure this year, because moisture conditions are excellent and the colonists should average $100 an acre on their pickles.

They deliver the product at one of the stores in the colony and the company sends in a truck to haul out the pickles to the shipping point at Masters. They pay $2.25 per hundred for pickles of normal size, running about 4 inches; 75 cents a hundred for larger ones, 4 to 5 inches, and also take the "nubbins" at 40 cents a hundred. There is, therefore, practically no waste.

If the pickles under dry land conditions prove to be the success now in prospect their culture will be extended throughout a large region in Weld and adjoining counties. Heretofore practically the entire crop has been grown under irrigation and it has been generally believed that it would not be profitable on non-irrigated land.

Feed the Family First.

The colonists are trying to follow a program of producing first all that is needed for sustaining themselves and their livestock and taking up cash crops as supplementary to their regular farming program. Milk cows are found on practically all farms in the colony and a few of the settlers have acquired fair-sized herds that bring them a considerable revenue in cream. They need silos and one of the projects now being pushed by the county agent will take care of this need.

Good type of cattle in the Dearfield Colony. Photo taken on the Pritchett & Downey farm.

On the day of the writer's visit County Agent Knapp secured five new members for his silo club—that is five of the colonists signed a pledge to build a silo this summer if possible, and specified the number of acres they would have in corn or other crops to fill. The new members included J. J. Houston, W. C. Howell, C. W. Rothwell, D. C. Holly and O. T. Jackson, all of them agreeing to plant twenty to thirty acres of corn and to put in a pit silo unless something unforeseen prevented. Several others told the county agent they would take the matter under advisement and while not ready to join the silo club would probably be counted in before the summer was over.

Mr. Jackson, who is running the general store at Dearfield, is also farming and has besides the regular grain crops 35 acres in alfalfa, which is in flourishing condition. He has a practical negro farmer on the land, Robert Lisenby, who came from eastern Oklahoma last year. There are several other negroes in the colony who came from farms and plantations, but most of them were recruited from the occupations usually followed by people of the race, including porters on Pullman cars, cafe waiters and the like. Without exception they are in better circumstances than ever before and there is perhaps not a family in the colony who would be willing to give up the land and go back to town, even if they sold at a large profit.

Making Progress Socially.

From the social and educational standpoint similar progress is being made. The school in the center of the colony, known as the Chapelton school, is entirely in the hands of the people of the race. There is one teacher with eight grades to handle, indicating a need

(Turn to Page 17.)

Group of Dearfield colonists meeting with County Agent Mason E. Knapp for distribution of sweet potato plants.

Woman's Views on Discontent Among Farm Wives

VIGOROUS COMMENT ON JOHNSTON'S ANALYSIS OF FEMININE UNREST

FRANCES H. BROWN.

Frances H. Brown, Kit Carson, Colo.

I READ "Why Are Women on Dry Land Farms Discontented?" in the June 15 issue of Western Farm Life with more than ordinary interest. I find myself wishing that Mr. Johnston had told us something of those very few homes where the women are contented; had he done so it might have gone a long way toward the solution of the problem.

Extreme weather conditions exist, at more or less frequent intervals, in any place; and no doubt has a depressing effect on everybody concerned, but I refuse to believe that my sex in general do not meet these emergencies with as much courage and fortitude as their husbands. In fact, it is usually the wife and mother who lay awake nights thinking, thinking, scheming, to make the most of a flat pocket book, and isn't it generally that same body that sees that all the other members of her household are provided for before she even makes a list of her own needs?

I frankly confess the hardship. But no, that is not a sufficient reason for extreme discontent on the part of farm women in any location. Of course, there are women and WOMEN, just the same as there are men and MEN—but we will not attempt to discuss this phase of the subject. Suffice it to surmise that every one of our readers have at some time or another met both types of either sex.

I think I can safely say that the majority of the feminine population of our section of dry land country, where the men are making an honest effort to do their very best to provide a "homey" home, with all the comfort and convenience possible within their time and means, both inside the house and on the place; are not only contented but happy and proud of what little success they have achieved. If our obliging editor of Western Farm Life could slip around a swarm of housewives that congregate in the stores, on the street, at sales, at school dinners, church, and all kinds of gatherings, and see the gleam of pride on the faces of a few of them as they boast (and I am sure that is quite pardonable), of the fruit and vegetables they have picked off their own bush and tree, and then note the tone and manner of the remarks of the less fortunate sisters, I believe he could draw some pretty accurate conclusions of his own about the whyfore of some of the dissatisfaction among farm women in eastern Colorado.

I know there has been much said and written about the monotony of the farm, but— well, perhaps I am not a capable judge—I was born on a farm, raised on a farm, and lived for a time in the city, married and went back to the farm, and for the past ten years have existed on a dry land farm in eastern Colorado.

When we arrived in First View, en route to our new home on the plains, we were informed by the lady in the section house, that being the only eating place the "burg" boasted, that—this country was easy on the men, but "awful" on the women, who had all the work of the living on their own hands. She was then eagerly looking forward to the time in the very near future, when she could take her children, about three I believe, turning their backs forever on 'dry land farming," hauling water, and cooking for section hands, and return to civilization in Chicago.

Tried to Discourage Her.

I was almost too sick at the time to hold my head up, having come to Colorado in search of health, as well as wealth. However, I made a brave effort and replied with some warmth, "Believe me, I don't expect to make any able-bodied man's living here or elsewhere."

She gave me a peculiar pitying look, as much as to say, "That's what you think now, but you will see," and then aloud, "Well, I hope you don't have to, you don't look as if you could, but they all do that stay here."

Since then I have heard men say, "This country it all right, it suits me fine, I never lived so easy, or worked so little in my life. All a fellow needs is a few cows and chickens and the women and kids can tend to them."

Calamitous? Yea, verily, when one's partner is not with them heart and soul. But, is the balky horse always on the same end of the double-tree? I imagine it would take a wonderful lot of courage to face the notoriety of the divorce court, and brave the merciless remarks of a pitiless public, for women, as a rule, are very sensitive and do not seek their freedom if a just peace is possible. But if a man breaks every vow—ceases to provide, love, honor and protect—the woman that will continue to be faithful must have access to a wonderful store of grace, especially, if coupled with all this be the numberless sacrifices necessary for a winning game in a new country.

On the other hand it is almost, but not quite, as pitiable (since the man chooses and proposes) where the wife insists on just being a "help-eat" instead of a "help-meet," frets and fumes constantly to get back to civilization and society where hubby can work his head off to pay big rents and face a vision of a homeless old age, want, and worry.

It has been my observation, where dissatisfaction has existed in homes in this section of eastern Colorado, it was just as likely to be the man as the woman, and it certainly is a deplorable condition in either case, but the question arises, would the atmosphere of that home be any different here or there? It seems a pity the "whiners" didn't all get together and leave willing workers unhampered.

Sympathy and Forbearance.

A big dose of mutual sympathy, and sensible forbearance, flavored with the respectful caution of courtship days, a generous sprinkle of personal pride that forbids untidiness in any form mixed thoroughly in the sweet syrup of "Do unto others as you would they should do unto you," would possibly be a safe "scarecrow" for those "bugbears" of monotony, isolation, changed standards, narrow barren walls, and all the other trials that so beset the lonely, homesick wife. But mind you, it must be mutually used, one-sided affairs are always ungainly and sooner or later tumble down, the sooner the better, too.

Sometimes a woman fumes and frets herself sick about living in such a "hole" when she might, if she only would, go to work and convert it into a darling little nest, clean and tidy as a new pin, not only a source of delight to herself and family, but an inspiration to other discouraged sisters, who might be so fortunate as to catch a glimpse of that particular corner of "heaven on earth."

It is a happy faculty, of woman, far and wide,
To turn a cot or palace into something else beside,
Where brothers, sons, and husbands tired,
With willing footsteps come;
A place of rest where love abounds
A perfect kingdom, Home.

I could tell you of a young couple who started to their new home on the plains of this same eastern Colorado, as soon as the ceremony was said. They had a 10x12 board shack, which, of course, would hold but very little furniture. They bought a cow with money given the bride by her father for that purpose and borrowed a horse, and settled down to the business of making a home, and what a success they did make! Friends and relatives were royally entertained in that snug little nest, kept over night, if you please, feted and feasted, and left with warm admiration for the plucky little woman who so cheerfully accomplished so much with so little.

Today, not many summers later, they have a nice cozy home, painted and porched, a roomy barn, garage to run a dandy car of their own into, a nice bunch of good cattle and horses and the consoling thought of a $10,000 home, more than an average of a thousand dollars a year, besides a good living, by pulling together and sticking.

There's many a sorrow would vanish tomorrow
Were we but willing to furnish the wings;
But sadly intruding, and quietly brooding,
It hatches all sorts of horrible things.

The Grandeur of the Prairie.

To me, the bigness, the wildness, the untamed grandeur of the fenceless prairie, was in itself a fascination. God's great big "out-of-doors" seemed somehow to be nearer heaven, consequently closer to the heart of the Creator, who not only understood all one's troubles and perplexities, but possessed the power to readjust the darkest cloud to reveal the silver lining. Sometimes the thought that no human voice was near to mar the awesome quietude that hovered over and around one like the boundless love of nature's God, was in itself a benediction. One could sit beneath the stars and soar away in fancy to a pleasant world, peopled with congenial folk who understood and sympathized.

When the elements blustered and rumbled and roared, making a plaything of our insignificant abode, there was still a source of interest and wonder in it all, a consciousness of a watchful eye, and loving care, a shelter in the fiercest storm. The little shack would often sway so much in the terrible wind that the door could not be opened. We passed in or out via the window on the sheltered side of the house, yet my little ones had no thought of danger. They stood by that window and laughed merrily at the antics of the big weeds that raced madly over the prairie, leaping like some live thing high up in the air, then crouching low, as if to spring on its unsuspected prey. It really seemed as if the frail shanty and all within must surely follow suit at any moment. But why worry? It would only serve to make shrinking weaklings of one's children, besides to fear is cowardly; to trust is sublime. My parents were serene in danger, and a thousand times a thousand am I grateful for their noble example.

Bless you, my sisters of the Dry Land! Life is brimful of interesting possibilities. When the clouds darken, and thicken and swoop down, threatening to completely engulf you in inky blackness with no friendly ray of light to guide in any direction, mount your most absorbing "hobby" and ride triumphantly away. In a surprisingly short time your "sky" will clear; your little raft that had all but gone to pieces while the breakers rolled, will once more become a pleasure-boat, sailing serenely down the stream of life.

The harder the battle, the greater the victory, if won, and if it must be lost—isn't it a consoling thought that we fell facing the foe? Why not, like Pollyanna, be glad your house is small especially after one of those awful dust storms. It doesn't take so much time and elbow grease to clean it up. Likewise those stacks of stored furniture, be glad they are not here in the way getting ruined. In any case, why kick the country? It's God's handiwork, and was planned for a purpose to fill its own particular place in a grand program for the children of men, by an all-wise Creator. If one doesn't like it the world is wide and the roads all open to many climes.

The Bone of Contention.

Last but not least, in fact, the one BIG reason WHY women are so dissatisfied on the farms, whether "dry" or "wet," is touched in Mr. Johnston's fifthly—rather lightly, and—well, I am not quite sure that it is a safe proposition to tamper with the biggest "bone of contention" that has ever been found to exist between husband and wives since the world was made, for fear of making it worse instead of better. However, nothing ventured, nothing gained.

In my experience and observation I have never found any limitations made, nor lines drawn against the wife's privilege of co-operating in the farm work, bless you, she is absolutely free to take her full share and then some, but—when it comes to a question of management, especially of the funds, whew-ee!

What an absurdity! If a woman is capable of handling a team, a cultivator, a mower, hay rake or hoe intelligently, and if on top of all this, she can and does successfully carry three to half a dozen side lines, namely, keeping the household machinery in good running order, raising chickens, tending cows, and slopping hogs, making dresses sometimes for others beside her own, fashioning the pretty handmade laces for their adornment, doing her own millinery, and all the while wearing the crown, and listen ye men, bearing the burden of motherhood, think you she couldn't handle your little old flat or fat, as the case may be, pocketbook with credit to herself and an honor to you?

Full share of the work—none of the proceeds! Full share of your troubles—often unnecessary ones at that, and all too often none of your pleasures! Big barn full of horses and labor saving machinery, of which, bless your heart, she's just as proud of as you, little house full of nothing but work and heartaches, hubby fat and sleek as a blanketed horse, wifey as faded and worn as the old carpet! My! what a picture. Can it be real? "Tragic if true." Well, I should say so. When that faithful little or big helper is all tired out, when weary limbs refuse to bear up the still more weary aching head, is husband all sympathy, love and devotion, in the same measure as he expects from her to himself? If he is, I'll bet a button wifey's glad she's sick, or is he grouchy as an old sore-headed cat because he either has some extra work to do himself, or else part with some of his treasured dollars to pay for having it done, and blaming it all on the poor tired wife for tumbling up in the busiest time she could find!

But even in these extreme cases the woman is not altogether blameless. She should have held her own, even good men can be spoiled the same as babies.

I have heard more than one woman say, "Well, when we were married, you know I didn't have much to do, so I would surprise my tired boy by having the feed all in for the teams and the cows all milked when he came in from work. Now since the babies have come I have more than I can possibly do of my own work, but he expects all kinds of help outside, just the same, and is mad if he don't get it."

Bah! hasn't he the same territory to be glad in? Stay in the house and save your strength for the bigger job he has given you of raising his children. It never was intended for a woman to do a man's work on the farm anyway. She's not built for heavy lifting and I care not how strong she may be, when she begins it, sooner or later she will pay a big price for all she may have accomplished.

A dear, little, ambitious girl stopped in with me one day. She with her baby girl, was helping her husband take purebred cattle from the station, that they had had shipped in. We had quite a visit and she was relating her achievements in the farming line since they had homesteaded here. I shook my head, "Better quit it," I said, "before it is too late; it don't pay in the end, never."

The Inevitable Happened.

In a very short time she came to me all broken, asking if I thought electric treatments would cure her. I heard nothing more until the sad news of her death, leaving that precious baby girl motherless and the husband she was trying so hard to help get a start in the world a wiser and a sadder man, remorsefully facing the fact that she might have, in all probability would have, still been with them, if she hadn't worked so hard.

What had she gained? Possibly not a tenth of the amount paid out for doctor bills, to say nothing of the suffering and funeral expenses, the loneliness and heartaches of her loved ones left behind. I tell you—God made a woman to be a WOMAN. If He had wanted a man to be a helpmate to a man, believe me, he would have made another man. But because a woman stays in the house is no argument that her end of the yoke is not fully kept up, or that she is not in every respect worthy of an equal

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Building of Pit Silos Demonstrated to Farmers

PROGRESS OF DAIRYING IN BENNETT-STRASBURG SECTION

H. A. LINDGREN.

THE farmers in the counties of Adams and Arapahoe are building silos at quite a rapid rate. This is especially true in the dry land sections, as the farmers appreciate the need for a better system of feeding during the winter months. In these localities it is possible to go to a depth of 40 feet in many cases for pit silos which affords quite a storage place for ensilage.

A silo building demonstration was conducted recently by County Agents Vanderlip of Arapahoe county and Kidder of Adams county on the farm of J. A. Wharton, near Strasburg, Colo. Some twenty-five farmers met at Mr. Wharton's farm, marked out the ground for the silo and excavated for the curb, which was largely completed during the afternoon. The demonstration was a very practical one, as the actual work was done in the presence of those interested.

The ground was measured carefully in relation to the farm buildings and the place selected for the silo was at the end of the proposed barn, to be built some time in the near future. A stake was driven into the ground in the center of the place selected for the silo. A beam of 1x6 material was used to mark out the circle for the curbing. This beam was exactly 6 feet 8 inches long, as the silo to be built was to be 12 feet in diameter. Two iron pins were driven through the 1x6 beam, 8 inches apart, the first one being exactly 6 feet from the center of the silo and which marked out the inside wall of the curbing. The other pin was 8 inches out from the first one, which marked the outer wall for the curb. A nail was driven through the beam and into the center post. The circumference of the curbing was then drawn or marked out on the ground. The dirt was then thrown out for the curb. This excavation was between the two lines drawn and was 18 inches deep when completed. The inner circle was kept as straight as possible to make a smooth inner wall on the curb. This excavation provided the forms for the concrete, to be used in making the curb. Concrete was mixed from the material of that section with a mixture of 1—4. The forms were poured full of the concrete and left to set, this providing the curb for the pit silo and also a foundation for a slight wall above ground if so desired.

Old barbed wire and fence wire was used to reinforce the concrete for the curb. The next step in the construction of the pit silo will be to excavate the dirt from the center and start digging down below the curb. As this is done the wall will be plastered with concrete the thickness of 1 inch. The plastering is done at the same time that the digging is carried on, so that by the time the digging is completed the plastering will also be done. This prevents caving of the hole.

The pit silo has been the cheapest form that could be made. However, the excavation work is much more expensive now than it used to be and on account of the scarcity of labor it is very difficult to get it done. At any rate this type of silo is a very practical one and is well worth while, especially where it can be built at odd times when the farmers are not busy at something else. The farmers in the Strasburg section are very much interested in livestock as a means of improving their farming conditions. Many of them are carrying on dairying with very good success. They are trying out various crops, such as corn and sunflowers, with which to fill their silos. Quite a number of the farmers in this locality are interested in Milking Shorthorn cows and it is a pleasure to see some of the cows that are being developed.

The writer had the opportunity of examining herds while on this trip and many of these cows were producing as much as 40 pounds of milk and even better on the pastures that are available on the prairie. Any cow that will do that is a practical one for them. They feel that the specialized dairy breeds will not make as good use of the pasture as the Milking Shorthorn cows will. At any rate, many of the specialized breeds will not average as well as the hardier cows under such conditions. The more one sees of the development that is being made with the Milking Shorthorn cows the more they are impressed with their practicability under the dry farm conditions of the west. It has not been very long since many of us thought it folly to spend time in trying to develop a new breed when we had so many good dairy cows of the specialized dairy breeds. However, we are beginning to find that such a cow as the Milking Shorthorn is mighty practical under such conditions as found in these sections.

There is still no argument about the matter, however, where one is making a business of dairying and has every possible feed needed to produce milk. The specialized dairy breeds should by all means be selected under such conditions. The stockmen in the Strasburg section have a most valuable ally in Grover Totten of the Strasburg bank, who is an enthusiast along the lines of livestock production and encourages the farmers in every possible way in getting more dairy cows or other livestock on their farms.

With this he is encouraging the building of silos and better feeding methods. He argues against the production of wheat alone, or some other single crop and thereby is accomplishing a great deal of good in that section. Mr. Totten is secretary of the Arapahoe County Farm Bureau and is certainly a valuable man for that work. The more we see of the dry farm conditions in Colorado the more we realize their importance to agriculture in the state.

There is much interest being shown in the production of Kanred wheat and the county agents together with Mr. Totten are taking orders for several demonstration plots for this fall's sowing. Mr. Totten has brought into the county a supply of winter barley which is being grown with very good success by the farmers of that section. This barley has produced as high as 18 bushels to the acre on the dry lands, as compared with 6 to 10 bushels of wheat on the same land. This barley is unusually well filled and supplies a larger number of pounds of feed per acre as compared with the other crops grown.

These farmers in the vicinity of Strasburg have formed a bull club and own a very good Milking Shorthorn bull co-operatively. This bull cost them $300 and is an excellent individual. Unfortunately, however, he is ailing at this time and it is a question as to whether or not he will pull through. However, the members of the club are not discouraged, but intend to purchase another bull to take his place. The bull is being kept on the farm of Fred Haupert at Bennett, who has an excellent herd of good producing Milking Shorthorns. He has several cows in his herd that are producing 40 pounds of milk daily.—H. A. L.

Demonstration in pit silo building on the Wharton farm near Strasburg. Laying out the circle for the rim.

Zone Plan of Spraying Service is Explained

FURTHER DETAILS ON OLIN'S TOUR OF NEW YORK ORCHARDS

ARTICLE III.

W. H. OLIN, Supervisor of Agriculture, Denver & Rio Grande Railway.

FROM an orchard grower at New Fame—Mr. J. A. Collum—the writer learned that the spraying service Mr. Peet has installed in the county in co-operation with Inspector Strickland of the State Bureau of Plant Industry and the United States Weather Service, has been of tremendous value to fruit growers. Talking with Mr. Peet, he modestly told me this was an outgrowth of the results R. E. Heard of Lockport obtained, through having Inspector Strickland tell him the exact time to spray to get the greatest efficiency. Mr. Heard followed this timely advice through the spraying season of 1916. That season he barreled 80 per cent of his apples "A" grade, while his neighbors had to pack ungraded on account of the prevalence of apple scab in their orchards. Believing that what is good for one should be helpful to all, Mr. Peet conferred with Mr. Strickland to see if he would be willing to extend this helpful service to the whole county. "Barkis was willing" in this case, provided certain facilities were furnished for making this service effective by arranging to get the information to all parts of the county "right now."

"There must be some arrangement of sending to growers quicker than mail service," said Mr. Strickland.

"Leave that to me, it will be done," said Mr. Peet.

The plan was first outlined to the state meteorologist and through his office arrangements were perfected whereby weather maps were furnished by mail from Buffalo, giving forecast based on 8 a. m. readings daily, supplemented by telegrams each night to Inspector Strickland, giving forecast based on 8 p. m. reading, which is made at Washington alone. The weather service also agreed to telegraph special storm warnings. Then the central office of Farm Bureaus, representing the United States Department of Agriculture, the State Department of Agriculture, Albany, and the New York College of Agriculture, was approached. Its active support and co-operation was secured. Last of all the executive committee of the Niagara County Farm Bureau was asked to pass upon the whole plan. This committee represents the farmers of the county and have the final word of approval upon projects to be carried out. March 20, 1917, they gave their hearty approval. Then the County Farm Bureau Manager "got busy."

A post card was mailed to every farm bureau member calling for a vote on the question of whether spraying service information was wanted or not. The card also bore a pledge in which the orchard owner stated that he was willing in return for spraying service, to telephone the information to at least three men or to carry it to one man who has no telephone; that such information would be conscientiously carried forward immediately after receiving it; and that he would agree to fill out and send in reports regularly to the Farm Bureau upon blanks supplied by the bureau, covering various points concerning receipt of the code message; time when spraying was begun; what solution was used and how much; how many trees were covered and when spraying was finished, etc.

Almost immediately 833 replies came in stating the writers wanted the service and would co-operate in the manner named to make the service effective.

Zones of Action.

The presence of large bodies of water like Lake Ontario and Niagara river and because of differing soil types and varying elevations in the county, it seemed wise to divide the county into such a number of zones as shall have within a given area more nearly the same period of growth and should therefore be given the spray at the same time. After due and careful study of orchard development six zones of action were blocked out. Within each zone certain orchards were selected as criterion or investigational orchards. These criterion orchards the inspector would visit and determine time for spraying all orchards within a given zone, from development of growth he found in the selected orchards. It is an impossibility to cover all orchards for this work within the short space of time allowed, so this became the feasible plan upon which to operate. What stage of development the inspector found in criterion orchards determined his conclusions for action. When he felt certain best results required spraying the next day, or second day after his investigation, he phoned to Manager Peet's office in Lockport. Same half day this message was received, it was phoned out to a selected number of men in that particular zone. These leader-men, by a telephone relay system, worked out by Mr. Peet with the telephone company and the growers, sent the message by telephone code system to growers within the zone. By this telephone relay system, in five turnovers 121 growers were reached. In case a grower had no telephone his nearest neighbor who had one, was asked to convey the message to him and report back the carrying out of that instruction. No one man was asked to send more than three telephone messages and in case a message was to be carried to grower without telephone service, he carries same to but one person. Care in selection of only most dependable growers with important fruit interests was exercised in naming telephone leaders in this relay service. Each grower leader was given the code message, which he in turn repeated to three fellow growers. To know these instructions were carried out report blank was filled out and sent in after the service was performed.

(Prof. Olin's bulletin on this subject will show a reproduction of one of these report blanks from which readers will learn exactly how the system works out.)

This spraying service has proven so beneficial it has been maintained each season since it was put in. It has helped very materially to increase the membership in the Farm Bureau since it is sent only to members of the bureau, as the bureau pays all expense of the service. In talking with the superintendent of the Lockport Power and Light Company, he told the writer the present manager of the County Farm Bureau was doing the county a very great good in putting the fruit industry upon a stable basis.

"Olin, Manager Peet has done more constructive work of benefit to the whole county within the last four years than had been done by all concerned in the preceding twenty years."

What this county of Niagara is now doing in stabilizing the fruit industry can be done in all our producing districts in the intermountain west.

It is a clear illustration of what team work may and will accomplish in an organized effort for standardization of quality to secure a stabilized price.

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The Elbert County Shorthorn Sociability Tour

INSPECTING PUREBRED CATTLE ON THEIR NATIVE HEATH

H. A. LINDGREN.

THE stockman who has never visited Elbert county has missed a real treat when it comes to viewing an ideal cattle country. The rolling hills of that section covered with a good coat of green grass are a joy for any stockman to look upon. The writer has never seen a more ideal section anywhere for the handling of cattle than that found in Elbert county. The second annual sociability Shorthorn run was staged recently in this section. The event was conducted under the auspices of the Elbert County Shorthorn Breeders' association. This association is made up of some twenty-five stockmen, all interested in the development of the Shorthorn breed. Not all of the members are in Elbert county, but the breeders in El Paso and Douglas counties as well are interested in it. The grass in this section holds up well all through the summer. Rainfall is ample, so that it is kept growing throughout the season. Not only are they blessed with a good grazing section, but there is enough bottom land on which to raise corn and alfalfa for the wintering of their stock.

All of the ranches are fenced. They are in holdings of 800 to 2,000 acres. This keeps the cattle, of course, within easy reach at all times during the summer season and does away with the need for hardships encountered in other sections of rounding up the cattle in the fall. It is especially a valuable section for the raising of registered cattle.

Good water is found everywhere. Practically all of the ranches are supplied with springs for their domestic use and also for the stock water. The big thing that impressed one in visiting this particular section is that there are no farms or stock ranches being developed as a hobby. They are all practical stock ranches and the men engaged in the business are practical stockmen. Their buildings are good substantial ones as well as the other equipment on the farms. However, there is nothing especially showy about any of them. One of the stockmen made the remark during the day that there are fewer mortgaged farms in Elbert county than in any other county in the state.

The tour started from Kiowa at 9:30 o'clock in the morning. There were some forty cars in line, most of which were Elbert county people with a few from El Paso, Boulder and Denver counties. About 200 people made the trip.

The first stop was made at the farm of Gleason & Blazer. This is a very attractive farm, a short distance out of Kiowa. It is the home of Sunnyside Robert, the bull that won second in the senior yearling Shorthorn class at the last National Western show. He is an excellent individual with an unusually strong constitution and good covering. In fact, he was one of the best bulls shown in Denver last winter. On account of being out of condition the day he was shown he was given second place. He was a very strong rival for the bull Golden Type owned by C. A. Saunders of Manila, Iowa. Sunnyside Robert was sired by Count Augustus and his dam was Roberta Grey. The calves sired by this bull are excellent in conformation. The strong constitution shown in the bull is reflected in the calves.

Mr. Gleason informed us that this bull will be shown in Denver again next winter. There are about 100 head of cattle on the ranch. A very good cornfield promises a supply of ensilage for next winter's feeding.

From this ranch the party journeyed to Al Carnahan & Sons. This farm is just a short distance from the Gleason & Blazer property. Mr. Carnahan has an ideal stock ranch with modern equipment of a practical sort. He is unusually fortunate in having a large family of boys, who are all interested with him in the stock raising game. Mr. Carnahan is of the type that has made the West prominent as a stock growing section. It is not a hobby with him, but a business. He has been very successful in winning at both Denver and Chicago on carlot classes of feeder cattle. In my opinion the man who can raise a carload of good practical steers and win with them at our leading shows is the kind of a man that needs to be encouraged in his endeavor. This really is the practical end of stock raising in the west.

Mr. Carnahan's herd bull is Supurbus Cumberland. This bull was bred by Mr. Saunders of Manila, Iowa.

Ranch of Charles A. Melburn, Elbert, Colo.

The next stop was made at the farm of Jones Bros., where we had a chance to look over about 150 head of excellent stock. This ranch consists of 2,200 acres and is well balanced in every way. Two herd sires are in use on this farm. One is Baron Hedgewood and the other is Brampton Pride, and both are of excellent conformation and are doing this farm a great deal of good in the class of calves descending from them.

From the Jones ranch the party journeyed on to the ranch of Helgeth Bros. These gentlemen are comparatively new in the Shorthorn breeding game, but have been engaged in and have developed Shorthorns for a number of years for other parties. They have twelve head of registered cattle on their farm and a large herd of grades. Their herd sire, Gay Monarch, was bred by Sam Ball of Wray, Colo. A young bull from the same herd is also being developed at this ranch.

It was announced that the next stop would be at the Cornforth Livestock Company. The announcement was unusually interesting because of the fact that dinner would be served in the Cornforth grove. Upon arrival here we had the opportunity to see an excellent herd of cattle headed by Cedar Lawn's Best. This bull was sired by Golden Sunshine. Mr. Cornforth has over 1,400 acres of deeded land and more than 300 acres leased, making a total of about 1,800 acres of excellent grass land. He is president of the Western Shorthorn Breeders' association. His pasture, like most of the other pastures in this section, is well dotted with pine trees, which afford excellent shade for the livestock, and was especially inviting for the picnic dinner that followed the inspection of the Cornforth herd. All of the stockmen came with well filled baskets of all the good things that are possible only on a farmer's or stockmen's picnic. With it was an abundance of good rich ice cream, coffee and cigars.

Following the picnic dinner the party assembled in a natural amphitheater to listen to talks given by members of the association and outside visitors. Mr. Carnahan acted as chairman and introduced the speakers in typical cowman fashion. The first man called upon was Mr. T. O. Sandstrom, secretary of the Denver Livestock Exchange, who spoke briefly regarding the attitude of the stockyards people toward the breeders of the state. He was followed by Mr. D. W. Thomas, secretary of the Agricultural Bureau of Denver Civic and Commercial Association, who spoke briefly of the appreciation felt by the Denver people, who attended the picnic and tour. Willis N. Fulton, manager of the Denver Record Stockman, was then called upon and he made a few remarks concerning advertising of the livestock business, and its importance in the development of the industry. We then enjoyed a talk from R. W. Clark, Extension Animal Husbandman of the Colorado Agricultural College. He commended the stockmen of Elbert county on their ability as good feeders, which was not confined entirely to livestock. He called attention to the importance of guarding against tuberculosis among the cattle as well as contagious abortion, and urged the stockmen to keep their herds clean from these diseases. He also spoke of the need for support of Colorado's stallion law.

James Gauld, president of the El Paso County Farm Bureau, then gave a short talk regarding the fair that will be put on in El Paso county this fall. C. H. Hinman of the Hinman Silo Company, was then called upon and gave considerable information concerning the Milking Shorthorn cattle and their relationship to beef production.

Mr. L. E. Crews of Longmont and Mr. D. A. Jay of Boulder gave very good talks boosting the Shorthorn business in Colorado. These two gentlemen are comparatively new in the state, but come to us with a world of experience in developing Shorthorns in Nebraska and Iowa. County Agent Aicher gave a talk on the calf club work that is being undertaken in Elbert county. Some sixteen or eighteen youngsters own calves in this club, the story of which has been given recently in the columns of Western Farm Life. This is an excellent work and the commendable thing about the proposition is that the breeders themselves are supporting the club members in every possible way. From all reports this club is probably the strongest of its kind in the state. The boys and girls participating have an opportunity of getting some excellent animals for their work. They have purchased them outright and it is said that practically all will breed the heifers that they own and develop more animals the next year. A calf show is being planned at the time of the race meet, which will be held in Kiowa some time during the early fall. There has been nearly $300 subscribed, which will be given as premiums to the members of the club at that time.

This concluded the program and the party again started on the tour of the herds of the county. The first stop after dinner was at the ranch of Charles A. Melburn, president of the Elbert County Shorthorn Association, and like the rest of the breeders he has an ideal place in which to carry on his stock breeding work. His herd is headed by Typical Thought, who was by Second Thought. Mr. Melburn owns a very fine calf sired by Typical Thought and whose name is Rare Thought. This young bull was a strong contender for several honors at the recent National Western show. He also has some excellent cows on his place.

From this farm the party next went to the farm of George Gleffe. Mr. Gleffe has 800 acres of typical Elbert county land and 68 head of cattle. His herd is headed by Colynie Dale, who was by Master Dale, by Avondale. After a brief stop at this farm the party journeyed on to the farm of Frank Evans, over the line in El Paso county. Mr. Evans' herd is headed by a Model Type bull bred by Warnock & Sons of Loveland. The last stop on the trip was made at the farm of Peterson Bros. Their herd is headed by a Second Thought bull. This ended the tour which was pronounced a most successful one by all those who attended.

All of the farms visited have excellent barns for housing their stock and practically all have silos to assist them in their winter feeding. The tour did much to entertain, as well as instruct, all those from the county and the outside. Any stockman who wants to see a real country and enjoy a real time should never pass up the opportunity of attending a Shorthorn tour in Elbert county.—H. A. L.

Sunnyside Robert, herd sire on the Gleason & Blazer Shorthorn farm.

A Safe Dry Land Program.

Mr. Roy Marple, secretary of the Cope (Colo.) National Farm Loan Association, is a livestock farmer in the right sense of the term. He bases his operations on dairy cows and hogs and uses wheat or other grain as his cash crops. His first consideration is to provide ample feed to keep cream money coming and maintain pork production to the full capacity of the ranch. His foundation stock in hogs is of the Chester White breed. He has several registered sows from the noted Wildwood line, including Miss Wildwood by Prince Wildwood by Wildwood Prince, who was the reserve champion boar at the National Swine Show in Omaha in 1917. There are also two younger brood sows, Wildwood Miss and Ivo, out of the same strain. Mr. Marple has had Chester White's for a number of years and has had ample opportunity to find out whether the white hog is subject to sunscald where little shade is available. He has never had a single case of this trouble and considers the Chester Whites as suitable in that respect for plains conditions as any other breed of hogs. Their particular advantage he says is that the sows are splendid mothers and very prolific.

Lately he was running his hogs on wheat pasture. Last season he hogged down thirty acres of corn after shucking out the high ears. He kept the hogs in this cornfield through the winter and dry-lotted them in spring, finally selling 10,195 pounds of live pork off the place.

He believes in making his money from pasture during the summer months, running a small herd of twelve to fifteen head of grade milk stock. He reserves 200 acres in prairie pasture and cuts hay from a part of this which lies in a depression that sometimes fills up in case of heavy rains.

His theory about plowing is to do it well perpendicularly—that is to go down, but not to spread out his fields too far over the prairie. The great fault in the dry land section is an attempt to cultivate too large an acreage. The result is scant yields of grain, a sacrifice of good grass that should be kept in permanent pasture and failures in dry years. The man who sticks to the idea of making his money from cream off the summer pasture, growing ample feed crops for winter use, and wheat, rye or barley as the surplus cash crop, need never fear a failure. This is the system Mr. Marple is following with success.

Fixing Potato Prices.

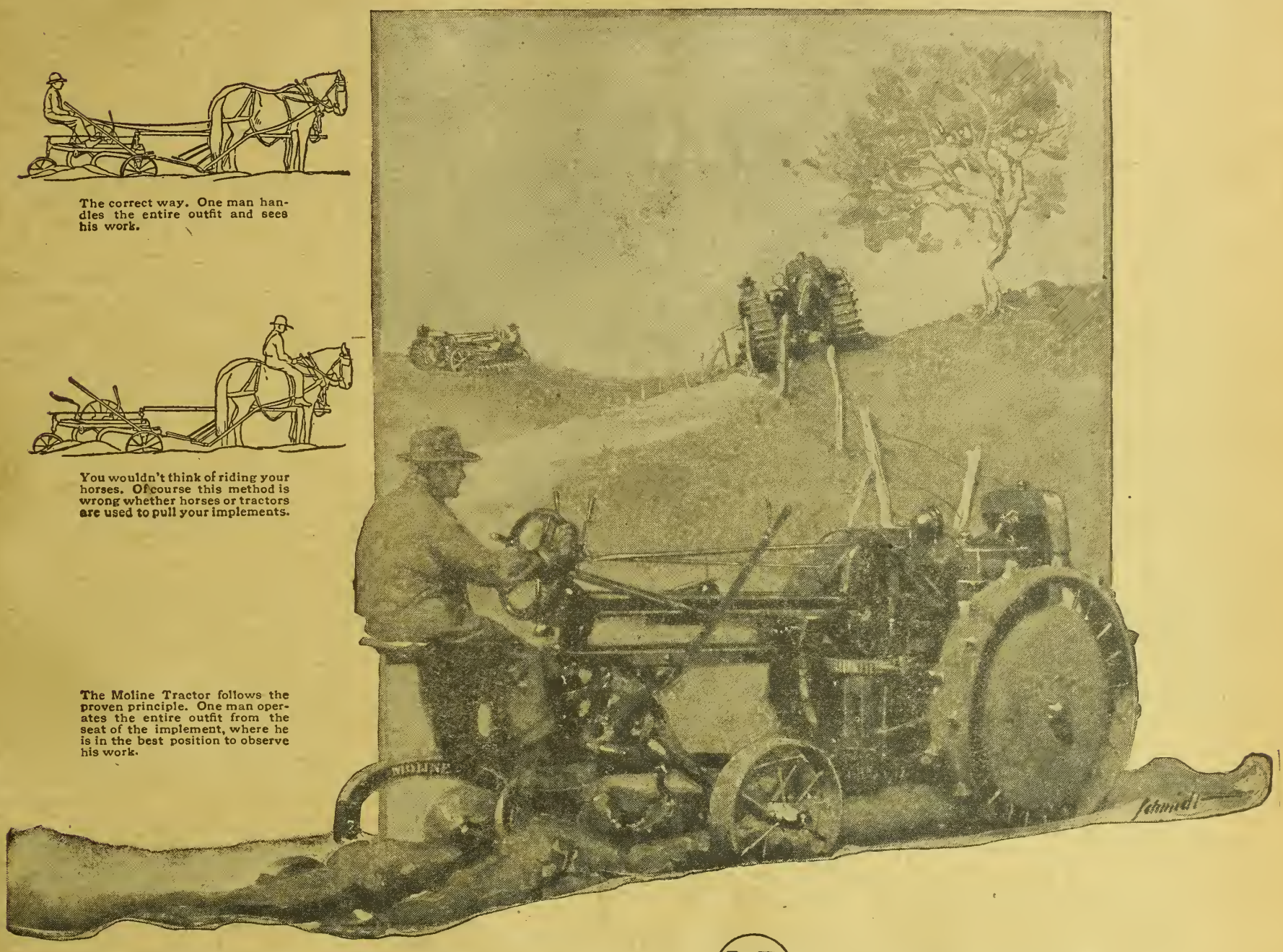
On and after June 1 the top legal or maximum price for potatoes in English markets will be £14 per long ton for stock grading 1½ inches or larger, according to a recent consular report. This price is equivalent to $2.38 per 100 pounds. The maximum fixed price has been advanced about one-sixth since March 15. Wholesalers will be permitted to average their profits over each fortnightly period, but their profits on sales to other wholesalers must not exceed the equivalent of $1.83 and their profits on sales to retailers or consumers must not exceed the equivalent of $3.65 per ton.

MOLINE

The Universal Tractor

The correct way. One man handles the entire outfit and sees his work.

You wouldn't think of riding your horses. Of course this method is wrong whether horses or tractors are used to pull your implements.



The Moline Tractor follows the proven principle. One man operates the entire outfit from the seat of the implement, where he is in the best position to observe his work.

In a 10-hour day one man and a Moline Tractor can plow from 7 to 9 acres; disc from 25 to 35 acres; seed from 25 to 35 acres; mow from 25 to 40 acres; cultivate from 12 to 20 acres; and harvest from 25 to 40 acres. In addition the machine will do a great variety of other work and all ordinary belt jobs.

Compare these results with those of ordinary methods. In many cases the Moline enables one man to do at least twice as much work. These facts are borne out by the results obtained by Moline owners.

Moline owners in 37 states say that the Moline Tractor saves an average of one man per farm, as well as five horses, because it does all field work, including cultivating.

The Moline Tractor increases production by enabling one man to do more work, and decreases the cost of production by saving help and horses.

Profits of from $500 to $2200 a year, from the Moline Tractor alone, are being reported by Moline owners from all sections of the country.

MOLINE PLOW COMPANY, MOLINE, ILLINOIS

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Our Secretary of Agriculture.

A real treat was afforded the business men of Denver recently when Mr. E. T. Meredith, Secretary of Agriculture, addressed them at a luncheon at the Hotel Metropole. The gathering of men and women included not only representatives of the business interests, but also the agricultural interests of the state. Secretary Meredith knows agricultural conditions in America as few men know them. As publisher of Successful Farming he has acquired an intimate touch with everything agricultural which fits him well for his work as head of the great Department of Agriculture. Few men in public office are as democratic in their contact with the public, or as conscientious in the performance of their duties as is Mr. Meredith. He takes his work seriously. I wish it were possible for every farmer to hear him and meet him. He has a message that carries great weight and he shows us how the department is applying itself to the practical needs of the people. He has the practical, commonsense viewpoint.

He dwelt on the work of the Department in carrying information to the producers that can be used to advantage in improving farming methods and enhancing returns. He told of the way in which the Department serves all of the people in every walk of life; how everything we eat and wear at some time on its way from the farm to the consumer comes in contact with Department workers. For example, the food we eat from packages has been inspected by the purefood bureau. The meat slaughtered and sold through the regular channels of trade is carefully examined by United States veterinarians for diseases that otherwise might be transmitted to humans. In Denver it was brought forcibly to our attention not long since when 95 animals out of a shipment of 140 head were held up because they showed evidences of disease which made the meat unfit for human consumption.

Probably the greatest work done by the Department is in assisting farmers directly with their production and marketing problems. He brought out that we are often ready to condemn the Department as a whole because of misplaced energy in one direction and he pleaded for an attitude of fairness in criticism.

It was pointed out by the Secretary that many of our congressmen do not appreciate the importance of agriculture to the nation nor the necessity for the work of the Department. He called attention to the reductions made in appropriations which, in some cases meant the discontinuance of important work now under way, such as experimental stations for testing crops or finding out about plant diseases, hog cholera control, dairy development and the like.

It is of vital importance that this matter be taken in hand and corrected. In all fairness it must be said that many members of Congress are familiar with these matters, but we as farmers have not shown a proper spirit of co-operation. It is time that an effort be made to acquaint them with the importance of our problems in such a way that they will know how best to act. It would seem advisable to hold an agricultural conference under the auspices of the Farm Bureau in every representative district of a state, in which the congressman from that district should take part. At this conference the main issues should be taken up and discussed to familiarize the congressman with the needs of his district.

This should be done in a broadminded way. It would largely prevent the recurrence of some of the mistakes in Congress in passing bills that are detrimental to our most vital industry.

Secretary Meredith is bringing the Agricultural Department before the people and showing what it has done, is doing, and what it can do to help the farmer and thereby the entire population.

The Secretary mentioned the fact that of the twenty million acres of irrigated land in our nation, three and one-half million is within the state of Colorado. We should therefore be much interested in the work of the Office of Western Irrigation Agriculture, which has been badly hampered by the cut in appropriations. This Office has been working on such projects as duty of water and best practices to follow in handling of water in irrigation. Further development along this line is being retarded because congressmen were not informed as to the importance of the work. As Secretary Meredith remarked, this ignorance on their part is not altogether their fault, but it is the fault of the people in not keeping them informed as to our agricultural needs.

One of the things that makes it difficult for the Department to progress is the meager salaries that are being paid. They have lost several thousand men of high caliber in the past year because of higher offers elsewhere. The appropriations are so low that it is impossible for the Department to pay more.

In Mr. Meredith we have a Secretary who knows more about the agricultural needs of the country than any other man who has ever held that office. His views are broad and with him in that office for at least another term agricultural development would go forward with rapid strides. My personal view is that he should be retained in that capacity, no matter what change may come in our national administration.—H. A. L.

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Educating the Business Man.

Denver business men are finding out things about the state's greatest resource, agriculture, in a series of one-day tours to the breeding farms in the vicinity of the capital. It has been generally accepted as a fact that farming and livestock production are big assets of Colorado's prosperity, but those who have neglected to see things for themselves in the last five years, are amazed at the progress shown in the counties adjacent to Denver, which but reflects that of the entire state.

An industrial survey is now in progress, backed by the Denver Civic and Commercial Association, the aim being to develop these industries that draw their supply of raw product from tributary territory. It is time we were breaking over the old tradition that manufacturing must be carried on in the populous districts of the middle and eastern states, near the lakes or rivers. The meat packing industry has demonstrated the fact that it is economcial to finish the product nearest the point of production of raw material. That industry established in Denver has given livestock production a great impetus. There are other agricultural products and by-products that afford a field for manufacturing investment. The survey undoubtedly will disclose many such opportunities and emphasize again that agriculture is Colorado's greatest single asset. There is much to be done yet in metal mining; tremendous resources of oil shale and coal await the touch of capital, but our one practically inexhaustible resource is the soil. Every time that fact is impressed upon the man in business it results in readjusting his views. Figuratively, it keeps his feet on the ground; he will be less apt to run after wild promotion schemes if he knows something about all of our resources, including our biggest. These educational tours are a good thing; keep them up; the business man needs to be educated on the subject of agriculture and its importance to the state.

Wheat Gambling Resumed.

Trading in wheat has been resumed on the various exchanges, after nearly three years of government control. At first the trading in futures is to be restricted to December and March deliveries, with the prospect of gradually throwing open speculative transactions to the same basis that prevailed before the war. One often hears complaints concerning government restriction of wheat trading, to the effect that if no price had been fixed on this commodity the farmers would have received more for their wheat. As it was they quite generally lost money. While the immediate effect of the lifting of the ban may be favorable to the price of wheat on the farm, in the long run it means a return to unrestricted speculation with the wheat gambler as the winner or loser and the farmer's cost of production cutting no figure.

Speculation in food stuffs, gambling on market fluctuations of any commodity that people need for sustenance, is fundamentally wrong and dishonest. As long as this nation tolerates the scandal of a horde of middlemen manipulating the markets the public must foot the bill. The speculator's profit comes out of the pockets of the wheat grower and the bread eater. It is no more necessary to make wheat, or other grains and provisions, the football of the board of trade gamblers than it is to stage a daily game of poker on the prospects of the next day's weather. It is not the ethics, but the economics of the practice that cries to heaven for adjustment and congress needs to give it attention. Speculation is one cause for the discontent of the producer who will have a legitimate complaint so long as somebody who hasn't turned a hand either toward production or distribution takes an unearned profit from a bushel of wheat. Isn't it about time for us to face this question squarely and restrict our boards of trade to cash transactions?

✦ ✦ ✦

Livestock to South America.

Splendid service is being given the breed associations by the United States Bureau of Markets in the development of the South American market for purebred livestock from our breeding farms. Two livestock commissioners visited South America in 1919 and after a careful investigation of conditions, made a report on the situation and the marketing possibilities in Brazil, Uruguay, Paraguay and Argentina. Sales by North American breeders in the southern countries in the last six months amount to about $400,000, and these have been made very largely through contacts established by the commissioners of the Bureau of Markets.

Recently two other commissioners were appointed to follow up the work started last year, the new appointees being Mr. L. B. Burk and Mr. E. Z. Russell, who recently sailed for South America on this mission. The bureau is considering the establishment of a permanent South American office with a commissioner in charge, whose business it will be to develop trade opportunities and follow up the pioneering work already done. A handsome illustrated booklet has been prepared by the Bureau of Markets and printed in Spanish and Portuguese for circulation among prospective purchasers of purebred livestock in South America. This volume presents statistical information about all breeds, including cattle, hogs, horses, sheep and poultry, and points out that official assistance is given to visitors in locating registered stock, explains the character of the American livestock expositions, gives export information, describes methods by which American herds have been freed from contagious diseases, and furnishes such other details as any buyer would like. It is pointed out that "For many years breeders in the United States have been importing the finest animals from other countries, and by the most rigid selection, in keen competition with other breeders, have developed purebred livestock until now this industry is not surpassed by the livestock industry of any other country in the world." This argument is backed by facts concerning the winnings of our animals over those from foreign lands in the leading livestock shows.

This project deserves the highest commendation from breeders all over the United States. It is a service that will bring rich rewards. It means that the government is backing our livestock breeders and gives them official standing that commands attention in the South American markets.

Colorado breeders have been fortunate in being numbered among those chosen to furnish animals for southern export trade, and we may look for further orders. We have the blood lines, the quality, the health and stamina so desirable by South American buyers, and our western breeders should take full advantage of the opportunity offered by the Department of Agriculture to share in the business that is being developed.

The Branding Iron

Present indications are that electors will have plenty of presidential candidates to choose from in November. Some people care more about voting their sentiments than they do about backing some person for the office, and that's what makes the political game interesting.

* * *

Hoard's Dairyman suggests instead of "boarder cows" for those that do not pay their way, we make use of the term "visitors." "A boarder pays his way," rightly says Hoard's. A guest enjoys free hospitality. Call them what you will, but get rid of them.

* * *

To guard the mind against the temptation of thinking that there are no good people in the world, be such as you would like to see others, and you will then find those who resemble you.—Bossuet.

* * *

Brown: "It seems to me that $25 is a pretty high fee for lodging a complaint."

His Attorney: "Looks high, yes, but you must remember that lodging costs double what it used to."

* * *

"My sermon on thrift made a tremendous impression on the congregation."

"How do you know?"

"I could tell when I counted the collection."—The Home Sector.

* * *

A recent Wyoming dispatch told of a rancher whose left hand was badly lacerated by the kick of a jackrabbit which he was trying to hold by the hind legs. Almost at the same time a veracious citizen of Baca county gave the Sparks editor full details of a remarkable encounter in which two greyhounds were attacked and routed by a pack of ferocious jackrabbits. The advent of prohibition and foothill moonshine seems to have worked a metamorphosis in the character and disposition of the meek and lowly jack.—Lamar Sparks.

* * *

A Union Pacific express messenger running out of Denver had a new experience recently. He received a crated sow consigned to a breeder at Greeley, which had been transferred from some other road at Denver. Soon after leaving the latter point the sow gave birth to six squealing piggies. The express messenger was puzzled as to the proper course to pursue in marking up the waybill but finally, after looking over the various notations printed thereon, he checked the statement: "Received in bad order; contents leaking."

Yellow Corn More Nutritious.

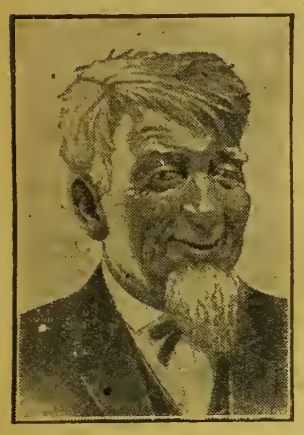
Many careful and observant stock feeders have long contended that yellow corn produces better results than white corn. This was denied by others. While the controversy existed in agricultural and stock feeding circles chemists passed it up with the statement that the two varieties had the same feeding values. The statement was based on the fact that the methods used by chemists to determine the feeding value of feeds showed no difference in the two varieties.

Recent studies in nutrition carried on at different state experiment stations have brought to light the facts that in addition to the substances which have long been recognized as essential, and on which the chemists have based their valuation of foods and feeds, there are other substances which are only required in very small quantities, but which are absolutely indispensable in a ration if normal growth is to be attained. The experiments conducted by the Wisconsin and Nebraska stations indicate that in white corn a growth promoting substance is lacking while yellow corn contains a sufficient amount of it to permit normal growth. —Agricultural Review.

Let Western Farm Life Service Bureau help solve your farming problems. All questions promptly answered.

Comment by Farmer Putnam

MISSOURIAN VISITS WITH THE GOOD PEOPLE OF ROUTT COUNTY AND HAS A FINE TIME.



WELL of all the good times I ever had I sure had 'em at the farmer's picnic give by the Union and the Farm Burro of Routt county at Steamboat Springs. Fust I want to tell you-all how I got over thar. I went by the Moffat road and it was almost on time; cause unknown. I ain't a-goin' to poke no fun at the Moffat road. It has to suffer enough from natural conditions and is gittin' weak and decrepit in spots and I hate to make fun of somethin' we had ought to feel sorry fur. You see the road is in receiver's hands. A receiver is somebody that takes things in, and never pays out anything. That's why they call Mr. Freeman the receiver. He receives the ticket money and what comes in from freight and only pays out just what he has to and no more. A receiver ain't no giver.

While travelin' over and back I had lots of time to look at the scenery and to think about things and to eat in one of them kafe cars. I felt kind of stylish ridin' in a parlor seat and eatin' with the rich tourists with a darkey to wait on me. It was while I was eatin' that I had a big idee which I think would help pull the Moffat road outen the hole. Here was my dinner: Roast beef, 70 cents; green peas (a la canned), 20 cents; fried potatoes, 20 cents; head lettuce, 35 cents; raspberries and cream, 35 cents; bread and butter, 10 cents. Total, $1.90. Gosh, if Josephine had a been along we would a done like some parties that set at my table. They brought a package of rolls with 'em and they just ordered butter, raspberries and tea. The darkey that brought their order looked kind-a disgusted and said: "Anything else, ladies?"

One of 'em said: "Yes, please bring us another shell of butter."

Well, Josephine bein' still back with her folks in Missouri I was travelin' alone and so I never looked at the prices, but just ordered what I wanted and when it was all gone I got my bright idee which I'm passin' on free of charge to the receiver of the road.

They was just about 1 potato in the dish I got fur 20 cents. A farmer raises about five good spuds to the hill on the average, which makes, at Moffat diner prices, $1 a hill. They is about 10,000 hills to the acre which makes it $10,000 per acre cooked and served!

I counted the peas in my dish, just forty peas, which was 20 cents, or half a cent each. They is eight peas in a pod anyway, and maybe 20 pods to the vine, which is 160 peas or four dishes, which makes 80 cents per vine. Raspberries figgered out about 1 cent each, countin' out the cream at 5 cents. Bread was even more so. I reckon a feller could start a bakery on a bushel of wheat if he sold bread a nickel a slice. Butter was free.

Beef I got was about three ounces which makes about $3.70 a pound, or $370 a hundred. It was poor beef, not prime. I reckon a feller could pick up plenty of the same kind in stockers and feeders around $8@$9 per cwt.—say, if he had to pay $10, allow hisself $10 on top of that fur killin' and dressin' and still make quite a bit by sellin' the roast cuts at $370 a hundred pounds. It was about the same with the other stuff, such as head lettuce fur 35 cents, a head bein' divided into about four or five portions to a serving. Countin' out the dressin' it would make about $1.25 per head of lettuce. Two or three rows in the garden would give a neat profit.

What I was thinkin' about was fur the receiver of the Moffat road to start a little farm; it wouldn't take more'n eight or ten acres to raise their own stuff to feed on the kafe car, which would bring in a profit. Sellin' beef at over $300 a cwt., peas at half a cent a peas, etc., would soon raise enough money to build the James peak tunnel and no bonds would have to be floated fur it. I ain't a-chargin' nuthin' fur this here suggestion, neither.

We got to Steamboat Springs only forty minutes late, which was considered on time, because when the road gets thar at all they consider it on time. It's the only road that's on time at any time, and when it ain't on time it ain't thar at all.

Them folks over in Routt county sez fur me to just keep a hammerin' away at the tunnel; not that they are worryin' about us poor folks over on the east slope, but they do want us to have the benefit of good transportation so's we kin git over in God's country and back ag'in the same winter. They're satisfied over thar; they raise plenty to keep theirselves and they're happy, but they air big hearted folks and want to share their good things with the outside world; that's why they want the James peak tunnel and them other two tunnels.

I was give to understand that I needn't come back if I don't let my whiskers grow ag'in. George Merrill, County Assessor Smith and Pest Inspector Butler was on the committee to meet me and escort me to the picnic pasture, where we fed and watered. They shook their heads when they saw me and said: "Putnam, we don't doubt that it's you, but some of our folks is lookin' fur a six-footer, with a broad grin and a broader back and a whisk broom on his chin; you got to say somethin' to explain how you lost them whiskers."

I asked 'em if any of 'em ever was out in Arapahoe county durin' one of them spring zeephers? If they was they would know why a feller don't want no obstickle on his chin, or why none would stick on in sech a blow as we had April 18th.

Well the folks soon got over me lookin' so young, because when I took my hat off they could see them gray streaks, but I let 'em know that they was nuthin' else gray about me. I believe in stayin' younger then you air, whether you're ladies or gents. They made me give 'em a speech about "Cooperation" and I done mighty well considerin' that I only spoke on that subject six times before; I didn't furgit over half of what I was goin' to say.

The whole meetin' was on copperation. Fust the farmers brought in grub on the copperative plan and it was all piled out on tables no matter who cooked it. Then we all lined up copperatively and walked past the copperative table and took the copperative chicken by the leg, wing or neck, and the copperative sandwich and the copperative cake or pie and drunk copperative coffee or lemonade outen copperative cups.

Then we had the speech makin' startin' off with a prayer by Rev. Clement Upham of the Congregational church. Next Sam Walker was called on to say a few words about the Steamboat Springs Chautauqua and he announced that Farmer Putnam, who was to foller, was a better speaker and a better looker then he was. I thanked him fur the compliment but I don't think he said a great deal neither, fur I seen handsomer men right thar in Routt county than Sam Walker. There was Judge Morning fur instance; he is a good lookin' jurist. He looks like a state senator or somethin'. The Judge give the address of welcome in behalf of the municipality of Steamboat Springs, the mayor bein' a doctor and too busy to talk. Judge Morning is never too busy to talk. He was raised in Missouri and him and General Jack Pershing went to school together at Laclede. He sez Pershing was the kind of a young chap that never done nuthin' by halves. He seems to have kept it up in after life.

County Agent J. C. Hale responded to the address of welcome in a few words; he is a young feller of few words and lots of deeds, and the farmers all likes him. The next speaker was me. Land, I was glad Josephine wasn't thar; she might-a recognized some of the things I told them farmers. That woman kin git me all flustered when she is in the audience. I reckon it's because I cain't fool her. But them folks in Routt county that never seen me before they kind'a took what I said in earnest, like it was comin' from the heart and they applauded once or twice and nodded their heads and some of the Methodists in the crowd whispered "amen." After I talked quite a while one of them Methodists whispered it loud enough so that I thought it was time to quit and I done so. (Printer, please insert GREAT APPLAUSE.)

Well the next speaker was E. H. Swisher, a salesman and buyer fur the Colorado Farmers' Union Exchange Company. He told them farmers about practical copperation, the kind the Union has been doin' fur many years. They have a elevator at Steamboat which is doin' a big business and could do more and they're thinkin' of puttin' in a flour mill.

After the picnic was over Mr. Merrill and Mr. Hale got me a dish of ice cream. They said they wanted to show appreciation of my effort and they seen it was a real effort, and they thought it ought to be suitably rewarded. Then they turned me over to W. B. Hartley and he brought in his brand new Reo. (The Reo is one of the finest cars on the market. Adv. free fur Hartley.)

Mr. Merrill, Mr. Swisher and B. H. Fairbrother, manager of the Routt county fair, got in with us and we took a spin up over the Rabbit Ear road. Spin is the right name fur it. You go round and round curves, like a corkscrew, only a great big one; big enough fur the man in the moon to open a bottle of real moonshine with, till at last you're up to the top of a long hill. Now you folks back in Missouri when you read this—I mean Matt and Aunt Millie and the rest of our home folks—

(Turn to Page 11.)

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There's real comfort in Blue Buckles' generous roominess, in the play and freedom of their raglan shoulders, in the snug fitting elastic suspenders. Blue Buckle materials and expert Union workmanship wear beyond anything you ever bought in a work-rig.

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TRADE MARK
UNION MADE

Placing girder in hull of American merchantman in an Eastern shipyard

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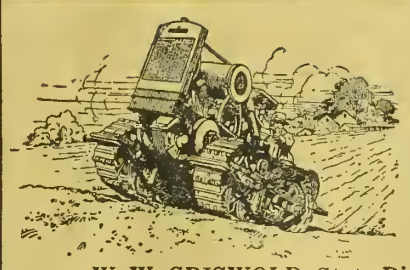

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Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and through the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Crops Are Personal Property.

When A. has had to foreclose on B. on a farm for which B. failed to make payments or pay the interest on same, the foreclosure comes due on the 14th of July, has B. any right to harvest the wheat crop that is on it after the 14th of July, or has B. any right to be on said land after that date? Can any of B.'s creditors go on this land and harvest this crop? B. sold part of the buildings and moved the balance on his own place, now what can be done in regard to this and how can A. go about it?—R. E., Kiowa County, Colo.

Assuming that you mean that the foreclosure becomes due July 14 to mean that judgment will be entered at that time, B. has nine months' period of redemption, during which time he may occupy the land. Growing crops are personalty and belong to the one who planted them. Your action would be for damage against B.—Hamlet J. Barry, 714 Equitable Building, Denver.

As to Mineral Rights.

Would you advise me in regards to the finding of mineral on patented homestead? I have 320 acres of patented land. Have had my patent about one year and now a couple of prospectors claim to have found gold on my land and want a bond and lease on two claims for a period of two years with a royalty of 10 per cent, and with the agreement that if sold within the two years I am to receive $10,000. Now, have I a right to do this? Or would it endanger my title to my home. I didn't know there was mineral here and wouldn't know gold bearing rock from any other rock, and am completely ignorant on mining laws, so will you tell me if it is lawful for me to do this and if that would be the proper thing to do? I wouldn't want to work this myself as I am farming and have all that I can do, and know nothing about mining.—W. I. S., New Mexico.

The land is yours to do with as you please. If there is mineral on it, it is your mineral. If you had entered your homestead knowing of the mineral and concealed that from the government in order to get the mineral, your position would be bad. But as you state it, it is perfectly proper and right for you to make any disposition of the property that you see fit.—Hamlet J. Barry, 724 Equitable Building, Denver, Colo.

Apply to State Engineer.

What are the necessary steps to make a filing on flood waters down a draw after heavy rains, with a view to damming them and using for a small, private irrigation project? If maps, diagrams, or estimates of amount of water are required, please state what must be shown and to what degree of accuracy; also if there is any specified size, kind of paper or other form in which maps are to be prepared. What fees are payable? Two dams are contemplated, one in a branch draw above the other. Could both be included in one filing? Dam would be built on my own land, water used on my land, and most of it has its source upon my land. A pump would be used to raise water from reservoir to a higher level. But the plan might include irrigation of land belonging to other parties by gravity flow.—H. S. Morgan County, Colo.

All of the matters concerning which you ask are under the control of the State Engineer, and I would suggest that you write to him, making the same inquiries. Address Mr. A. J. McCune, Capitol Building, Denver, Colo. You should also state in your letter as to whether your proposed dam is more or less than 10 feet in height.—A. Lincoln Fellows, Senior Irrigation Engineer, Custom House, Denver.

Wild Sunflowers for Silage.

Do wild sunflowers have approximately the same food value in silage as the Russian sunflower? I have about 20 acres that are making a fine thrifty growth and without them will be short of rough feed. Also have they any value as hay and in what stage should they be cut for silage and for hay respectively. —J. W., Huerfano County, Colo.

Wild sunflowers are not as valuable as the Russian sunflowers on account of their not having the heavy production of seeds. I have seen them tried, that is in a field where there was about one-half corn and one-half sunflowers. The silage resulting from this crop was of strong flavor and the cows did not relish it. A report from New Mexico, however, states that where the crop was used for silage it made a very satisfactory feed. It has a strong odor and flavor, which does not leave it when it is ensiled. They are not considered a successful hay crop and if you are to use them at all I would rather trust to ensiling them than to using them for hay. In case you put them in a silo would suggest that they be cut just at the time when they are in full blossom, before any of the leaves or stalks become dry and hard.—H. A. L.

Heifer Holds Back Milk.

I have a heifer that has been fresh about six weeks. It is her first calf. She is holding up her milk now off and on for three weeks, sometimes in the morning and sometimes at night. Can you tell me why she does it and what can be done to break her? Is she liable to do the same thing with her next calf?—B. R., Wyoming.

It is rather difficult to give any definite information on this subject. However, there are a few suggestions which might be made that will be of help to you. I would suggest that you try giving the heifer a little grain at the time of milking. This very often solves the difficulty. If you begin this practice you will probably have to keep it up. Another plan that has proven successful is to put the calf where she can see it while you are milking the heifer. Cows are very susceptible to this sort of thing and unless they are very carefully handled are apt to develop that trait. Some milkers will get as much as 20 to 50 per cent more from a cow than others. Gentle handling and careful milking are two things which must be borne in mind with an animal of that kind. Any little excitement such as seeing a dog or a stranger in the barn at milking time will often cause an excitable heifer to hold her milk. I would suggest that you try either of the plans mentioned together with careful handling and see if she does not improve. If she does not improve at this lactation period and unless she is an exceptionally good milker, it would probably be advisable to dispose of her as she might continue it to the next time.—H. A. L.

Cutting Rye for Hay.

What is the proper time to cut rye for hay? I have cut it before for hay but waited too long and it was too bitter and the stock would not eat it.—W. H. R., Wyoming.

In order to get the best results from any of the cereal grains, especially of the bearded varieties, close attention should be paid to the stage of the grain. It is recommended that all of these grains be cut when they are in the milk stage. At this time the awns of the bearded grains are still soft. When they become hard cattle will not relish the hay made from the plant and for that reason will not utilize it to the best advantage. In determining the time to cut, watch both the beards and the grain.—H. A. L.

Three Questions Answered.

1. Would there be any excessive danger in castrating a yearling buck sheep at this time of the year or in hot weather, say in the next month?
2. What is the best way to get rid of gophers that bother fruit trees?
3. Would you recommend winter vetch on the dry land in the fall for pasture? —R. H. B., Montezuma County, Colo.

1. Docking and castrating a yearling ram at this time of the year is a little risky. However, if done carefully it is possible without bad results. The tail may be cut off and the wound seared with a hot iron to retard bleeding. The castration wound should be treated with a fly repellant such as coal tar, after being seared with hot iron.

2. Extermination of the gophers would be best. A very good way to poison them is to use small cubes of a root crop such as carrots, sugar beets or potatoes. Make a slit in each cube and insert a crystal of stychnine, put this bait in the runway. In order to determine the results level mounds of dirt with a rake, and if no new workings are detected the poison has done its work.

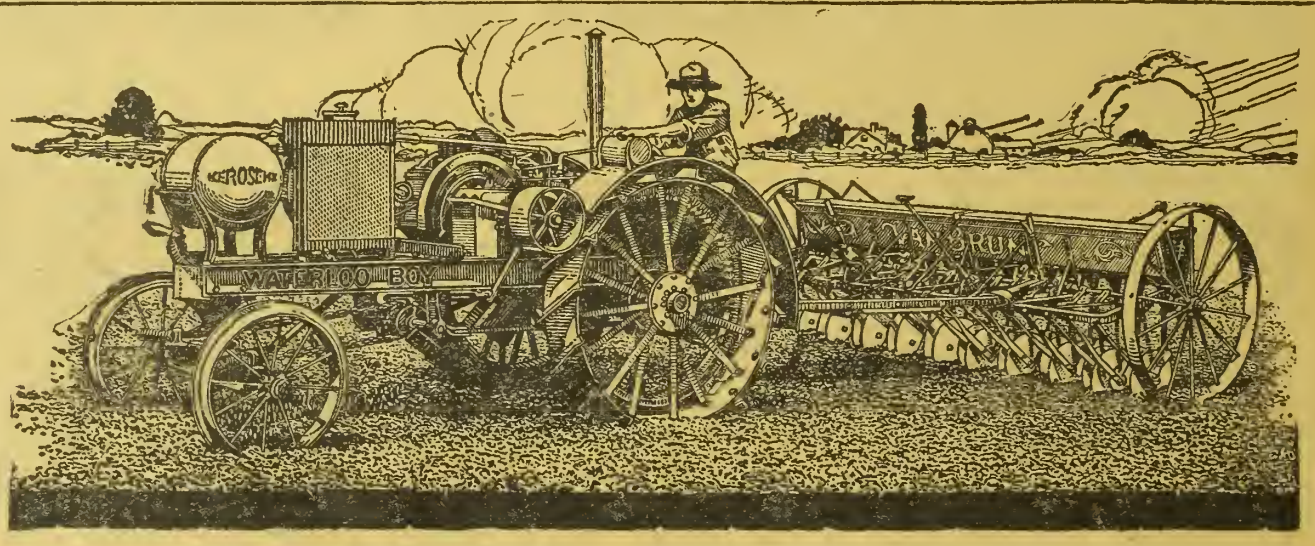
3. Vetch has not been tried to any great extent in this state. The fall sown vetch has not withstood the winters readily. I saw some of the spring or hairy vetch recently that was excellent. This crop is well worth trying with rye, about half and half.—H. A. L.

As to Licensing Stallions.

Has the livestock association the right to pass a law to put a stop to farmers and stock raisers breeding to horse that is not licensed that is as good or better than some of them that are licensed?—M. L. S., El Paso County, Colo.

The stallion law which went into effect June 22, 1919, states that it is unlawful for any person, persons, company or corporation to stand any stallion for public service in the state of Colorado without having obtained from the State Board of Stock Inspection Commissioners a license authorizing such public service. It is necessary for the owner of a stallion to file application for license with the State Board of Stock Inspection Commissioners.

The license shall state in large type that the animal licensed is a purebred stallion or jack, or grade stallion or jack, as the case may be, and shall give the breed, age, color, etc., together with the names of breeder and owner. Before the license can be issued a thorough examination of the animal in question must be made by a licensed veterinarian of the state of Colorado, or a federal veterinarian, stating that the stallion or jack to be licensed is not afflicted



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with any of the diseases or unsoundnesses stated in the law.

These unsoundnesses are roaring, ring bone, St. Vitus dance, crampiness, shivering, string halt, bone spavin, moon blindness, bog spavin, curb or any form of infectious or contagious diseases. The law further states that any person who shall offer the breeding services of any stallion or jack to the public in this state or make a charge for such service shall have a license as provided herein, and shall keep such license posted in a prominent place on or near the stall where the said stallion or jack is kept.

The idea of the law is a protection against the transmission or communication of the unsoundnesses stated. This is to the farmers' interest and should be adhered to. You will note that the law provides for the licensing of both purebred and grade stallions that are free from unsoundness. If the horse you refer to is free from these unsoundnesses the licensed veterinarian called to act upon the application will pass favorably on the application. As the fee for licensing is only $5 there is no reason why the licensed stallion should be stood at an exorbitant charge. It is to your interest to know whether or not the horse is unsound and an examination by a competent veterinarian will give you this assurance.—H. A. L.

Patent Should Be Recorded.

Should a patent on a homestead be filed or recorded at the county seat in the county where land is located? How long is it good if not recorded? Will lack of recording make patent of no value to entryman?—J. R. W. El Paso county, Colo.

The patent should be recorded. It is good if not recorded, the object of recording being to give notice to all the world of the ownership of the land. Even though not recorded the patent from the government is good and unassailable. But patents as well as all other transfers of land should always be recorded.—Hamlet J. Barry, 724 Equitable Bldg., Denver, Colo.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Inflammation of the Udder.

A Holstein cow about 4 years old and just fresh has a lump or kernel about the size of a walnut on the upper edge of the left hind quarter of her udder. This lump was first noticed about two months before calving. As the cow neared time for calving the whole quarter became congested and was treated by bathing with hot water and rubbing with melted lard. At the time of calving there was pronounced inflammation and the milk produced by that quarter was sort of thick and yellow. Since calving the inflammation has disappeared and the milk is normal in color, but very scanty in amount. The infected quarter is still congested and the lump remains. It is hard and adheres to the tissues, but can be moved about under the skin. Would it be advisable to lance and remove it and what precautions would be necessary?—C. N. W., Arapahoe County, Colo.

The tumefaction on the outside of the udder is no doubt due to infection and inflammation of the glandular tissue on the inside, and of itself is not serious. The tumor should be removed only in case that it persists, and grows larger, after the udder has otherwise become normal. Inflammation of the udder is very common, especially among cows that are heavy milkers. This condition is intimately associated with contagious abortion, but may occur independently of it, and is usually caused by infection through the natural opening in the teat. Abscesses may form with more or less destruction of glandular tissue. In extreme cases a portion of the udder may become cold and insensible and finally slough. It may be better to dry the infected quarter until she again becomes fresh. Hot poultices, antiphlogistin, mild liniments, and massage, should constitute an outline of the treatment. If the tumor becomes soft it should be opened to allow escape of pus. A veterinarian with proper appliances would probably use internal treatment through the teat, but under present conditions it had better not be considered.—G. H. G.

Colt Incurably Lame.

I have a colt a little over a year old that is lame in one hind leg. He stands with his hip lowered and foot turned back. There is a swelling just below the stifle joint. When he walks it cracks occasionally and sometimes it sounds as though there were water in the joint. Sometimes it jerks as if it were going out of joint. He has been this way about a month.—J. B., Weld County, Colo.

The symptoms given indicate chronic inflammation of the knee, or stifle joint. This is known as gonitis and is practically incurable. It has its origin usually in the ends of one or both of the large bones next to the joint, later extending to the articular cartilage and the joint structures. Pus does not form, but there is an excess of joint water (synovia) which causes a soft swelling below the kneepan (patella). By some it is considered as being caused by infection. Blisters might be tried, but with very small hope of success.—G. H. G.

May Be Contagious Abortion.

I have two cows, one four years old and one six, that have not come in heat since calving over two months ago. What can I give them to remedy this condition?—R. K. Y., Morgan County, Colo.

The cows are in an abnormal condition, otherwise they would breed. This abnormality probably consists of either diseased ovaries or inflammation of inner wall of the womb, due to infection. Even though the ovaries are cystic there is some hope that they may yet become breeders. The serious part of it is that in all probability contagious abortion is present and may affect your other cows, although these particular cows did not abort. They may have failed to breed because of retained placenta. In this case there would be an offensive discharge and the physical condition of the cows would indicate serious poisoning from absorption of toxic products from the womb. If affected with contagious abortion their general condition of health will be satisfactory in most cases, but they will not breed. Cows do not always abort when affected with contagious abortion, but sterility, garget, and white scours in the calves may be present. A physical examination is the only possible way of determining the condition of these cows. Recently cows were examined in the college clinic and several pints of pus was found in the wombs of two of them, chronic metritis in three, and cystic ovaries in three. All of these cows were found to be in a fair physical condition otherwise, and had they not failed to breed, would never have been suspected of disease. Have your veterinarian examine these cows; they may be saved as breeders. If there is no hope for them they should be sent to the block. Of course, their failure to breed may be due to some temporary condition.—G. H. G.

Comment by Farmer Putnam.

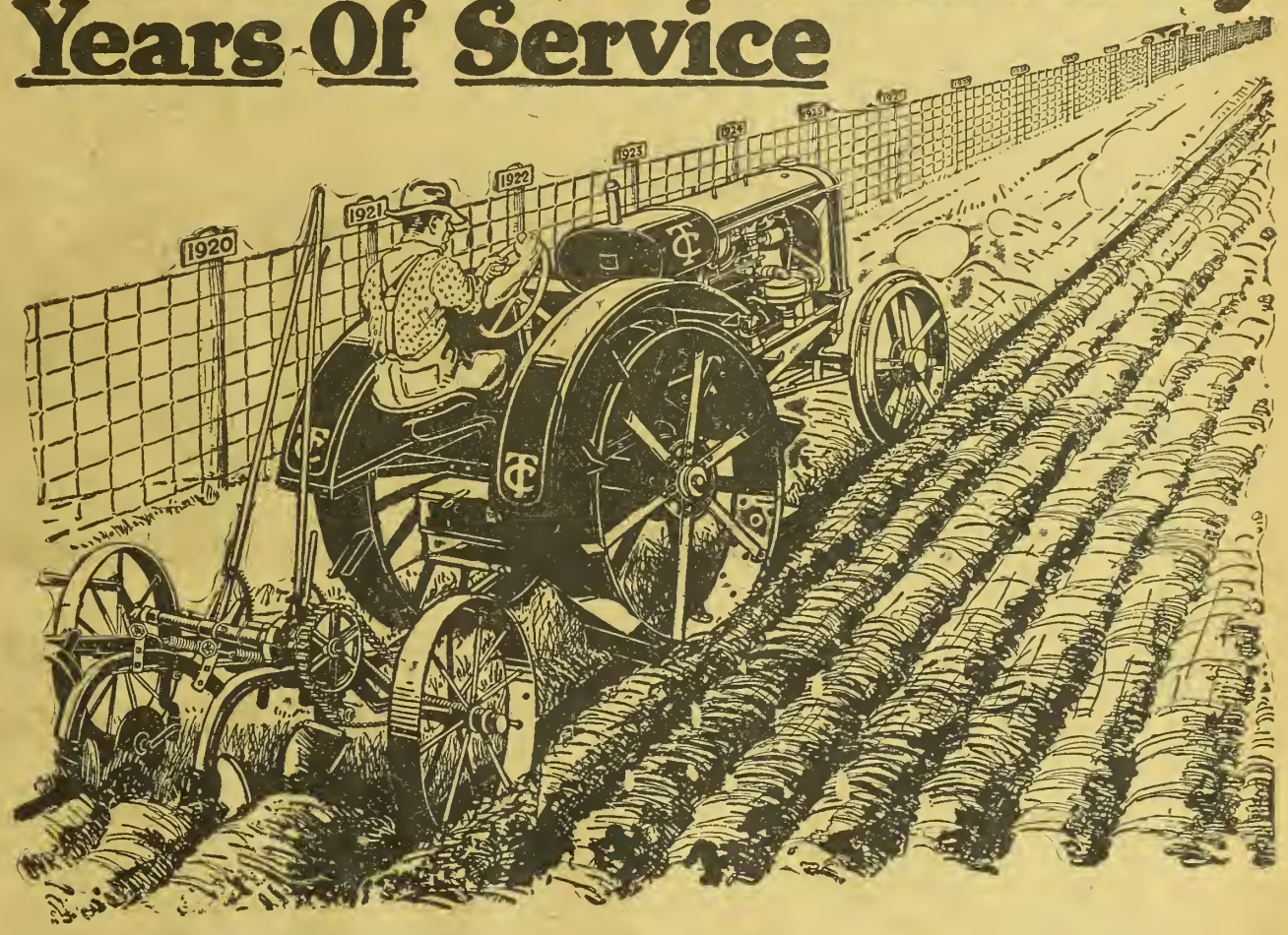
(Continued from Page 9.)

when I say hill I don't mean the kind of bluffs we got around Weston; they're high all right, but this hill goin' up toward the Rabbit Ear range is like about ten or fifteen of them Missouri river bluffs piled right on top of another, and from the top of all of them we looked down about 2,000 feet into the Yampa valley, with the river runnin' like a silver streak down through the green medders and the tall timber, and bright flowers linin' the steep sides of the hills. If Moses would-a seen somethin' like this when he looked down from Pisgah into the Promised Land he would have insisted on the Lord lettin' him go down into the valley instead of takin' him off to heaven. That's one valley that's more beautiful then any mortal kin think of heaven bein'. Where could you git purtier purple blossoms, brighter reds and stronger yallers and deeper greens? And they was a peace in the air that seemed to be not of the sun but higher, and a glory that was above the earth, and a beauty that no human could define and we could only feel it. It went through me like a thrill—but when I looked around I found myself puttin' my hand in a cactus that growed on a rock where I was perched. That's what thrilled me so.

Well I had two days full of good time and enjoyed it all. That thar Moffat trip is worth anybody's time and money. I got to leave somethin' fur the editor to write about in the next number, so he kin tell you-all about the Maxwell-Miller Shorthorn ranch, Riester's Ayrshires and Carr Pritchett's Shorthorns. I never got a warmer welcome and never felt more like goin' back to a place then over thar in Routt. I don't care whether they build a tunnel or not; I'm willin' to climb five or six mountain ranges to git into that country and visit them big-hearted people.

Thos. Jefferson Putnam

Tractor Cost Measured By Years Of Service



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Colorado State Farm Bureau News

Matter appearing in this department relates to the activities of the State and National Farm Bureaus, including official communications from the Colorado State organization and general reports, calculated to keep farmers informed regarding progress of this great educational movement.

Income Tax Reports.

Recently the income tax committee from Iowa was appointed to take charge of the income tax work for the entire United States. They have spent the last six months in studying the laws and rulings in an endeavor to get a more satisfactory arrangement for farmers to make their reports. Recently they spent two weeks in Washington in conference with the revenue officials. The first public report which they have made was made at the meeting of the Midwest Farm Bureau Federation.

"The method of applying the income tax has caused a great deal of dissatisfaction especially among the farmers," is the statement of George M. Fox in the opening remarks to the conference. "A great many did not keep books prior to the enactment of the income tax law in 1913. Unfortunately when they began to keep records the Department of Internal Revenue, together with some people who helped the farmers to make out their reports, urged them to report on a cash basis without realizing or taking into consideration the endless amount of dissatisfaction and inequalities of taxation to which they have become subject. The American Farm Bureau Federation is undertaking to establish a system of accounting for the farmers and is presenting inequalities and irregularities before the Internal Revenue Department in an effort to secure justice."

The committee is convinced that the inventory system of reporting income is the only true method of ascertaining the income or profit and paying the tax in the years in which the income is earned. It is thought that the Department of Internal Revenue feels that such is the case but it will not favor the one method in preference to the other.

The committee made three suggestions as to methods of changing from the cash to the inventory method. These suggestions, however, were not accepted. The board of reviews and appeals, however, agreed to change the present ruling and to allow the taxpayer to produce back inventories in order to make adjustments. This method is acknowledged as fair by the committee, but it can not be used in all cases as figures are not obtainable.

The committee is working on a bookkeeping system which will be even more simple than the present system which is being used in Iowa, and which will be accepted when finished by the Internal Revenue Department as a basis for farmers paying their income tax. The committee suggests that the Farm Bureau Federation publish the account book and that they foster an educational program which will help the farmers to get on an inventory system. They also proposed to support legislation which will enable the farmer to change from a cash to an inventory basis on a more equitable and practical plan than is possible at the present time.—Wallace's Farmer.

Womens' Part in Farm Bureau Work.

Probably no one doubts the possibilities of the women developing community interest; but few realize how important it is that the women take their part in its development through the farm bureau. As has been suggested, the farm bureau is like a stool supported by three legs; if one of the supports is withdrawn, the stool can be made to stand by resting it against a wall, but its solidity is gone. The women of Colorado are as necessary in developing the interest of Colorado in the State Farm Bureau as any other factor, and we want to give a few reasons why that is so.

Naturally the home demonstration agents are watching the work of the women and girls develop with a little more care and anxiety than they do the work of the men and boys. But this has been a noticeable fact, that where the women have become very much interested in a project of their own, the men's work along widely different lines has, in nearly every case, been strengthened. The state leader of women's work in Idaho said just a few days ago, "The mistake of putting all the stress on the men's work in the first place in our state, and not trying to secure the interest of the women has held back our farm bureau about five years. Where we have active women members we have our strongest work in both lines."

The women in eleven counties in Colorado are doing definite work along five main lines of interest. When one woman is doing an especially interesting piece of work in her home, through the suggestion received at a meeting, or through an extension worker, either state or county, she is a demonstrator of that work, and part of her obligation through the farm bureau is to pass the good news along to her neighbors.

It therefore follows that the eighty-one water systems put into as many homes in Colorado last year have not only lightened the drudgery in those homes, but each is the most practical and inspirational sort of lesson for four or five neighbor women and men who will be putting them in this year, for reports of the spread of this activity are coming in steadily. And so it goes with the six hundred iceless refrigerators and the kitchen cabinets and high-stools. In Fremont county, where there is no demonstration agent, the chairman of the women's work has, through showing and talking of her own iceless refrigerator, gotten about twenty other women to make similar ones. She has, upon request, mailed out between two and three hundred home conveniences and water system bulletins. The women of Fremont county have in that way been instrumental in keeping up their farm bureau interest.

We might go on to tell you many interesting details of the hundreds of made-over garments which have been remade in the work carried on in the clothing project, of the forty or fifty classes in home nursing which were chosen by the women in the community farm bureaus; but carried on through the co-operation of the Red Cross; of hot school lunches established in two hundred rural schools; but space does not permit. There is one project which is developing so rapidly that it is difficult to keep up with it, and that is the poultry. Nothing has seemed to awaken a whole community or a whole county, for that matter, quite so readily as comparing notes on the egg or eggless intentions of the family hens. Culling has been the first step, but some counties, Logan and Saguache in particular, have already gone so far as to form breeders' associations, and small shows, securing good feeding rations through the local elevators, etc., have been other steps. Two years ago the poultry culling started in Idaho. For this fall the poultry specialist has already made contracts with the markets of Spokane and Portland to receive and with the railroad to ship a trainload of culls to be taken out of flocks during a culling week in October.

We know that the women of Colorado are interested, but we want you both, men and women, to realize how far-reaching that interest is going to be.—E. D., in El Paso County Democrat.

Insurance on Telegrams.

Hundreds of thousands of dollars yearly are lost by farmers through errors in telegraphic transmission of prices.

Because of this fact, the Michigan State Farm Bureau will co-operate in the movement of shippers and business men to obtain a new telegraphic message classification, which would make telegraph companies liable for the full and actual loss, damage or injury, caused by failure to transmit messages properly and accurately.

An example of how vitally a new method is needed is the case of a large fruit shipper in southern Michigan. He quoted grapes extensively over the middle west by telegraph at 13 cents per pound in carload lots. Only one message went through at 13 cents. All of the other messages went through at 18 cents. Thousands of dollars were lost to this shipper as his competitor was able, as a result of this error, to dispose of his stock at 15 cents.

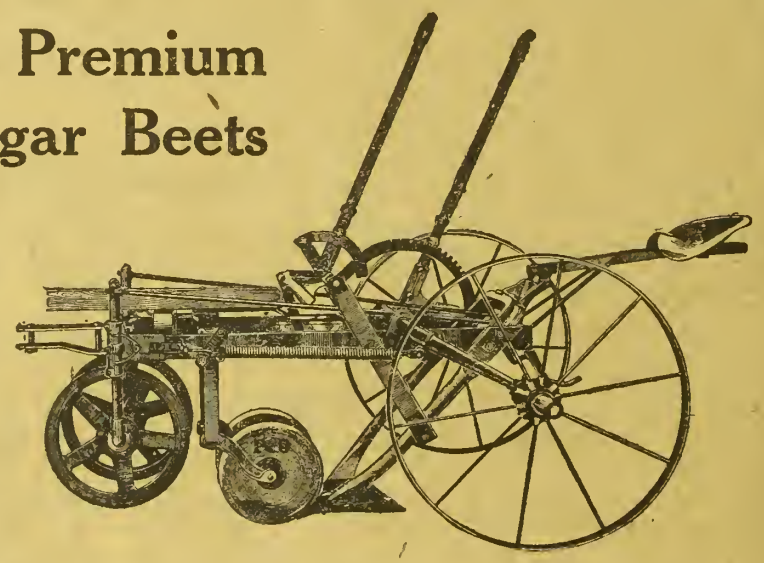
A graduated insurance system on messages is what is desired, similar to rules governing insurance of express shipments, that is, shippers desiring protection against error in a telegraphic message would have the privilege of setting a value on that message and pay a rate based upon the amount of liability they desire telegraph companies to assume.

If in need of advice, ask Western Farm Life Service Bureau.

With Sugar at a Premium Save All the Sugar Beets

P&O

Riding Beet Puller



AFTER nursing a sugar beet field throughout the season, it would be the height of folly when it is time to harvest the crop, to use anything but the very best digger you can buy. With sugar soaring in price, figure out your loss if the beets are cut, bruised or destroyed by improper work in the last operation before going to the beet sugar factory.

Pulls All the Beets— Whole and Unbruised

The **P & O No. 2 Riding Beet Puller** gets all the beets, large and small, raising them to the surface, whole and unbruised. Drawn by two or three horses, and easily guided by the operator from the shifting seat, which in turn acts as a pivot for dodging to the right or left.

Simple, Strong and Dependable

The P & O Beet Puller has a number of features which adapt it to any beet section. Hitch adjustable for 2 or 3 horses; tongue has free lateral movement when puller is being operated, but is rigid when pulling appliance is raised for transportation; lifting bars can be swung in or out to get proper width for small or large beets, or to adapt them to loose or sandy soil; carrying wheels balance the frame; adustable for width of rows.

Furnished with Three-Horse Evener.

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Clark's Travel Letter.

Mr. Thomas Jefferson Putnam,
Salem, Colo.:

I have just returned from Moffat county and I had a delightful trip. The distance from Denver to Craig is 255 miles and the country most of the way is suited only to grazing. The railroad winds its way around the mountains and in places it is track above track, sort of "loop the loop," I presume. The scenery all the way is most beautiful and fascinating. The highest point has an altitude of 11,660 feet and it is considerably above the snow line. I left Denver at 9 o'clock in the morning and arrived at Craig at 12:30 midnight, so you see it was a long ride. I hope you, Josephine and the children can visit that country some time. It would do you a lot of good. The country around Craig is hilly and rolling, quite to my surprise, as I supposed it was level. It reminds me some of the Palouse country in Washington, but more broken and rough. The soil is a sandy loam and well suited to the growing of all common crops. The climate is mild, but the snowfall is heavy in the winter.

Moffat county is settling up very rapidly, most of the people coming from Kansas and Missouri as usual. County Agent Davis has a 320-acre homestead and Mrs. Davis is "holding down until they prove up." There are some other Davis's on homesteads there, relatives of the county agent, and they are all from Missouri, and unless I miss my guess that county will be inhabited by Davis's, like it was a year ago with prairie dogs before the pest districts were organized. They are good people and let them go to it.

We held several meetings in the county to discuss feed and livestock problems and one night we took supper with Mr. and Mrs. E. J. Butler and such a feed you never saw! We had canned venison, milk, butter, cream, cottage cheese, potatoes, corn, lettuce and a whole lot of other things too numerous to mention. Everything was produced on the farm except the peaches, and these were grown on Mr. Butler's tract at Grand Valley. This shows what a dry farm will do when given an opportunity. Mr. Butler told me that he had raised potatoes that weighed 4 pounds a piece. The dry land alfalfa is immense. It does well everywhere and I firmly believe that Moffat county can produce more dry land alfalfa than any other dry land county in the U. S. I told the farmers to get their farms to alfalfa right away. It will do them more good than any other crop they can raise.

I certainly was surprised, Tom, to see farmers sowing spring wheat the middle of June, and I think they are playing a losing game in so doing.

S. O. Clark told me that he sowed Defiance wheat as late as June 21 and got a yield of 12 bushels to the acre. Of course, it got frosted. You know as well as I do that it is a wrong system; a change must be made for the better sooner or later.

We held meetings at Great Divide, Big Gulch, Lay, Maybell and at Craig. I questioned the farmers on everything and learned that they can successfully raise all the common grains, corn, Sudan grass and even ripen sorghum. Well, you know that a country that can do that must be all right. I saw an old sunflower patch at Maybell and I am sure from the stand of old plants that the yield would be at least 30 tons to the acre and everybody reported favorably on sunflowers.

Moffat county needs development. It is buying too much and selling too little. Butter, meat, cheese, eggs and all kinds of feeds and seeds are being imported yet. Steamboat Springs has two creameries, but they cannot supply the demand. Farmers are beginning to see the light and are thinking about producing more and in a few years will be shipping out. Mr. Butler milks a few cows and his milk check amounts to about $100 a month. Mr. R. E. Estey near Craig has a dairy herd and supplies the people of the town with milk at 20 cents a quart. Mr. Estey informed me that he was just breaking even on the operation, but he is building a silo and is going to weed out his star boarders.

You would be surprised Tom, to hear the farmers ask questions on subjects that were settled thirty years ago. But that shows the need of keeping everlastingly at it. I presume there are farmers who have not yet heard of the flying machine. It is the duty of the state to help these people solve their agricultural and transportation problems.

I must not forget to tell you that Mr. Estey raised a bumper crop of corn last year on summer fallowed land and it was the dryest year ever known. In my travels I find that the best results are secured on the dry land, when the soil is well handled and one crop taken in every two years. Dry land is cheap and why squeeze it so hard for crops?

Last winter was more severe than usual in Moffat county. Snow came early, the winter was long, feed was scarce, high in price and the stockman suffered. Horses were so weak that some farmers could hardly get their crops sown. I have seen this same condition before in other parts of Colorado. Moffat county has abundance of summer grazing and the main problem is sufficient winter feed. I predict that in a few years the farmers of Moffat county will be finishing livestock for the spring markets instead of following the old range plan.

It can be done, and County Agent Davis has started it by getting the farmers to build silos. Sixty-five farmers are putting in silos and the business men of Craig are helping the county agent to get the farmers into clubs so that they (the farmers) can co-operate in filling the silos. The business men are selling silage cutters at actual cost and giving the farmers long time to pay for them at a low rate of interest. Moffat county has some mining interests, but it will be insignificant compared with the farming industry when the latter is developed, and the business men know it.

There are lots of people looking for homesteads, and before long the county will be settled. Through the County Farm Bureau and boys' and girls' clubs the people are learning the possibilities of the soil and before we know it Moffat county will rank well with the older counties of the state.

Talking about homesteads makes me think of the bonus for soldiers. I met a young man on the train on the way from Craig, who took a 640-acre homestead when the war broke out. He served through the war and because of his service is allowed now to prove up. He made no improvements on the homestead and can now sell one-half of it for $5,000. This young man has suffered no disability, is strong and well and should our government give him further recognition for service by granting him a bonus? This is a fine point and it illustrates that there are conditions bearing on the bonus proposition of which the public is entirely uninformed. When the Germans were threatening Paris I promised myself to always respect the uniform and I feel very grateful to our good, brave and fearless soldiers, but at the same time I fear that some of our boys are faring too well, while others are not getting their just dues.

When at Maybell I took dinner one day with Mr. and Mrs. Ed McCann. They are the parents of Roud McCann, now secretary of the National Dairy Council. I certainly had a fine visit and can now readily understand where the good stuff in Roud came from. Good breeding in people will show the same as in the lower animals. Mr. McCann settled at Maybell sixteen years ago and has a good farm and a fine farm home. His alfalfa was exceptionally good and a more even, uniform stand I never saw. Mr. McCann says that the soil has to be cropped a few times before it will do its best. He thinks barnyard manure has great value in bringing new soil into a good productive condition.

County Agent Davis sends his regards to you and Josephine and requested that I prevail upon you to visit their community fair this fall. Great plans are being made for the fair and I know you will be well paid for attending it.

Kind regards to yourself and family.
R. W. CLARK.

It does not seem just right to be compelled to offer any extra inducement to get one to renew their subscription to so excellent a paper as Western Farm Life, but with so many duties at hand and no help to be had we are busy, busy, busy. Wishing you and your valued paper the success that I think it deserves, I am yours truly, W. D. Moore, Molina, Colo.

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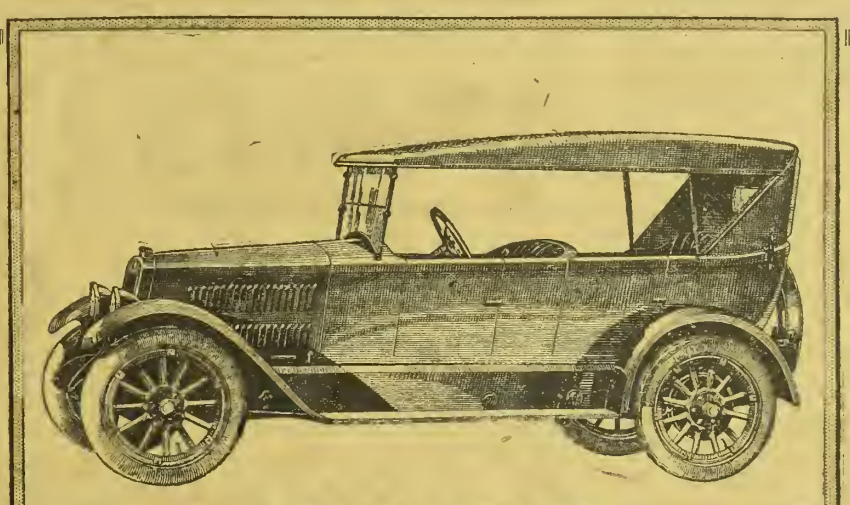

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A $100,000 Dairy Cow Club.

Five hundred farmers and business men in Cloud county, Kansas, have organized a $100,000 cow club for the purchase of Holstein cows and bulls. For years Cloud county has fought the whims of the Kansas drouths and winds in an effort to make the wheat crop solve the problem of making a living, while alfalfa, which grows well along the Republican river valley, and roughage and the crops which make the ensilage Holstein cows prefer, were overlooked or neglected.

Through the efforts of Charles J. Boyle, county agent, interest was started in the dairy cow, and the $100,000 Holstein organization resulted. The Cloud county plan calls for the purchase of 200 high grade Holstein cows with enough $5,000 to $8,000 bulls for the herd. "The better the bull, the better the offspring," is the slogan adopted by the members of the club.

Each farmer who takes a cow will subscribe $100 stock in the corporation, and this rule holds for every cow he takes, so that the corporation holds $100 for every cow placed among its members. Besides the milk product, he will receive for five years, one-half the profits on the bull calves and one-half the female progeny of his herd, which will be sold at the end of the five-year period.

Each member receives the services of the purebred bulls at a nominal fee.

New Mexico's Record Holstein.

Arcady Segis Barbara, a purebred Holstein cow, owned by the New Mexico College of Agriculture and Mechanic Arts, has recently completed a year's record on Advanced Registry test, producing 22,599.5 pounds of milk, containing 755.99 pounds of butterfat, or 944.98 pounds of butter, 80 per cent fat, at the age of seven years. This makes her the champion cow of New Mexico, from the standpoint of milk production, and one of the highest, both in milk and butterfat, among cows owned by agricultural colleges. Her previous year's record under official test was 19,056.1 pounds of milk and 640 pounds of butterfat. This makes a total for the past two years of 41,655.6 pounds of milk and 1,398.99 pounds of butterfat, or more than 20 tons of milk and over two-thirds of a ton of butterfat for the two years.

Silage for Idaho Conditions.

Experiments have shown that use of silage accomplishes the following results: Cheapens the cost of the ration fed; increases the production of milk; and improves the health and "condition" of cattle. There are several minor results and advantages, such as permitting the feeding of more roughage and less concentrates, encouraging the growing of the ration on the home farm, making possible a better crop rotation, helping solve the alfalfa weevil problem, increasing the profits by whetting the cow's appetite, etc.

The cheapening of the ration is especially noteworthy, because much larger yields can be grown and because it can be substituted for higher priced feeds. When it is possible to grow from 15 to 25 tons (and more) of a succulent feed such as silage, and when a ton of silage will replace half a ton of alfalfa hay, there is no doubt that it cheapens the cost of ration. It is usually conceded that the average yield is about four times that of alfalfa hay, with a feeding value of about one-half as much.

In addition, as noted in the second point, silage increases the flow of milk. The average increase of milk flow as given by practical dairymen in Idaho is about 20 per cent. By this I mean that where hay is fed and then about one-half the hay needed is replaced by silage (2 pounds of silage to 1 pound of hay), the result will be an increase of from 20 to 25 per cent in milk production, from the average cow. Where a a balanced ration has been fed the results may not be so great, but in virtually all cases an increase is shown in the amount of milk with the test remaining practically constant (within the usual variation).

The third point (of keeping the cow in health), although less apparent, is also of considerable importance. Silage has a laxative effect and keeps the general health of the cattle considerably better. Instances are recorded where men have had trouble of losing cattle with impaction before feeding silage and then have found this trouble removed after feeding silage. Some men also claim that cattle bloat less easily and less severely on alfalfa pasture when they are fed ensilage, although this result may not always be relied upon absolutely. Silage certainly is a conditioner, however, and cattle usually have a much sleeker appearance and are more easily kept in condition when it is fed to them.

Statements above made refer to silage in general and apply to a variety of feeds put up in a green condition usually compared to pickling or canning of vegetables. The feeds most commonly used are corn, sunflowers, sorghums, small grains, peas and oats, beet tops, etc. The feeds to be used in different localities will vary with conditions of climate, available soil moisture, crop rotations, and other local differences. There is in general a tendency to use corn wherever it can be grown successfully, and it no doubt is the safest, most used and most reliable crop utilized. It was the first that proved successful.

Farm bureau members throughout Idaho are trying experiments to determine the best crops to use for silage in the various localities of the state. The results of these experiments will be of vital importance to the livestock industry in these places. In general, sunflowers show promise and will yield more heavily but apparently are of inferior quality to corn. Where the corn can be grown to maturity (or to the dent or glazed period) safely it has been considered the very best silage crop that could be grown. Experiments may prove, however, that another crop is better. Sunflowers and other crops will grow where corn cannot be grown successfully and show promise of becoming of great importance to the livestock industry in those localities.

With the alfalfa weevil spreading rapidly, the silo becomes a necessity. The crop to grow will vary and will depend so largely upon the community and the local conditions that the only solution is a well organized series of experiments planned and executed by the farmers co-operating through the farm bureau and by the aid of the county agricultural agent. The experiments being tried this year and others to follow will be interesting and important. The results will be conclusive when experiments are carried on over a sufficient period.—F. R. Cammack, Field Dairyman, University of Idaho.

Receipts from Dairy Tripled.

Keeping daily records of the milk yield of each cow, where there is no cow-testing association, is a profitable practice. This is shown by reports on herd records received by the United States Department of Agriculture.

An instance where a herd has been greatly improved without increasing its numbers (by more than one cow) is found in a report from Oklahoma. The dairyman's cream checks for a given month amounted to $78.42, the cream being obtained from a herd of 27 cows. One year later, after doing herd-record work, he was able with a herd of 28 cows, just one more than he had at the earlier date, to sell cream to the value of $223.60, or nearly three times as much—a pretty good return for care given to culling the herd and improving the management.

While the current prices for butterfat have increased somewhat, they have not trebled in a year, so it is obvious that there has been a large increase in the productiveness of the herd.

If in need of advice, ask Western Farm Life Service Bureau.

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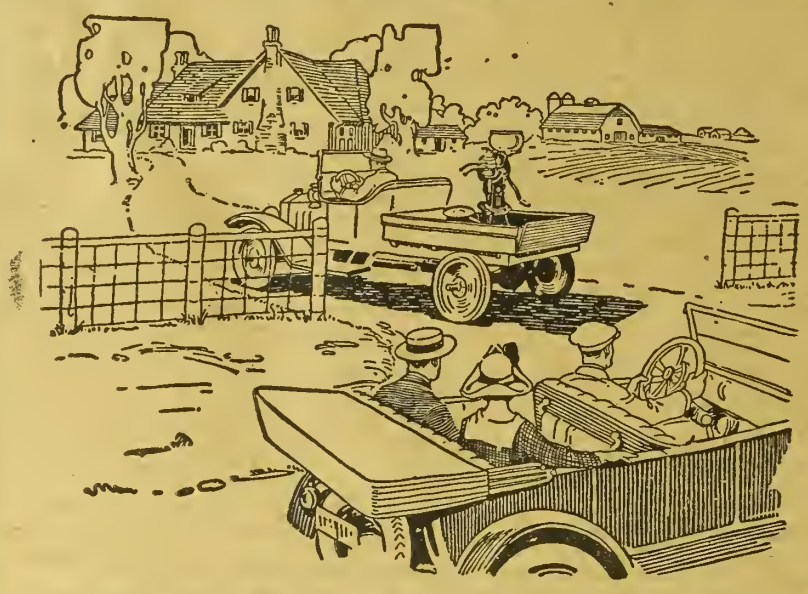

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June Report Colorado Cow Testing Associations.

	Arkansas Valley.	Douglas County-Melvin.	Johnstown Greeley.	Otero County.	Platte, Boulder and St. Vrain Val.
No. of cows tested	311	395	324	271	363
Aver. pounds of milk produced per cow	753	654	810.6	534	684.4
Aver. pounds butterfat produced per cow	25.8	23.9	30.14	20.35	27.7
Number of cows producing over 40 pounds B. F. per month	43	16	65	3	48
High Cow—					
Pounds milk per month	2682	2163.0	2166	1287	1626
Pounds butterfat per month	96.5	84.4	83.5	42.74	71.3
High Herd—					
Number of cows	20	20	19	10	12
Pounds milk produced per cow	1516	891	1180.8	816	993.8
Pounds B. F. produced per cow	48.7	35.6	41.3	30.3	47.5

The American Beet Sugar Company of the Arkansas Valley association have both the high cow and the high herd for the state this month. Twenty cows averaged milk 1,516 pounds, and butterfat 48.7 pounds. Owner, A. B. S. Co., Center Farm, Lamar.

J. C. Lindquist's cow, a purebred Holstein, Jennie, led the Douglas County association with 84.4 pounds butterfat and 2,163 pounds milk. S. A. Gray has high cow in the Johnstown association, with 83.5 pounds butterfat. W. A. Purvis's cow Rocabie has been high cow in the state since February till this month.

Arkansas Valley Association.

There are forty-three quality cows this month. Of these there is one over 90, two over 80, nine over 50, and twenty-six over 40. Although this is one of the lowest months of the year, the number of quality cows has not dropped.

There is more confidence in the dairy situation at present than there has been for some time. There will be an increase in the quantity of milk produced in a few months, as most of the dairymen are breeding for fall production, and the cows are generally at their lowest now. The cows that are milking at present are in good condition and are holding up in their production very well for the length of time they have been milking. Some have been fresh as long as ten months (and some longer), and it is to be expected that the production will drop. The dairymen are optimistic over the present situation and an early adjustment looked for.—R. W. Reed, Tester.

Douglas County.

The Douglas county C. T. A. started work the 10th of June with twenty-four members. Mr. Sherman, an experienced tester from New York and Illinois, is conducting the work and reports eighteen members using purebred sires. Every member has a silo and five are using milking machines. Under Mr. Sherman's supervision we expect to get results in dairying in this section.

Johnstown.

Mr. Guerkink, tester of the Johnstown association, reports S. A. Gray's cow Phoebe leads the association this month with 2,166 pounds milk and 83.5 pounds butterfat. The herd of W. A. Purvis averaged 1180.8 pounds milk and 41.3 pounds butterfat. J. W. Whowell & Son sold twelve grade Holstein cows for an average of $250. Van Meter & Krebill sold five grade Holstein cows averaging $235. These cows with a purebred calf from W. A. Purvis were shipped to Laramie, Wyo., E. C. Benson being the purchaser.

Otero County.

Mr. Eastman reported G. M. Dickson as the owner of the high herd of ten cows in his association. These cows averaged 816 pounds milk and 30.3 pounds butterfat for the month. R. K. Huff also of La Junta, is the owner of the high cow, Blackie, a Holstein, produced 1,287 pounds milk and 42.74 pounds butterfat.

Four new cement silos have been constructed. Pasture is good and the average feed cost per 100 pounds milk is 95 cents. The association is being reorganized for another year. Mr. Eastman will continue his good work.

St. Vrain Valley Association.

This association includes part of the old Boulder association and Platteville, Fort Lupton and Brighton districts.

Mr. Simpson, former tester of the Boulder association, has been employed for the year, but due to his sickness J. C. Doke conducted the June test. Mr. Doke reports H. S. Andrews of Boulder as owner of the high cow, Violet, a Holstein, who produced 1,626 pounds milk and 71.5 pounds butterfat for the month. Mr. Vollmar of Platteville is owner of the high herd. His twelve cows averaged 993.8 pounds milk and 47.5 pounds butterfat. This record is surpassed by only one herd in the state. Thirty per cent of the cows in the association are purebreds. Forty-eight cows produced over 40 pounds butterfat; twenty-two over 50, and eight over 60.

Feed Quotations.

	Fort Collins.	Arkansas Valley.	Douglas Co. Melvin.	Johnstown Greeley.	Otero County.	P., B. & St. Vrain.
Alfalfa	$20.00	$15@18	$26@35	$15@20	$18@22	$20
Silage	8@10	8.00	.....	8@11	.....	7.00
Beet pulp, wet	.....	4.00	.....	1.75*	.....	2.25†
Bran	2.85	2.40	3.25	2.65‡	2.70‡	3.00
Cottonseed meal	.85	3.95	5@5.50	4.25‡	4.00‡	4.50
Linseed meal	6.00	.....	6.00	4.50‡	6.50‡	5.20
Oats	3.75	3.35	4@4.40	76.00†	3.65	4.20
Barley	3.50	2.90	4.40	67.00†	.....	4.20
Corn chop	3.65	2.65	3.20@4	79.20	3.80	3.85
Maize	.....	2.05	4.00	2.60†	.....	.....
Shorts	3.00	2.60	.....	.....	3.05	.....
Paid to Dairymen 3.5 per cent milk per cwt					2.60	
Milk per lb. B. F.	.32 gal.		.70	.68½	.....	.65@.70
Churning Cream	.56 B. F.					
Sweet Cream	.65 B. F.					

*Dry. †Ton. ‡Hundredweight.

The Money Value of a Bull.

Practically every dairy herd contains a few poor cows that are leaning on the better ones for support.

It is well known that the cost of labor, feed and overhead is increased only a slight degree in making milk from 7,000-pound cows as compared to the 4,000 or 5,000 pound class. Therefore, an increase of an average of even 1,000 pounds from the daughters is of importance from the standpoint of profitable returns.

"Assume," says Prof. G. C. White of the Connecticut Agricultural College at Storrs, "that a reasonably well bred sire increases the production of the daughters by three pounds a day. This seems small, but for 300 days the increase would be 900 pounds. In a herd of ten milking cows this is an increase of 9,000 pounds of milk per year, and for the average milking life of the cows an increase of 45,000 pounds. At 8 cents per quart, this an increase in returns of $33.86 per cow per year, $338 for ten cows per year, and $1,692.80 for ten cows for five years, largely net.

"Now what is the extra cost of a good sire? The initial cost of a good sire is about $200, and the scrub $100. The interest would be $10 as compared to $5; the cost of keep would be $100 per year in each case; the depreciation would be $33 (on a three-year basis) for the purebred and practically nothing on the grade. The total cost of keeping the good sire per year is about $143, and of the scrub $105, a difference of $38. An increased cost of $38, therefore, returns $338 on ten daughters, most of which is clear gain. In a large herd, with double the number of daughters, the gain is $677.12; with thirty daughters the gain is $1,015.68, and all for an initial increased cost of $38."—Wallace's Farmer.

Livestock Shows Decrease.

A falling off in the numbers of cattle and hogs in the United States occurred during the first four months of this year, as compared with the like period last year, according to reports of special livestock reporters of the Bureau of Crop Estimates, United States Department of Agriculture.

In the case of hogs, the births during January, February, March and April were about 10 per cent fewer than in the same months last year. The marketings have fallen off about 15 per cent; the farm slaughter was about the same in both seasons; but the deaths on farms this year are over 40 per cent heavier than last year to May 1. Taking into consideration both the births and the deaths (from all causes), it appears that there has been a relative reduction of about 5 per cent during the first four months of this year as compared with the trend during the first four months of last year.

The births of calves from January 1 to May 1 were about 22 per cent fewer this year than last year. The net disposition of cattle by marketings, farm slaughter, and deaths was about 9 per cent greater than last year; it appears that there has been a relative reduction of about 6 per cent in total number of cattle as compared with last year during the four months January 1 to May 1.

Gilts May Be Barren.

Ans. to A. E. W., New Mexico.

It is possible that your two gilts are barren. I would suggest that you try another boar on them, and if they do not breed dispose of them. If you have some alfalfa pasture, put them on it for a few days before you try breeding them again. Regarding a source of grade Holstein cattle, would suggest that you get in touch with Mr. W. A. Barr, State Dairy Commissioner, Phoenix, Arizona.

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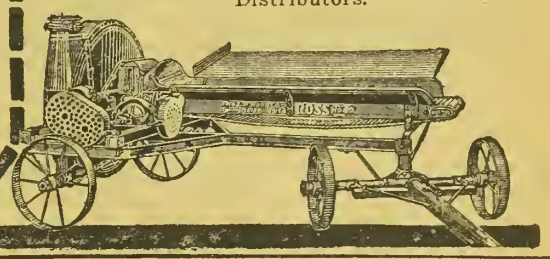

GEHL

Cuts Ensilage--Grinds Alfalfa

Here is an example of farm economy, a double purpose machine; grinds any form of dry roughage including dry corn stalks, ear and all, alfalfa hay, sweet clover, velvet beans, soy beans, etc. All farm animals do much better on ground than on ordinary roughage, besides this they are able to clean it up without waste. Grinding releases all of the feed value contained in the plant and on account of the elimination of waste means

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The Gehl is a double purpose machine; its many years of use have demonstrated its superiority as a silo filler, now it leads again as a feed grinder. Its all steel frame, malleable knife head, separate control of cylinder and blower speeds and powerful self feeder, and positive safety device make it durable, safe and convenient to operate and extremely light running—any 8-16 tractor handles a Gehl 17.

Give us the height of your silo, size of engine and size and speed of pulley and we'll forward complete information about the right size of Gehl Cutter

Write for New Catalog and Sample of Meal

0-11

Our new catalog gives complete information about the machine and some valuable ideas about dry feed handling.

GEHL BROS. MFG. CO.
Western Office: 1734 15th St., Dept. 315
DENVER, COLO.

Testing Sunflowers at 8,600 Feet.

Word comes from the Sneffels Land & Cattle Company at Ridgway, Colo., to the effect that tests are being made with sunflowers for silage purposes on their ranch at an altitude of 8,600 feet. They have put in six long rows planted 36 inches apart and different distances apart in the row, and in hills of three to seven stalks to the hill. The hills are spaced 12 inches and some are spaced 3 inches and other single plants 12 inches. There is one row drilled in.

The seed was planted May 11 and came up quickly. On June 6 some of the rows were thinned out and June 11 the first irrigation was given. On June 14 they gave the plants a heavy cultivation. Sterling Rohlfs, manager of the ranch, writes that the sunflowers are growing very rapidly and that there is every indication of a good yield. The different rows will be weighed out at harvest time and exact calculations will be made as to tonnage per acre. The experiment is being carried out under field conditions in average soil and irrigation is given just as would be done in case of a large acreage of the crop. Results will be awaited with much interest, as this is probably the highest altitude at which a careful test of sunflowers has yet been attempted. At one joint in Saguache county at over 8,000 feet last season sunflowers made a satisfactory yield for silage purposes.

Prevent Cow Sucking Self.

Ans. to J. B. F., Weld county, Colo.

One of the most satisfactory ways of handling a heifer that sucks herself, is to place a bull ring in her nose the same as one would ring a bull. Attach a short piece of light chain six or eight inches long to the ring, or insert another bull ring in the nose ring. When she then tries to get hold of the teat, her tongue will come in contact with the chain in the ring. This will irritate the tender nose and cause her to stop the practice. This will not interfere with grazing or eating to any great extent. It is not always a cure, so that it may be necessary to let her wear it at all times when loose. This is usually the last resort for a self sucking animal.—H. A. L.

Hot Enough for You?
Don't Let Summer Sun Pour Down on an Unpainted Shingle Roof
OR
Wooden Building.
Apply a Rich, Black Coat of
Bituminous WATER PROOF Roof Paint
Adds Years to the Life of the Wood
Saves Repair Bills
Adds to the Appearance of Your Place
TAR DEPARTMENT
THE DENVER GAS & ELECTRIC LIGHT CO.

A Stacker Tells How.

When S. C. Salmon, crop specialist of the Kansas State Agricultural college, was a young man on the farm, he enjoyed a reputation as a stacker.

"In stacking bundle grain," Mr. Salmon explained, "it is necessary to keep the middle full so that the bundles will slope downward and shed water outward. One of the best ways to start a round stack, I have found, is to begin with a shock as the center. Then keep adding to the shock by placing bundles in rows leaning against the shock, each succeeding row becoming flatter than the one preceding until the outer row lies almost flat, but still overlapping, so none of the heads touch the ground.

"In stacking the second layer, I usually began at the outer edge, laying the first row of bundles on top of the outside row of the preceding layer, butts out, at the same time laying a row outside with butts overlapping the outside row. The stacker now walks on the second row, laying bundles ahead of him until he has gone around the stack. When he completes this round, he lays a third row, with butts overlapping the second row, as before. From this point until he reaches the center of the stack, he lays only one row at a time. The stacker steps on every bundle he lays down, packing them solidly.

"The third layer is much the same as the second, except at this point the stacker may begin to push the bundles out a little to get the bulge in the stack.

"The stacker will find at this point that he may have to add extra bundles at the center to keep the center full. The center must always be full enough so the bundles lying against it are always sloping downward.

"At about six feet high, the stacker can begin to pull the bundles inward, at first slowly and then more rapidly as the stack increases in height.

"When the stack is finished the top bundles must be fastened on. This is often done by taking two or three pointed sticks about 6 feet long and running them through the top bundles into the stack. The stick is notched at the top and the top bundles tied to it."

Mr. Salmon said he had had only one experience with a carelessly built stack which "melted" beneath his feet.

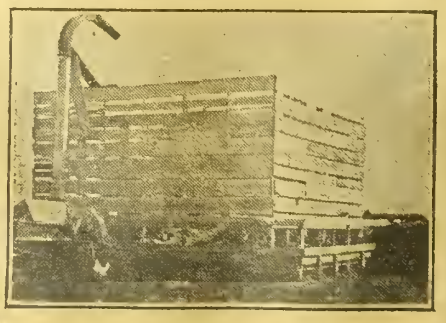
"Keeping the bundles slanting so they will shed water is easier said than done," he went on, "especially if the straw is dry and slippery. It surely gives a man a 'funny' feeling, when his stack is about two-thirds built and he is 10 or 12 feet from the ground, to feel the stack begin to slip. I have had only one bad slide. That time I landed about 30 feet away. Usually a slide will consist of half a load of bundles on one side.

"The stacker's job is to build his stacks so well no slides will occur. A stack which slopes uniformly on all sides, of course, looks much better, but of greater importance is the fact that if one side bulges more than another, or is drawn in more quickly, the stack settles unevenly and the bundles on one side, instead of sloping downward, may show a marked tendency to stand on their heads with their butts up, catching whatever water may fall."

His favorite size, Mr. Salmon added, was a stack about 12 or 14 feet in diameter at the bottom, with the bulge 16 to 18 feet in diameter, about 6 feet from the ground.—Kansas City Star.

Feeding Bunks for Hay.

A very convenient form of feeding rack is shown in the illustration. This is used for the handling of cut hay. The hay is run through an ensilage cutter and cut into short lengths. There is practically no waste in feeding with these racks. They are made 12 feet high and about 20 feet square. During the time in the winter when nothing else can be done, the hay is hauled and blown into the bunk from the cutter. A supply large enough to last for several weeks can be stored at one filling. Mangers are built around the outside in which the cattle feed. Photos taken on farm of N. F. Patnode, Delta County, Colo.—H. A. L.



Feeding racks on the farm of N. F. Patnode, Delta, Colo.

The Prosperous Dairy Farm

WIDE-AWAKE dairy farmers are following the advice of expert authorities and are raising heifer calves. Being good business men, they are developing these calves into profitable cows with the least possible expense. They accomplish this by feeding fresh, warm skimmilk. A cream separator is the only way of securing the sweet, warm skimmilk for feeding, and saving all the butter fat.

Primrose Cream Separators make the dairy farm more prosperous. They have many features which save cream, lengthen the service of the machine and make it easy to operate and care for. See your nearest International dealer or write direct for catalog. Built in four sizes with capacity varying from 350 to 850 pounds of milk per hour.

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Seed Registration Rules.

Colorado farmers who expect to make exhibits at the State Corn Show, which is to be held under the auspices of the State Farm Bureau at Denver, during the week of the National Western Stock Show in January, 1921, will be interested in rules and regulations for registering and certifying seed. These rules have just been promulgated by the Agronomy Department of Colorado Agricultural College. They apply to the Boys' and Girls' Club members as well as to adult farmers who expect to make exhibits in the classes of registered and certified seed. The rules are as follows:

1. A committee of three must be chosen in each county to confer with the County Agent and Agronomy Specialist. Any one of the committee may register a field if accompanied by the County Agent.

What the Growers Must Do.

1. To register a field of pure seed corn an application must be made to the Farm Bureau Committee chosen for this work before September 15.

2. The field must be grown from seed that is certified as pure seed, either from within or without the county, or from seed that can be certified as pure seed.

3. Field of corn to be registered must be at least 30 rods from any other corn field that is itself not registered corn of the same variety.

The committee can reserve the right to refuse to register a field even at the above distance if the conditions indicate that there may be a possibility of mixing.

Certified Seed.

1. Must be selected from a registered field.

2. If shelled it must be either graded, or tipped and butted so that all odd shaped and small kernels are removed.

3. Germination test must be at least 85 per cent.

4. All seed corn sold as certified must be inspected and approved by the committee and a sample left in the office of the County Agricultural Agent.

Note—Where there is any doubt as to purity either through mixing or proximity to another variety of corn the committee should not register the field.

Look Out for Poor Seed.

Following is the substance of a complaint received by Western Farm Life from a subscriber regarding a lot of Sudan grass seed, which turned out to be practically all screenings:

"In December, 1919, I wrote to the —— Seed Company for prices on Johnson grass and Sudan seed. They wrote me they had no Johnson grass and advised me to plant Sudan and if I wanted some to send soon, as after the new year it was going up. So I sent $15 for 100 pounds and paid for it. On arrival I opened the sack and found it to be just fair seed, but not No. 1. Of course, I did not begin to plant until May. I filled two corn planter boxes and when I began to fill them again the second time found nothing but screenings in the sack. I have complained to the State Seed Laboratory, but was told that as most of the screenings consisted of Russian thistles and pigweed and not noxious weeds so nothing could be done. I have 75 pounds of this seed left and am sending you a sample. The company is trying to have me send it back to them."

On receipt of this complaint the matter was taken up again with the State Seed Laboratory and a report on the same given by Anna M. Lute, seed analyst, is as follows:

"An examination of the seed shows that in addition to a large amount of broken and a few whole Sudan grass seeds, it contains the following: Oats, alfalfa, pigweed, green foxtail, barnyard grass and sweet clover.

"This sample is apparently screenings from Sudan grass seed rather than a representative sample of the seed purchased. If that is the case it is impossible for us to judge as to the quality of the seed the farmer has purchased. In view of the non-warranty clause used by all seed dealers, it is difficult to secure reparation after the seed has been planted. Seed is usually returnable if it is unsatisfactory when it arrives. If the farmers could be induced to send us samples for test both before and after purchasing, we could be of great assistance to them. Post mortems are always unsatisfactory.

"This sample contains no weeds that the dealer would have to list as noxious weeds under the Colorado Seed Law. If the farmer could send us a representative sample and a tag showing whether it was mislabelled or not labelled, we should appreciate his assistance. As you know, any grade of seed can be sold in Colorado, the only requirements being a truthful label. It is the duty of this laboratory to report all violations of the Colorado Seed Law which may be brought to its attention and to recommend prosecution in such cases as the evidence seems to justify."

Supplementing this we have a further statement from the Seed Laboratory that is of interest to all Colorado farmers:

"It is the dealer's business to label all seeds as to purity, germination and presence of noxious weeds. A very general statement as to seed quality. It is the farmer's business before he buys seed to check that label, to find out definitely how much pure live seed, how much inert matter, consisting of dead seed, broken seed, dirt, sticks, stones and similar materials, and how much and what weed seeds the seed he is buying contains.

"The Seed Laboratory is equipped and ready to report on seeds submitted, and in a very short time. Such a test will not only enable the farmer to be sure that he is not paying for weed seed, planting it, cultivating it and harvesting it, but will also enable him to decide how much seed he shall plant per acre. For example, if his seed alfalfa is 98 per cent pure, germination 75 per cent, he has 73.5 per cent of live seed alfalfa and would need to sow 17.6 per cent more than if he had 98 per cent pure and 95 per cent germination (93.1 per cent live seed).

"Not all weeds are equally undesirable in fields, hence a detailed purity test showing the various weeds in a sample will enable the farmer to decide whether he is willing to plant the weed seeds his sample contains, or whether he will look farther for clover seed.

"Clean seed is always obtainable, usually at a somewhat higher price. The decision must be made on an accurate and detailed test of the seed under consideration.

"Clean seed will not always grow, hence it is necessary to have seed tested for germination also. The Seed Laboratory is equipped to give each kind of seed its optimum germinating condition and therefore to get the highest germination per cent. It is not likely that under field conditions as large a per cent of seeds will germinate as the Laboratory reports. The more nearly ideal conditions of temperature, moisture and soil during the first few days after planting, the more nearly the laboratory results will be approximated. In view of the new warranty clause used by seed dealers it is necessary that seed testing for the farmer be done before purchasing if possible; certainly before planting."

Alfalfa Weevil Spreading.

Attack on the alfalfa weevil is being made from several different angles by the University of Idaho extension division and experiment station, under authority of the act of the 1919 legislature, which appropriated $20,000 to combat a pest which is placed among the worst that threatens the agricultural interests of the state. Claude Wakeland, extension entomologist, is in the southeastern part of the state, giving demonstrations of the method of controlling the weevil by spraying with an arsenic solution, which is stated to be the best method thus far devised.

Ralph H. Smith, of the Twin Falls entomological substation of the university experiment station, has been conducting an experiment in the Payette valley to ascertain the possibility of killing the weevil with an arsenic dust, a method faster than the spray method, and one which thus far is reported to promise excellent results.

While awaiting the outcome of this experiment, Mr. Smith is conducting a "scouting expedition" through sections of the state where the weevil thus far has not been reported, to see if it has made its appearance. This trip is taking him through Mountain Home and the Grandview country, the Twin Falls north and south side projects, Burley, Rupert, into Bingham county, and possibly elsewhere. Mr. Smith reports finding the weevil all the way between Payette and Emmett, present in small numbers all about Emmett, all the way between Caldwell and Eagle, all the way from Star north to the sagebrush, and two miles out from Caldwell on the Boise-Caldwell road.

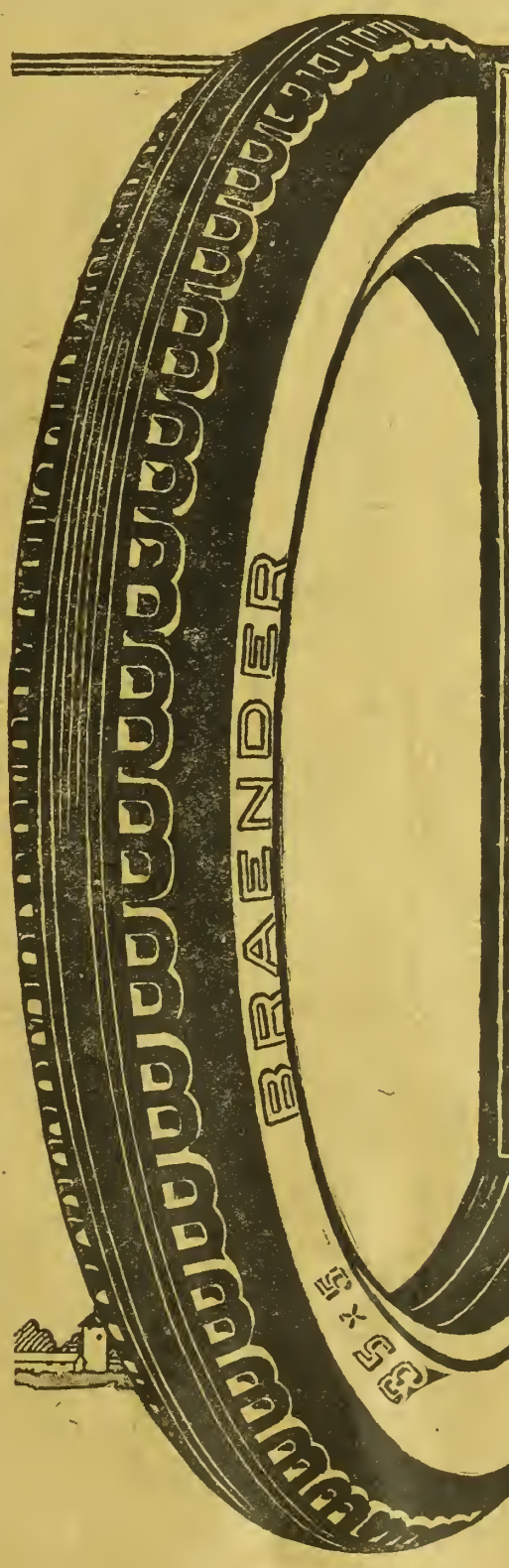
Safe Farming Plan Helps Negroes to Success.

(Continued from Page 3.)

for an additional teacher. The matter of better school facilities for the children is in the hands of the women of the colony, who have organized a club for social welfare work and the discussion of literature, art and music. A meeting of this club was in progress at the farm home of Dr. Jones, the physician who serves the colony, but who also practices farming. In fact, the doctor informed the writer that the colonists were so "distressingly healthy" that he had to keep busy farming most of the time. He said he preferred to have things that way.

Lined up in front of the residence of Dr. Jones were carts and saddle horses and a buggy or two, which had brought the negro women from the surrounding homes to the club meeting for discussion of the regular program, at which not only social questions are taken up but such things as improvement of the roads. In fact, the women have initiated a movement that may result in action on the part of the commissioners of Weld county for better highway and bridge facilities at the entrance of the colony between Masters and Dearfield. The roads are in a deplorable condition, which is not the fault of the settlers, but of county officials who are unmindful of the fact that farmers deserve consideration no matter what their color.

The men are banded together in what is known as the Farmers' Protective Association and their program includes the discussion of agricultural improvement, livestock, good roads and the like. Their work is done by committees very much on the Farm Bureau plan with registered sires as one of the leading projects. The first purebred sire brought into the colony was a gift from J. F. Welborn of the Colorado Fuel & Iron Company. The Orchard Bank has given some encouragement to the colonists in furnishing funds for the purchase of good livestock. In fact, there is a decided demand among the settlers for cows, as they have more feed in prospect than there is stock to use it. The suggestion of County Agent Knapp is to go slow. He stated that there was need for more silos and better facilities for winter feeding before the settlers could branch out heavily as dairy or beef producers. As is the case in many other dry land sections, these people want the dual purpose animal, so that they can turn the cows out during the pasture season and feel sure of a steady income from the grass.



These Bull-Dog Qualities You Can Depend Upon

It may be a bit old-fashioned to insist upon BRAENDER standard of construction and workmanship. We could make more tires than we do by "skimping" a little here and there. And for a long time we could sell all the tires we could make, if each motorist bought only *once* from us.

But such a policy would not give you the sturdy, self-reliant qualities which you can depend upon—the qualities which have made BRAENDERS known far and wide as the "Bull-Dog Tires."

For we Braenders are not chiefly interested in the stock market, but in the factory here in Rutherford, and in the service which BRAENDER TIRES can be made to render. We live here, just making tires and insisting upon turning them out as conscientiously as our workmen know how. That's why you can *depend* on BRAENDER TIRES.

BRAENDER CORD & FABRIC TIRES

Ask your dealer for them. If he cannot supply you, write to

BRAENDER RUBBER & TIRE CO.,
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New York, 132 Nassau St. San Francisco, 131-133 8th St. Philadelphia, 1327 N. Broad St. Chicago, 64-72 E. 14th St.

TORPEY RUBBER CO., 1909, Lawrence St., Denver, Colo.

Haying on the ranch of James Amick, near Meeker, Rio Blanco County, Colo. Alfalfa yields five tons to the acre, and two cuttings are had. The ranch supports 300 head of cattle.

Supremacy of Alfalfa.

Alfalfa now has an acreage greater than that of any other legume or grass cut for hay, not growing in combination with another. Of the total tame hay acreage in 1919, alfalfa occupied 21.1 per cent, timothy and clover mixed 18.2 per cent, timothy 15.9 per cent, clover 12.3 per cent, pea 8.7 per cent, grain cut green 7.7 per cent, and all others 16.1 per cent. If the acreage of the timothy and clover mixture is equally divided between those two plants, the timothy acreage becomes 25 per cent of the total of tame hay acreage, and clover 21.4 per cent, so that timothy is still the leading hay plant and the clovers have second place, a little above alfalfa.

The leguminous plants, alfalfa, clover, one-half of clover and timothy, and pea are 51.2 per cent of the tame hay area, and it is a significant fact that more than one-half of the tame hay acreage is now devoted to plants of the nutritive and soil improving properties of the legumes, whereas, ten years ago, as the census testifies, hardly one-third of the tame hay area was leguminous. This comparison has been established by the Bureau of Crop Estimates.

Testing a New Peach Grader.

Peach growers are displaying keen interest in the new peach-sizing device perfected by the Bureau of Markets, United States Department of Agriculture. Application for a public patent covering the sizer has been granted by the Patent Office, and many requests for drawings have been received.

The machines will be used in the peach belt during the coming season. The performance of the sizer will be carefully watched by peach growers and manufacturers generally, and if the device proves to be all that is claimed for it the next peach season will doubtless find a large number of the machines in practical operation.

The object sought by the use of the machine is to handle fruit more efficiently than heretofore, and at lower cost. The over-all dimensions of the machine are 24 by 15 feet, and with from ten to fifteen packers working at one time, each machine permits of a run of from two to three carloads of peaches per day. The device can be operated by an electric motor of less than 1-horse-power capacity, or by a small gas engine, and can be run at half capacity, if desired. According to estimates of the designers, the machine should sell commercially at not more than $450.

It is thought that, in addition to sizing peaches, the machine has possibilities for grading fruits such as apples, pears, and oranges. The device now is being tested for grading sweet potatoes.

Zone Plan of Spraying Service is Explained.

(Continued from Page 5).

While a farm label well supported, is a good thing, a district label, faithfully protected, is much better because of a greater volume of a given product and consequently its wider distribution. These western New York growers are making "Cataract" brand fruit a unit standard and already are receiving gratifying repeat orders. Skookum apples from the Northwest have established trade calls peculiarly their own. Here in the intermountain west what are we doing to hold our own in competition with our neighbors on the east and on the west? Distributors can better afford to handle fruit that meets a unit standard, for once its quality becomes known to the consuming public, calls come for this brand of fruit and there are few or no concelled orders. It seems almost certain that if Niagara county apple growers can make orchards fifty to ninety years old profitable to them, the fruit growers of the intermountain west should be able to make orchards fifteen to thirty years old remunerative in an environment of soil and climate favorable to the production of high quality fruit. We have in each producing district some successful growers and could their pack and grade become the unit standard of the whole district, we feel the total output could more successfully compete with quality grades both east and west.

Since the preceding report was prepared a representative meeting of nearly all western New York fruit interests was held and fifteen western New York associations and packing houses formed the Western New York Fruit Growers' Co-operative Packing Association. N. R. Peet was selected as general manager. Mr. Peet resigned from his position as manager of Niagara County Farm Bureau, July 1. He at once took up his new duties, making his headquarters at Rochester, N. Y. The entire number of local fruit associations in western New York—thirty in all—plan to become charter members of the central association now under Mr. Peet's efficient management.

Thus has been consummated a very important central organization of statewide importance to apple, peach, cherry and grape growers, from the initial beginning of a work started by Mr. Peet in commercial fruit districts of Niagara county two years ago. The leaven worked and brought what promises to be a most successful central organization of fruit interests to all western New York.

What New York has accomplished should prove to be interesting for intermountain fruit interests to seriously consider. Let us be benefited by their good example and resolve to "go thou and do likewise."

Western Farm Life:

We are writing you to thank you for the war book you sent us. We appreciate it very much. It is just what we wanted, think it is grand and don't see how you could afford to give such a valuable prize. Thanking you and wishing you success, we are, Mr. and Mrs. J. H. Perdue, Blackfoot, Idaho.

The Wonderful Attractions of British Columbia

Few countries possess all the conditions for happy, prosperous living as does British Columbia. The varieties of climate and soil offer inducements for almost every branch of agriculture. Whether in the warm interior valleys, the rich grazing table lands or the fruitful lowlands of the coast or Vancouver Island, the advantages offered for

Dairying, Fruit Growing and Stock Raising

are such as must appeal to those who wish to improve their circumstances and at the same time live in a country of delightful climate, magnificent scenery, varied resources, progressive people and abundance of opportunity for development. British Columbia—the playground of America—is already famous for the production of its orchards, fields and dairies. Now is the time to

Learn about this wonderful Province and share in its possibilities. Its industrial life—mining, lumbering, fishing, manufacturing, transportation—assures a ready market at good prices for all the farmer can produce. Schools, churches, railways, roads, telephones, all the conveniences of an old land await you in this new Province of Opportunity and Success.

For illustrated literature, maps, etc., write Department of Immigration, Ottawa, Can., or

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Dunn Block, Great Falls, Mont.
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Attach the

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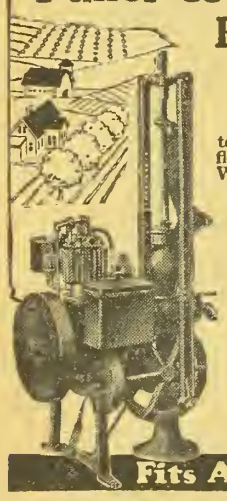

to *your* pump, and have a flowing well on your farm. Winter or summer, rain or shine, wind or calm, you will always have plenty of water.

Everywhere farmers are using this engine and are gladly recommending it to their friends. Why?

Read Catalog No. 17-A and you will see. Write for it TODAY.

Fuller & Johnson Mfg. Co.
Established 1840
Builders of Farm Engines
81 Weld Street
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The Strength of Organization

IN THE BRIEF span of forty years scientific advancement has brought the telephone from a crude experiment to one of the most nearly perfect of all mechanical devices. Engineering has mastered countless problems involved in the distribution of service. Construction has carried the telephone into the most remote corners of the country. Operative skill has combined the efforts of executives, scientists, engineers and commercial management. Together with vision and foresight these are the powers which, united, have made possible the accomplishments of the Bell System.

Nothing less than the finest loyalty, the most untiring devotion, the recognition of the great importance of their task, a fixed determination to serve faithfully; nothing less than this unified strength which has been so wonderfully displayed by the men and women engaged in the business of rendering telephone service could have carried the system through the great strain which began with the war and which has not yet passed.

Seldom, if ever, has public service required so long and so severe a test of a business organization. And never has an employe body responded with more hearty, united and loyal support. And they are still carrying on.

THE MOUNTAIN STATES
TELEPHONE & TELEGRAPH CO.

Mica Axle Grease

saves wagon wear and makes hauling easier. The powdered mica, mixed with high grade grease, provides a perfectly lubricated surface on hub and spindle. Keeps wheels smooth-running and true.

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Have you had trouble or misunderstandings over the division of water for irrigation? Do you know if you are getting all the water to which you are entitled? The Burnham measuring device is the answer.

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We manufacture a complete line of Irrigation Supplies, such as Flumes, Pipe, Gates, and other accessories. Write for catalogues and information.

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(Made in three sizes.) Operates with your 6 to 15 h. p. gasoline engine or small tractor, costing you only

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Ask today for descriptive catalogue, prices, etc.

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The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

God's Creatures.

Be kind to God's dumb creatures,
They are His gift of love;
He watches o'er their welfare
From starry skies above:
Not one escapes His notice,
Not one cries out in vain;
The great heart of the Father
Feels for each creature's pain.

The horse with plodding footsteps
Draws burdens year by year;
The lash, too oft his portion
Without one word of cheer:
His dark, dumb eyes are pleading
For just one kind caress;
Ah! he, like human creatures,
Feels pain and weariness.

The small domestic creatures,
Dependent on our care,
Should of our daily portion
Receive an ample share:
And if astray and homeless
They plead with hungry eyes,
Ah! feed them—for, remember!
God watches from the skies.

Be tender of God's creatures:
Each kindly act we do
Ennobles our own natures
And makes us brave and true:
We are the Father's helpers,
No creature is too small
For us to help Him rescue,
Who heeds the sparrow's fall.

—E. Louise Umlauf in Our Dumb Animals.

Harvest Season Meals.

High prices, hot weather, and harvest hands make up the summer trio of H's that cause the majority of farm women to look upon the harvest season as the bugbear of farm life. With the harvest season comes the annual question to the housewife of "What shall I cook?" In the past there was a tradition that a great array of food was expected and even demanded by the men. A spirit of rivalry often existed among the wives of the community to see which could serve the greatest quantity of food to the harvesters. This only helped to strengthen the traditional custom.

The up-to-date housewife is no longer pondering over the question of what to serve, for she is considering the question of what not to serve. It is absolutely necessary to have variety in the meals, but it is rank folly to have all the variety come in one meal.

Time, energy, and money is saved by the careful selection of well balanced menus for the harvest season. In planning the harvest meals it is well to remember that variety is a variable quantity on the farm and therefore should be handled with discrimination—worm it into all of the meals rather than into one meal.

The old-fashioned custom of serving two and often three desserts at one meal is foolish tradition which took time and energy that might well have been spent to much greater advantage along other lines. The practice also made a needless hole in the expense account and endangered the digestion of the workers. One dessert, and only one, is sufficient for any meal.

Another common mistake was the duplication of the same type of food. For example, the serving of potatoes and rice, or potatoes and spaghetti, meant a duplication of two starchy foods. Such foods may be and should be substituted for each other, but not duplicated.

Continual repetition of foods should be avoided, such as fried potatoes. Unnecessary "extra dishes" have no place in the meal planning. It is true that there is psychological reason for fried foods due to the length of time that they remain in the stomach: which gives a feeling of fullness and satisfaction a longer time than a more easily digested food does. But that is no reason why the fried food should always be fried potatoes.

Complex salads should be omitted as they require a great deal of time in their preparation. In their place, serve simple salads such as cottage cheese, and fresh vegetables.

During the busiest season the evening meal is apt to come rather late. Time may be saved by serving an earlier supper to the women members of the household which gives an opportunity of washing part of the dishes and leaves a maximum force available for serving the men quickly. By this plan the evening work is more quickly finished.

The evening meal should be anticipated and everything that can be should be prepared in the morning, thus conserving time, energy and fuel. Amounts necessary for the number served should be carefully estimated to avoid leftovers, especially in respect to vegetables and desserts. Cookies, cake, salad dressing beet pickles, etc., may be prepared the day before the first meals are served.

Today the housewife takes into consideration that the domestic work, and especially the meals, undoubtedly has a direct bearing on the efficiency of the field workers. Therefore the solution of the housewife's problem is just as important and just as necessary as the solution of any farm problem. Women realize the time and energy they have been wasting for years in the needless cooking at harvest time, and today the modern farm woman is coming to know the value of what not to serve.

A Refrigeration Pit.

If you are so situated that it is impossible to get ice during the summer months some sort of underground refrigeration for small quantities of food is a fairly satisfactory substitute. Here are the specifications for an underground refrigeration plant from J. P. Calderwood, professor of mechanical engineering, Kansas State Agricultural College:

These plants consist of a pit of about 12 to 24 inches in diameter, or corresponding square dimensions and some 10 to 20 feet deep. The material to be cooled is lowered into the pit by a small hand elevator, similar to the familiar dummy elevator used frequently in restaurants. The cooling effect that is produced by such an arrangement is comparable with that often resorted to in agricultural districts of lowering the food into the well.

The construction of the pit is comparatively simple. When applied to the home, the pit is located directly under the kitchen or pantry floor, as that location is most convenient. The elevator is merely a single or double shelf made to fit the pit and lowered by means of a rope cable. In many installations the weight of the elevator is counterbalanced to facilitate ease of operation. The lining of the pit may be of brick, tile, concrete or galvanized iron. The installation of the lining should be such as to make the pit water and vermin proof, and should prevent any surface moisture from entering.

This system of cooling is best suited to small installations, as the cooling effect is better with the smaller and deeper pits. Instances are known, however, where the system is used in some localities on a fairly large scale. The effectiveness of the larger installations is problematical and it is best to confine the system to household use.

Bed Bugs and Their Control.

CHAS. R. JONES, Colorado State Experiment Station.

The bed bug is a cosmopolitan household pest and is a disgusting parasite living almost entirely in human habitations when occupants are indifferent or careless, hiding away during the day time in cracks and crevices, coming out and feeding during the night.

The careful housekeeper generally considers it disgraceful if her premises are invaded by this pest. The presence of this insect is not necessarily an indication of carelesness or neglect, as it may often gain access in spite of the best of care. Nor is it a disgrace to have bed bugs, but it should be considered disgraceful to allow them to remain. People in traveling are very apt to accidentally pick up this pest, either on their person or baggage and thus introduce it into their homes, or a premises may become infested by migrating insects from some infested house.

The normal life of the bed bug is about three months. But without food, as in the case of vacant houses, it can live for a very long time. On account of its habits and concealment, it is usually beyond the reach of the ordinary remedies, such as pyrethrum, insect powders, etc., but it may be effectively controlled by means of a treatment such as applying gasoline, burning sulphur, or fumigation. The best and most effective method is by fumigating with hydrocyanic acid gas, and any premises may be completely rid of the pest by use of this method. However, there is danger of a reinfestation as above mentioned, and should this occur the cyanigan treatment would again have to be used.

Hydrocyanic acid gas is formed by the combination of sulfuric acid, water and potassium or sodium cyanide on the following proportions: Potassium cyanide, 98 per cent pure, 1 ounce; sulfuric acid, commercial, 1 fluid ounce; water, 3 ounces. In mixing this compound, these proportions should be carried out in detail, as by adding a greater or lesser amount of water, the amount of available gas that can be liberated from any given quantity of cyanide is reduced in proportion.

Determine the cubical contents of the premises desired to be fumigated, and carefully weigh out the materials in the above proportions, using at the rate of one ounce of potassium or sodium cyanide for each 100 cubic feet of space. See that all the windows are tightly closed and that the cracks in the doors are covered with paper. Arrangements may be made by the use of strings to touch off the fumigating loads simultaneously. However, in the ordinary dwelling, this is not necessary.

In preparing this mixture, the water and sulfuric acid should be mixed by slowly pouring the acid into the water. Never reverse this operation as there is great danger of the operator getting burned. While the solution is still hot, add the potassium cyanide. After proportioning the water and acid and placing the proper amount in each container, the cyanide should be put in a small paper bag and if the house is two stories, begin at the top and touch the loads as you go down.

The operator should take great care not to breathe in a room after the cyanide has been added to the water and acid. The house should be closed and a danger sign placed on the door. The fumes of this gas should be allowed to remain at least 24 hours and the premises should be so arranged that the windows and doors may be opened from the outside. After the house has been aired for at least one hour, a person may enter it without danger. Always use earthen jars as generators, as glass is too fragile and the acid will act upon iron or tin.

The above instructions should be carried out in detail relative to the proportioning, mixing and warning as to inhaling gas, as these proportions will give the maximum amount of gas that can be liberated from any given amount of acid and cyanide, and the operator

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should not breathe any of the fumes, as it is deadly poison and there is no antidote.

Carbon bisulfide is also a good fumigant and may be effectively used in insect control. However, there are certain points in favor of the hydrocyanic acid gas treatment, that is, the latter is generated without fire, is comparatively cheap, non-inflammable, and non-explosive, and does not tarnish silver nor injure household goods nor eatables; leaves no odors, is lighter than air and very penetrating. It can be used at any time during the night or day. It is fatal to all animal and plant life when applied in the proper proportions.

Rural Population Increases.

Statistics gathered through county assessors and compiled by the State Immigration Department indicate that Colorado's rural population has increased very materially in the past ten years, and in the principal agricultural districts has increased more rapidly than the urban population. This is just the opposite to what has occurred in the principal agricultural states further east, where census reports show that rural population has not increased nearly so rapidly as that of the cities, and in many districts has actually decreased since 1910. In the non-irrigated districts of eastern Colorado the rural population has increased very rapidly since 1910, and in some cases the number of farms under cultivation at present, as shown by assessors' reports, is more than double that of ten years ago. This is also true in many districts on the western slope, particularly in Moffat, Rio Blanco, San Miguel and Dolores counties.

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9689. Ladies' Waist.—Cut in sizes 36, 38, 40 and 42 inches bust measure. Pin tucks make a dainty trimming for the front of this new waist which adopts the popular oval neckline.

9421. Ladies' and Misses' Waist.—Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. This type of waist with its simple lines, neat roll collar and turnback cuffs, can be trimmed to suit the individual taste.

9283. Ladies' and Misses' Dress.—Cut in sizes 16, 18 years, 36, 38, 40 and 42 inches bust measure. A contrasting color note is introduced in the long stole collar and narrow belt.

9666. Ladies' One-Piece Dress.—Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The panel effect is not only confined to the waist, for it extends into the skirt and reaches to the hem.

8749. Ladies' Skirt.—Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. One of those straight ,full gathered skirts with center front closing, so popular just now, is illustrated.

8956. Girls' and Junior's Apron.—Cut in sizes 8, 10, 12, 14 and 16 years. This apron is simply adjusted by means of straps which extend over and button on each shoulder.

9669. Boys' Suit.—Cut in sizes 2, 4 and 6 years. Belted and pocketed in a new way is this straight suit, which is worn over a white waist.

9204. Girls' Dress.—Cut in sizes 4, 6, 8, 10 and 12 years. The scalloped collar crosses in surplice effect and narrows into a belt.

Western Farm Life: Enclosed please find $1 for your good paper, which I always read with pleasure and surely want it continued.—E. M. Johnson, Penrose, Colo.

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Woman's Views on Discontent Among Farm Wives.

(Continued from Page 4.)

share in the business affairs of that farm home, I don't care where it's at.

Give the up-to-date farm wife a fair, square deal, talk over business affairs with her, take her advice occasionally, whether it is good or bad, be the chummy comrade she used to think you were, kiss her like you once would have been glad of the chance to, 'specially if she's tired or out of humor and say, "Poor little wilted flower," or some such dear nonsense, "it's too bad—well, never mind, we will have things different some day, just see if we don't?" And then make your prophecy come true, bundle her and the kiddies up for a trip occasionally away from those four-square walls that have begun to look monotonous for a change of scene and a chance to compare other environments with her own.

While she is gone fix that broken-down fence, make those chicken coops, a whole colony of them, tack an old hoe or some sort of a foot scraper to the door step—if there happens to be a step—if not, make one and religiously use that scraper every time you enter her clean kitchen and see if she doesn't come back to you thoroughly convinced that, "North or south, east or west, HOME IS BEST."

I could tell you of the many, many hours the writer has spent trying to solve at least a few of the perplexing problems that continually stare us dry-landers in the face, with such persistent doggedness, that it is no wonder the faint-hearted ones cried out in desperation to end it all some way, in fact, any way or any where, just so it was not here.

However, I never wanted to give up, and I wouldn't agree to leave, until we could "read our title clear" to those acres of rolling prairie we had started out to conquer. But oh! how I did want to change the program, even ever so little, and I succeeded, to a certain degree, that at least made life more bearable.

My skeptical husband poked all kinds of fun at my feeble efforts to "do things"; suggested I hire a private secretary, get somewhere there was a demand for good talent, and all such nonsense, but I just kept on keeping on, spending some money, now and then, to his utter disgust, but I've made some of my dreams come true, perhaps with a greater degree of satisfaction than I ever could have attained had we never lived on a dry land farm in eastern Colorado.

I have always read quite a bit. If one reads good things it is time well spent, and its influence on one's life cannot be estimated in dollars and cents. When I find something good and applicable to myself I clip and save it, and mayhap pass it on.

A quotation from Emerson that I have found especially helpful is this:

In life's small things be resolute and great,
To keep thy muscles trained, knowest thou when fate
Thy measure takes or when she'll say to thee:
"I find thee worthy, do this thing for me!"

No matter if you are stranded on a dry land farm, perhaps that's just where fate would have you—

Pick up more than you can do, and DO IT.
Bite off more than you can chew, and CHEW IT.
Pin your faith to a star, and there you are.

From Another Woman.

I believe Mr. Johnston is mostly correct in his reasons for discontent of the women on dry farms. I would like to except the fifth reason, for too well we know what interest there is to pay, when notes are due, what crops are gone, and what cattle have been lost in one way or another. We understand so well the effort being made to make "ends meet" that we deprive our children and ourselves of comforts, yes, even necessities. Give us some way to earn "extra" money in our home. Don't say raise chickens and milk cows, you know we mostly support our families that way, but something that, without investment we can earn even two or three dollars a week. My! couldn't we make things look different with one hundred to one hundred fifty dollars a year!—Mrs. John Freese, Higbee, Colo.

A New Mexico Wool Pool.

Here in this county over 150,000 pounds of wool has been signed up and seven cars, representing wool from 20 different men, of this amount are already on their way to Chicago. All of the wool this year is being sent to the National Wool Warehouse of Chicago. And as this company will advance 50 to 75 per cent of the market value of each carlot shipment direct to the growers it means that those who need money to pay off shearing hands, etc., can get it. When the wool reaches Chicago it is unloaded, stored, insured, graded and sold.

In a recent letter from C. A. McNabb he stated that about 4,000,000 pounds of wool had already been signed up in this association and as the total wool clip of the state is somewhere around 20,000,000 pounds, it means that over 20 per cent of the state will be handled by the association this year.

Considerable opposition is being made to the Co-operative Marketing Association by the wool buyers as they realize that such an organization will within a year or two grow to the point where it will practically put them out of business. However, wool growers and buyers alike are beginning to realize that methods used years ago in handling wools are today out of date. The officers of this association are among the best wool growers in the state, and Thos. Goulding of Aztec is the member on the board representing San Juan county.—San Juan County (N. Mex.) Farm Bureau Bulletin.

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Judging Hens for Production.

High producing hens have width and depth proportionate to their length. They are broad through the back and shoulders, and the breast bone is parallel with the back bone. The breast bone of some hens makes a straight line from the front of the breast bone to the pelvic bone. Such hens lay few eggs, if any. There should be a great expanse between the pelvic bones and the rear end of the pelvic bone, which allows for a great amount of intestinal development. Some hens have no more intestinal development than contained in the bony cavity of the body, while other hens have more intestinal development back of the bony cavity than is contained in the bony cavity itself. Hens must have a great amount of intestinal development to lay many eggs. Intestinal development may be determined by the fullness and flexibility of the posterior. Many hens have full posteriors that are not intestinal development. In such a hen the posterior will be solid, not pliable, and the development is solid fat. Such hens are light producers.

The pelvic bones of high producing hens are wide apart, straight, thin, and pliable. High producing hens are hard-fleshed. This may be determined by the feel of the flesh on the breast. Many hens have flesh that is as hard as a pheasant's. High producing hens have good handling qualities with soft, flexible posteriors, but nicely tucked up. They have soft, flexible skin. The skin on many hens is very tight to the body and feels harsh. The handling qualities of a hen should never be overlooked, as it is the determining factor in egg production.

The hen's head tells much. High producing hens have large heads in proportion to the size of the hen, but not large enough to give them a coarse appearance. In fact, the head should indicate refinement, although not over-refinement. Over-refinement may be determined by the indication of lack of vigor—long heads, long, straight beaks, and sleepy eyes. High producing hens have broad, deep heads, fairly short, with short, stout beaks, and lean red faces. All lean-faced hens are not high producers, but fat, pudgy faces do not indicate high production.

The combs of high producing hens are always full of blood except when the hen is out of condition. Condition may be determined by the molt or state of health. The quality of the comb, that is to say, the smoothness, or velvety feel to the touch, is also a factor. Many people have the idea that early molting hens get into condition for heavy winter egg production, which is not true. The earlier a hen molts the fewer eggs she lays. Hens molt when they stop laying. The early molter, then, has nothing else to do but change her clothes, dress up, and look well. The heavy producing hen is very untidy in appearance for the greater part of the year. The early molter is the society hen. The late molter is the worker. Early molters take long rests; late molters take short rests. Hens that molt in October, November and December, will with proper care be in condition and laying again before hens that molt in July are likely to resume laying.

Hens lay the color out of their bodies. All yellow-skinned hens lay their color out. It is noticeable, first at the vent, then the beak, inside the mouth and out, and then the color leaves the legs. This process affects high producing hens to the extent that the vent, beak and legs become quite white or pink.

These are the more important signs of the laying hen. There are other points which may be a little more technical, but space will not permit further discussion.

Much data could be presented to substantiate the accuracy of the plan of judging hens for egg production, if there were space. The writer handled more than 20,000 hens in culling demonstration work in 1919, and has plenty of data covering tests that were made by the farmers to determine the accuracy of the work. Many communities in Idaho and virtually some entire counties adopted the poultry program of work through their farm bureaus, and conduct the culling work systematically.—Pren Moore, Extension Poultry Husbandman, University of Idaho.

Some Incubator Suggestions.

Poultry Department:

In the July 1 number of the Western Farm Life, I read your answer to A. E. W., New Mexico, concerning an incubator hatch. We have run an incubator for nine years and have an "Ironclad" such as A. E. W. used. Our experience with a hot water machine is to not supply a drop of moisture until the first egg pips, then steam them by laying a cloth saturated with hot water over the tray for half an hour. Too much moisture is just as bad as too little. The chicks grow too fast and at hatching time cannot turn over in the shell and so die.

Concerning his infertile eggs, he does not say what breed of chickens he has. Two males to thirty hens is plenty to insure good fertility if he has Leghorns, but is certainly not enough for the heavier breeds.—Anson Mekeel, Kersey, Colo.

Chicks Have Bowel Trouble.

I am having trouble with my little chicks with bowel trouble. I can't find anything that seems to do them any good. I feed very sparingly, but it doesn't seem to do. I have changed their food. I give them rolled oats for a few days, then changed to bread crumbs and cracked wheat; have given a little milk curd. Then I have boiled rice for them, but they keep dying very fast. I only give one of the feeds to them at a time and very little of that. Now will you write me at once what you know to give or do for them?—Mrs. T. E. T., Saguache County, Colo.

It would be easier to diagnose the trouble your chicks are having had you told us how they were hatched, whether they are running with hens or are kept in a brooder, their age, etc. As it is, we will be obliged to guess somewhat. If chicks are with hens, look for lice and get rid of them; a little vaseline daubed on the heads of little chicks; lice powder sprinkled lightly on bodies of larger chicks. Isolate all affected ones, withholding all feed for 24 hours, then feeding wet mash only for a day or two and only if hungry. Furnish plenty of drink, milk in addition to water. Feeding irregularly is never a good thing; feed growing chicks all they will eat all the time, and feed as great a variety as possible. If they are on range, scatter their feed over a large area so they will have to hunt for their meals; or feed in litter to make them work for it, but see that they get plenty. Feed sour milk, buttermilk or any kind if possible, using it as drink, also to mix the mash.

We have no treatment to recommend; isolation of the sick ones, a most thorough cleaning up of the surroundings, painting the coops and roosting quarters with a solution of Zenoleum, Creolin or other coal tar product, plenty of clean, wholesome feed mixed with exercise, will do more than medicines. If the chicks are suffering with a germ disease it may be a little time until you can get the best of it and the loss may be severe, but do not give up. Would be glad to have more particulars if the trouble continues.—W. E. V.

How Poultry Culling Pays.

Minidoka County, Idaho, through its farm bureau, has started on an ambitious program of poultry improvement, which carries with it the possibility of saving the people of the county more than $76,000 a year by the elimination of the cull hen. Meanwhile, they are learning how to produce hens that have no culls among them. A. B. Brown, executive committeeman for the farm bureau poultry project, has had no culls among his pullets for the last two years. Model poultry houses add to egg production. Mr. Brown's alarm clock turns on the electric lights every morning and starts the hens' working day at 5 o'clock.

"Poultry is one of the valuable assets of every farm in the county," says Mr. Brown. "There are 48,886 hens in the county. The culling campaign carried on by the state farm bureau shows 50 per cent of the hens to be unprofitable. Since it costs $3.11, according to our records, to keep a hen here, we have decided it most worth while to work toward weeding out the 24,443 cull hens in the county and put the money saved into our pockets. Figuring on the basis of the work already done here by the farm bureau, the counnty would be richer by $76,017.73 if all the unprofitable hens were disposed of. To date $3,517.41 has been saved and only a very small percentage of the people of the county have done any work toward the improving of their flocks by systematic culling and careful breeding.

"One of our farm bureau community workers, who has kept a very careful record, says his hens have paid for all the feed they have eaten and netted a good profit. He gives the figures to prove his statement: 'The entire cost of keeping my 200 hens was $824.75. The gross returns from the yard were $1,603.38, leaving a net gain of $778.63. The profit from each hen was $3.89.' "

The method of breeding started by the Hopewell community under the direction of Pren Moore, poultry specitlist of the university extension division, was explained by Mr. Brown thus:

"Four flocks of very good quality White Leghorns were found in Hopewell community and a community breeding circle was started among them. They were all of the same strain. When Mr. Moore visited one of these flocks in January he found every pullet from the mating a bird of excellent laying capacity. As soon as every breeding pen in the county is as carefully selected as this pen was, we will have no culling to do."

Mr. Brown was then asked about his new poultry house, and admitted that it was an improvement upon the old shack.

"It is a Woods type house," he said, "with an open front, 24x40 in size. At one end there is a granary 10x24; in the center is the big laying pen, 20x24, and at the other end are two breeding pens, 10x24.

"It is equipped with electric lights. I do not have to get up to turn them on. A switch is attached to the alarm clock, and turns on the lights when the alarm goes off at 5 a. m. They are turned on again in the evening and kept on until 7. The increased egg production has more than paid for the electricity used. The litter carrier saves a great deal of time. In the old house it took 20 minutes to clean a week's accumulation of droppings, with only 50 hens. In the new house it takes exactly 12 minutes, and there are 200 birds. Another time-saver my new house contains is a row of windows under the dropping boards at the back. This keeps the hens from scratching all the litter under the roosts making it necessary to rake it smooth every day. Self feeding hoppers are used for dry mash. These are filled once every two weeks andare kept before the hens at all times. The hoppers, along with nests and drinking fountains, are raised from the floor to leave all available floor space for scratching. To make the water as convenient as possible, I have a well with a pump in my house."

That Prairie Sod Disease.

Last summer there was an article in one country paper about a disease among chickens in the eastern part of Colorado. My chickens were always healthy so never paid much attention to it. But I believe I have some that have the disease now. I have found about half a dozen; they first went blind, were droopy and now their feet are swollen and there seem to be white blisters on them. Three died soon, but I have three now that are that way. They are about three weeks old. Can one cure them after they get it? What do you do to keep them from getting it? Also, what do you do to cure it?—E. F., Kiowa County, Colo.

Probably no other ailment of chicks has brought so many inquiries as the one you mention in your letter. These inquiries have all been answered in our columns and from time to time we have discussed this disease in separate articles. This leads me to suggest that it might be advisable for our readers to carefully file their papers for future reference. Information which is of no particular value today, as it was in your case, may be of great help tomorrow. We have never been able to prescribe effective treatment for this disease. For several years the State Agricultural College has been trying to find the cause for the trouble, but so far with no success. We feel quite sure of one fact, however, namely, that chicks kept, or allowed to run on prairie sod, are the only ones to contract the disease. We have never known a case among chicks kept on plowed ground. So, if this is true, we can offer a means of prevention, but no cure. Isolate all affected chicks; anoint affected parts with vaseline; if possible, remove all chicks to plowed ground.—W. E. V.

WHEN ALL ADVERTISERS demand their money's worth, all publications will provide circulation reports verified by the Audit Bureau of Circulations.

It is one of the mysteries of the advertising world that while all manufacturers demand verification of weight and quality in the material purchased, some of them still buy advertising space without knowing what they are paying for.

Such advertisers, however, are now exceptional. Most of them demand verified A. B. C. circulation statements before placing contracts.

In the case of Western Farm Life, the demand is immediately met. Western Farm Life is a member of the Audit Bureau of Circulations.

CANVAS AND RUBBER THRESHER BELTS
The Western Belting and Packing Co.
1751-61 Wazee Street, Denver, Colo.
Manufacturers of Oak Tanned Leather Belting, Suction Hose, Steam Hose Water Hose. Phones Main 5795, 5796, 5797, 5798.

Auto Parts Auto Repairs
Save money on your auto parts, repairs or accessories. We can supply most anything in the line of auto supplies. Mail orders given special attention. All we ask is a chance to serve you. A few automobile motors in good shape. Priced reasonable.
The Western Auto & Parts Co.
1220 Curtis St.—At Speer Blvd.
Phone Champa 4919 Denver, Colo.

We Fix Radiators
AND FIX 'EM "RIGHT"

Honey-Comb Cores installed in automobile, truck and tractor radiators. Write for price list and information booklet.
PARAGON AUTO RADIATOR CO.
1455 Court Place Denver, Colo.

Big Money Boring Wells
One Man One Team

Have water on your own farm. In spare time make wells for your neighbors. It means $1000 extra in ordinary years, double that in dry years. No risk—no experience needed.
Outfits for Getting Water Anywhere
Earth augers, rock drills and combined machines. Engine or horse power. *Write for easy terms and free catalog.*
LISLE MFG. CO.,
Box 743 Clarinda, Iowa

SHAVE! SAVE! COMFORT!

I've tested 'em all and I've found a real safety blade sharpener. The New Meehan with wonderful leather honing strop, sharpens Gillette, Durhum-Duplex, Enders and Keen Cutter Blades. Simple, quick. Reasonably priced. Satisfaction guaranteed. All edges, one insertion. Prepaid receipt of $3.00. Address
The Old Cutlery Man,
1110 Milwaukee St., Denver, Colo.

Tire Agent

We want one exclusive representative in each locality to use and sell the new Mellinger Extra-Ply, hand made tires. Guarantee Bond for 8000 Miles. (No seconds). Shipped prepaid on approval. Sample sections furnished. Do not buy until you get our Special Direct Prices. Write
MELLINGER TIRE & RUBBER CO.
Dept. 962. Kansas City, Mo.

FARMERS' AND STOCKMEN'S EXCHANGE

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

PLYMOUTH ROCKS

BARRED PLYMOUTH ROCK EGGS FOR SALE, $1.25 per setting of 15; $6.00 per 100. John M. Mischke, R. F. D. 3, Loveland, Colo.

LAYMORE BARRED ROCKS—EGGS $5.00 FOR 15. Baby chicks 50 cents each. Nebraska State Fair and Missouri first prize winners. First in Colorado in profit with over $70 each in 1918. J. R. Anderson & Son, Fort Morgan, Colo.

LEGHORNS.

GET WHILE THE GETTING IS GOOD—ABSOlutely purebred S. C. W. English Leghorn cockerels (April hatched). From imported 290-egg strain. Heavy winter layers. These are fine husky birds. None better; $5 each, 2 for $9. Will Brannaman, Lime, Colo.

RHODE ISLAND REDS

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

ANCONAS.

FOR SALE—10-WEEKS-OLD PUREBRED S. C. Ancona cockerels, bred from hens of a heavy laying strain, $3.00 each. Address, Mrs. Ves Laro, Maxwell, N. Mex.

SEVERAL VARIETIES

BLACK-WHITE CRESTED POLISH PEN, WHITE Wyandotte pen; classy stock. Champney, 2057 So. Broadway, Denver, Colo.

BABY CHICKS—NOW'S THE TIME TO GET A start with the best laying White Leghorns in Colorado, $16.00 a hundred; week old, $18.00. Reds and Rocks, $20.00. Denver Incubator Co. and Hatchery, 176 S. Broadway, Denver.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HOGS

FOR SALE—REGISTERED BIG TYPE DUROC Jersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

FOR SALE—DUROC JERSEY PIGS, BIG TYPE and good type; also Holstein bull ready for service. Geo. S. Turner, Canon City, Colo.

REGISTERED DUROCS AT REDUCED PRICES—Choice sows, bred for September farrow, $70. March pigs, $25. F. W. Ruppenthal, Lucas, Kan.

FOR SALE—REGISTERED BIG TYPE DUROC Jerseys, extra quality, Defender and Wonder brands, March boars. Clear Springs Farm, Route 1, Box 31, Golden, Colo. Phone Arvada 119 J2.

FOR SALE—A FEW REGISTERED DUROC boars left. Best blood lines available, such as Path Finder, King the Col, Good Enuff, etc. Three choice boars August 28 farrow by Orion Col. Price right for quick sale. C. Koebel, Hoyt, Colo.

BUY YOUR DUROCS AT WEANING TIME, AND make the big profits yourself. I have prize-winning gilts and boars a few weeks old sired by champions that should be worth several hundred dollars each this year. Write for prices. J. N. Caldwell, Willow Grange Farm, Littleton, Colo.

REGISTERED BIG TYPE DUROC JERSEY hogs. We are now taking orders for boars and gilts of March farrow for May and June delivery. Have one fall boar left. All sired by Orion Cherry King 15th, and J.. O. D. Joe Orion, out of the best berd sows. Write for prices. Money back if not satisfied. J. O. D. Ranch, Aroya, Colo.

CATTLE.

HOLSTEIN GUERNSEY HIGH-GRARE CALVES. Write E. Terwilliger, 289 Lake St, Milwaukee, Wis.

FOR SALE—ONE WELL MARKED REGISTERED Holstein bull calf. Loving White Wyandotte Farm, Siloam Route, Pueblo, Colo.

FOR SALE—REGISTERED SHORTHORN AND polled Durham bulls and heifers. One double standard 4-year-old roan real herd bull. Please don't write unless you want to buy. J. H. Held, Sterling, Colo.

REGISTERED HEREFORD BULLS—THIRTY bulls 12 to 24 months old, of the best Anxiety breeding, hardy and in good condition, with best of bone and ready to go on the range. One 2-year-old bull, full brother to champion cow at Denver, and a 5-year-old bull, the sire of most of the above. Priced for a quick sale. J. O. D. Ranch, Aroya, Colo.

SHEEP.

FOR SALE—REGISTERED SHROPSHIRE EWES and bucks. Some extra fine ones. A. M. Plumb Estate, R. F. D. 4, Box 47, Phone Red 27 R 2, Greeley, Colo.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

IMPROVED 800-ACRE COLORADO STOCK ranch, for sale; terms. Box 134, Kremmling, Colo.

WANTED—TO HEAR FROM OWNER OF FARM for sale. Mrs. W. Booth, H. P. Station, Des Moines, Iowa.

IF YOU WANT TO SELL OR EXCHANGE YOUR property write me John J. Black, 33d St., Chippewa Falls, Wis

WANTED—TO HEAR FROM OWNER OF GOOD farm for sale. State case price, full description. D. F. Bush, Minneapolis, Minn.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description and cash price. Morris M. Perkins, Columbia, Mo.

SHAWNEE, OKLAHOMA, CENTER OF A GREAT farming country; write for free agricultural booklet. Board of Commerce, Shawnee, Oklahoma.

REAL ESTATE WANTED—SELL YOUR PROPerty quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., Dept 11, Lincoln, Nebr.

OWING TO CHANGE OF OCCUPATION, I WILL sell my ranch and full blood Angus cattle and Percheron horses, or any portion of them. Address G. F. Lucore, Arriba, Colo.

TWO HUNDRED FORTY ACRE IRRIGATED mountain ranch, partly improved, crops, implements, stock, furniture, $10,500. Open land adjoining. Box 2M, Western Farm Life, Denver, Colo.

FOR SALE OR TRADE—GROCERY AND MARket in most prosperous mining town in Colorado; approximately $20,000 deal and all clear. Will trade for improved farm. Box 218, Breckinridge, Colo.

FOR SALE—408 ACRES, 160 IN HAY AND grain, rest pasture; good house and outbuildings; good water right. Horses, tools and 30 head cattle. For full particulars write J. D. Steiner, Aspen, Colo.

257 ACRES GRAIN AND STOCK RANCH IN Gem County, Idaho, nine miles from railroad. Now in grain; fair buildings, legal fence. Never failing springs and run; $3,000. Harry Fordyce, Route 8, Dayton, Ohio.

FIFTY-TWO ACRES, PATENTED, 9 in CROP, 20 tillable, 35 young peach trees, water level 35 ft., deepest pumping 50 ft.; fine for bees, hens, garden, store. On Winkelman road, 10 miles south of Globe. F. H. Chadwick, Box 1813, Globe, Ariz.

WRITE FOR FACTS ABOUT WYOMING LANDS; complete, authentic information on agriculture, dairying and live stock opportunities in irrigated and non-irrigated districts. Low priced, reasonable terms; good roads, schools and markets. Wyoming Immigration Commission, 324 Capitol Building, Cheyenne, Wyo.

WE HAVE BLACK LANDS FOR COTTON AND grain; loam lands for diversified farming, sandy loams for sweet potatoes and peanuts; grazing lands for live stock, and lands suitable for special crops, fruits or vegetables, either improved or unimproved, in small or large tracts. Write just what you want, and give us a chance to furnish it. Railroad Farm Bureau, San Antonio, Tex.

ATTENTION STOCKMEN — WE HAVE TWO stock ranch bargains. Just what you are looking for; each ranch comprises 320 acres deeded land with substantial improvements and large acreage under irrigation, and in alfalfa, timothy, clover hay, unlimited outside free range, with 4,000 acres of leased land under fence for fall pasture. These ranches are located three miles apart, 125 miles from Denver. Good shipping point, big money makers. Prices $12,000 and $13,600 on good terms. See us at once for these. Reynolds, Covey & Reynolds, 625 Exchange Bldg., Denver, Colo.

EIGHTEEN PRIME MILCH COWS, FINE TEAM, 5 shoats, 50 hens and excellent line of machinery go with this 100-acre farm; 85 acres tillable, some alfalfa, 15 acres timber, 400 tree sugar-bush, 2 large basement barns, cemented floors, 22 stanchions; 9-room house, good cellar. Running water in buildings. Only ¾ mile to railroad, school and creamery. For quick sale owner makes price $8,000, on very easy terms. For further details regarding this and other bargains write Coughlin's Farm Clearing House, 121 So. Warren St., Syracuse, New York. The largest in New York State.

RANCH BARGAINS—172 ACRES MOUNTAIN ranch, good four-room house, large garage, barn for four head of horses, cow barn for seven head, good chicken house, other necessary outbuildings; 50 acres in hay, 12 acres oats and barley, some timber on the place, plenty of grazing land. On main road and mail route. Price $5,750; $3,000 down, terms on balance. Immediate possession. You, and not I, will be the loser if you do not call in or write me before buying. I am selling farm properties exclusively of all kinds and descriptions and I have an exceedingly large number of exclusive listings of mountain ranches, stock ranches, irrigated and non-irrigated, improved and unimproved, and choice garden tracts and country homes, well located with excellent water rights, choicest of soil, priced right, and remember, you are dealing with one who knows land and land values. I am selling my properties on their own merits. You will find them just as represented. Call in, phone or write for particulars or appointments. I have some very fine properties in the city of Denver to trade for farm property, both large and small, and other city property for farm property. See Charles, with Ehrenkrook, Phone Main 8104, 308 Ideal Building, Denver, Colo.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WRITE FOR DELIVERED PRICES ON CEDAR posts. Pay after unloading. J. B. Overton, Sagle, Idaho.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

RAILWAY MAIL CLERKS NEEDED EVERYwhere—$150 month, experience unnecessary. For free particulars, write Modern Civil Service Inst., Dept. 455, Denver, Colo.

BIG MONEY AND FAST SALES—EVERY OWNer buys Gold Initials for his auto. You charge $1.50, make $1.35. Ten orders a day easy. Write for particulars and free samples. American Monogram Co., Dept. 114, Glen Ridge, N. J.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

RAZOR HONING, 50c; SHEARS, BLADES, 2½c and 5c; hand finish, good workmanship. M. L. French, Fremont, Nebr.

LISTEN—I CAN PUT A STOP TO ALL YOUR binder and header canvas trouble. Send at once for literature. My guarantee is outstanding. Address G. F. Lucore, Arriba, Colo.

HONEY.

"THEBESTO" ROCKY MOUNTAIN HONEY, light colored, thick, fine flavored; per can, five pounds net, postpaid, anywhere west of Ohio river, $1.50. Send remittance with order. The Colorado Honey Producers' Association, Denver, Colo.

TANNING.

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

HATS CLEANED.

OLD HATS MADE NEW. S. M. BELWOOD, 1542 Court place, Denver.

PATENTS.

PATENTS—BOOKLET FREE. HIGHEST REFERences. Best results. Promptness assured. Send model or drawing for examination and opinion. Watson E. Coleman, Patent Attorney, 624 F st., Washington, D. C.

MACHINERY.

FOR SALE—CASE THRESHING OUTFIT, RUNning order, complete. Address, Albert Frey, Weldona, Colo.

IMPORTANT — WHOLESALE IMPLEMENT, farm machinery and motor truck company, can use the services of several practical farmers with car to call on farm trade on leads furnished by office. Big pay, pleasant work. Investment necessary. Box 2-C, care Western Farm Life, Denver.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

AUTO AND TRACTOR SCHOOLS.

THE DENVER Y. M. C. A. AUTOMOTIVE School guarantees satisfaction in teaching these well-paying trades: Auto and Tractor construction and repair, oxy-acetylene welding, vulcanizing (including truck pneumatics), and after Sept. 1, storage battery building. Day and night; School backed and supervised by Denver automobile industry. 600 students last year. Our object is service, not money-making. We charge less and give more personal attention. If you are mechanically inclined, write for descriptive booklet.

Farm Bureau Campaign.

Starting the latter part of July, there will be held all over the state of Colorado a campaign to increase the membership in the Farm Bureaus. The Farm Bureau idea, while comparatively new, has so universally proved its necessity and value that it can now solicit membership on past achievements and does not have to go on any theoretical promises as to future accomplishments. More and more the progressive and wide-awake farmers are coming to realize that no agricultural county can afford to be without its live Farm Bureau. When you are solicited for membership, be prepared to back the work under way now, and that to be undertaken in the future, with your dollar and continued support. You won't be able to escape the benefits of a live wire Montrose County Farm Bureau, so don't try to "ride free."—Montrose County Farmer's Exchange Bulletin.

Livestock Field Notes.

Those interested in breeding purebred Shorthorn cattle will find it to their interest to read the announcement of W. A. Dickens of Longmont, Colo., in this issue. He has the famous Sultan breeding and is sparing no expense in raising the standard of his herd to the highest degree.

If in need of advice, ask Western Farm Life Service Bureau.

REGISTERED BIG TYPE DUROC JERSEY HOGS

Am offering some good Spring Gilts and Boars. Also some good fall gilts. Write for prices and breeding.

August F. Borgmann,

R. F. D. 4. LONGMONT, COLO.

Bargains in Bred Sows

20 yearling sows bred to farrow in August and September, priced to sell. All bred to our prize winning Crusader, winner at the Denver show. Shipped on approval and guaranteed.

"Daly's Durocs," Cambridge, Nebr.

FOR SALE

Beginner's young herd of REGISTERED HOLSTEINS, consisting of nine females, herd bull yearling and bull calves.

W. B. & E. B. Downs,

R. F. D. 1. Yuma, Colo.

COL. H. C. JENNINGS.
Purebred Livestock
AUCTIONEER
Also conduct Sales of Real Estate.
534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

WILLIAM UPP
Livestock Auctioneer
Purebred Hogs a Specialty.
DEER TRAIL, COLO.

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

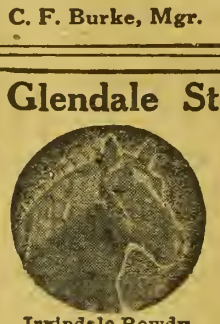
Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.

C. F. Burke, Mgr. Pueblo, Colo.

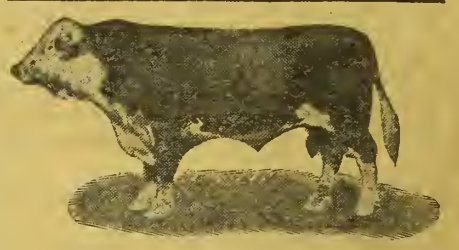
Glendale Stock Farm



Irvindale Rowdy Grand Champion Belgian Stallion Chicago, 1917, Denver, 1918 and 1919

Breeders of
BELGIAN HORSES
and
POLLED HEREFORD CATTLE
Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.



Verdun Fairfax, 547803.
FOR IMMEDIATE SALE.
Six young bulls of Fairfax breeding, $300 to $500. Two choice herd bulls, and Fairfax Heifers. Also few choice heifer calves. All stock disease free, and guaranteed.
Prompt Attention to Inquiries.
SNEFFELS LAND & CATTLE CO.
RIDGWAY, COLO.

MILKING SHORTHORNS.
All Cows Officially Tested. 125 in Herd.
Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.
THE BONVUE FARMS CO.,
Stockyards, Denver, Colo.

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions. Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

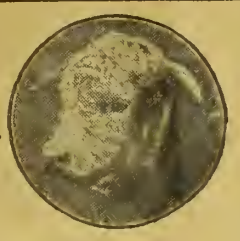
BEAU ASTER

FULSCHER & KEPLER
Holyoke, Colo.

Glenrose Farm Herd
REGISTERED DUROC JERSEY HOGS.
Bred Gilts and Weaned Pigs. Also a few good boars for sale. All big-boned.
R. C. VAN SCOY & SON,
Highland Station, Route 5 Denver, Colo

REGISTERED
JERSEY BULLS
I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.
Come and inspect, or write me.
H. J. VAUGHN, KIRK, COLO.

Registered Herefords



2 LOADS COMING 2-YEAR-OLD BULLS.

3 LOADS YEARLING BULLS.

These are all Extra Good.

Write us about bred heifers and cows.

We are offering some of our good females that will go well in any good herd. If you are starting in the Registered Hereford business see us. We can help you.

Hereford Corporation of Wyoming

Box 876, Cheyenne, Wyoming.

DENVER OFFICE: 406 LIVESTOCK EXCHANGE BLDG.

RAYMOND S. HUSTED, Manager.

DeWITT HEREFORDS

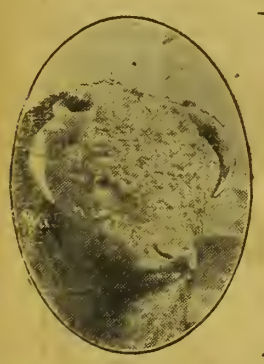
HERD BULL—MISCHIEVOUS JR., by THE HEIR

His dam is Mischievous 3rd, a full sister of BEAU MISCHIEF and the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of
GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER



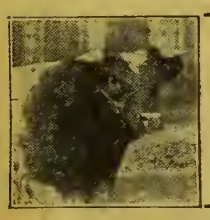
L. G. Davis Herefords ANXIETY BRED

Sires in Service:
The Great BEAU CARLOS 2nd
BONNIE WESTON, by Bonnie Brae 15th
WYOMING 4th, Champion Senior Yearling
Denver, 1919.

Have for sale 20 Heifers, 10 to 15 months old.
Our own breeding.

We have a few High Class Yearling Bulls For Sale.

L. G. DAVIS, Saratoga, Wyo.



GETTING CLOSE TO THE TRUTH

A well-known breeder of beef cattle of another breed was dispersing his herd. Talking to several intimate acquaintances when the sale was over he said: "If I ever go into the business again I will breed Shorthorns." Asked why, he said: "Because there's a man on every fence post who wants 'em."

AMERICAN SHORTHORN BREEDERS' ASSOCIATION,
13 Dexter Park Avenue Chicago, Illinois

Buy Some Good Duroc Pigs Now

Boars or Sows, by Grand Champion Edgemoor Cherry Chief 2d.
They cost less when young. Write for list.

Colorado Agricultural College, Ft. Collins, Colo.

Registered Duroc Jerseys.

Edbrooke Durocs - Green Acre Farm

My Herd Boars Are Defenders of Col. Breeding.
Green Acre Defender 166505. Edbrooke's Defender 165263
The Biggest of the Big Type.
My Sows Were Prize Winners Denver 1920.
The Better Your Stock, The Better Your Returns.

H. W. J. Edbrooke, Prop., 6th & Wadsworth, Denver

WALLIE FARM REG. HOLSTEINS

State Milk Record

Established by Mystic Polkadot Lottie, junior 2-year-old, 540.4 lbs. milk in seven days. Best day's milk 83.6 lbs. Fourteen other excellent A. R. O. cows developed recently. All records made without fitting or forcing.

A number of wonderful records will unquestionably be made on these cows at next freshening. Take advantage of this fact by buying a Wallie Farm bull calf now. A few 2-year-old heifers for sale.

Herd Sire KING JOHANNA SEGIS PONTIAC
"His sisters have broken over 100 world's records."

W. G. Foster, Owner, 4800 So. Penn.
Phone Englewood 122, Denver.
Be sure to attend Holstein Breeders' Picnic, Palmer Lake, August 6th.

MILK RECORDS

Do Not Replace Straight Bates Shorthorn Blood

FOR

Straight Bates Shorthorns are the "foundation source" of the Milking Shorthorns of England and America.

The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

Straight and Polled Shorthorn Cattle

Valentine's Last X12316 452005 at head of beef herd. Claywood White 427350at head of milk type.

STATE INDUSTRIAL SCHOOL
Golden, Colorado

H. C. DENNIS, Auctioneer

FORT MORGAN, COLORADO

Registered Shorthorn and Jersey Cattle
Real Estate Sales Conducted. I can sell your real estate if it can be sold.
Wire at my expense for dates.
Phone: Res. Morgan 155J; Office Morgan 15

Mr. Progressive Dairyman,
Creamery County, U. S. A.:

Dear Sir—

We thank you for your inquiry as to whether we have any sons of SIR JOHANNA BESS SEGIS at dairyman's prices. We have four priced from $125 to $175, and we are glad to tell you about one ready for service. This will show you the quality of our offerings in this range of prices.

MONTROSE COLORADO PVR PAHGRE VALLEY RANCH QUALITY

No. 79 is ten months old, more white than black, weighs 850 pounds and is a show calf. His dam is a 14-pound 3-year-old granddaughter of Colantha Johanna Lad. Her dam made a record of 23 pounds at nearly ten years. Both dam and granddam weigh 1,800 pounds, both are very good individually. The dam has produced a 15-pound 2-year-old daughter. This calf will certainly show his value in your herd of high grades. He would improve many purebred herds. The price of this calf is $175 crated ready for shipment. We know that he will make you a big return on this amount.

If you were at the barbecue at Arden Farms, St. Paul, June 2, you saw SIR BESS in the parade with COUNT and PIEBE. His size and conformation were remarked by all who saw him. His length, depth, and breadth of body are wonderful, and of course he is straight as a string. We have recently sold a half interest in SIR BESS to Mr. Hackney, who now has him in service at Arden Farms, where he is having an opportunity such as only Arden Farms can give him. This will bring SIR BESS to the front doubly fast and you may be sure that by the time you have granddaughters of his for sale his name will add immensely to their value.

SIR BESS' grandsire and sire are both champions and he himself has already sired a champion. His sire is PIEBE LAURA OLLIE HOMESTEAD KING, "The Present-Day Sensation," whose daughters have surpassed the daughters of any other sire as 2-year-old milk producers. SIR BESS' dam is the best individual daughter of KING SEGIS PONTIAC COUNT, "The Marvel of All Sires," whose daughters have broken 140 world's records. She has records at four years of 32 pounds butter, 652 pounds milk in seven days, and 1,059 pounds butter, 23,546 pounds milk in the year. You can find no greater combination of showring and production backing than that which produced SIR BESS.

No cow in our herd weighs less than 1,500 pounds. They are outdoors in zero weather as well as in summer. They see their stanchions only at milking time. This means a hardy, vigorous herd, and federal supervision guarantees that it is clean.

We take absolutely all the risk of shipment. If you are the first man to order this calf we guarantee that he will reach your nearest railway express station right in every way. Whichever way you buy him—at the Montrose price of $175, or at a delivered price which we shall be glad to make you, we take all the risk. We advertise that we are as close to you as your nearest railway express station and we mean it. When the calf reaches you, you may send him back at our expense if you want to. Can you think of a better proposition than this—a dandy calf, of royal blood, from a clean herd, subject to your satisfaction, and we to take ALL the risk?

Very truly yours,
Pahgre Valley Ranch, Montrose, Colo. J. B. Leach

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WESTERN FarmLife

Vol. XXII. *Denver, Colorado, August 15, 1920.* *Semi-Monthly*

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A Western Magazine for Western Farmers and Stockmen

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The Montana Experiments With Sunflower Silage

PRACTICAL TESTS IN GROWING AND FEEDING THE NEW CROP

Russian sunflowers on P. I. Lewis farm, Montrose, Colo.

GROWING and Feeding Sunflowers" is the title of bulletin No. 131 issued by Montana Agricultural Experiment Station in which this subject is handled more extensively than has yet been attempted by any of the western stations. The bulletin consists of two sections, one part devoted to growing, by Professors Alfred Atkinson and J. B. Nelson, and the second part to feeding sunflowers by C. N. Arnett, W. E. Joseph and Oscar Tretsven. The historical material is quite interesting and is based on the research made by Dr. Wylie of the Bureau of Chemistry and published in 1901 by the Department of Agriculture.

According to Dr. Wylie's information, the earliest cultivation of the sunflower was carried on in Spain about the middle of the sixteenth century. A description published by a Flemish botanist about that time referred to the plant as of Peruvian origin. It is believed that the Spanish explorers brought the plant to the mother country from South America, where it had been highly developed by the aboriginal inhabitants. Dr. Asa Gray reports that the plant was mentioned by Champlain, whose activities are recorded in the early history of North American exploration under date of 1615. Dr. Gray found the Indians in the Georgian Bay district (Canada) cultivating sunflowers and using the seeds for food and oil, the latter being made from crushed seeds and being used by the Indians as an ointment for the hair.

It is further stated that, as early as 1830, sunflower oil was produced in commercial quantities in Russia and that the production of the crop has been an important industry in that country for many years.

These historical facts are in line with what has been brought out in former articles in Western Farm Life, one being a report of the New Mexico station concerning the use of the crop by the Indians, and the other by Dr. L. S. Dijkstra, formerly of Colorado, who recently returned to his native country, Holland, on the use of sunflowers in European countries.

Contrary to what has been generally accepted in the west, the use of the feed is by no means new, reports having been made by the Maine Experiment Station as early as 1896, the Vermont Station in 1893, Canadian Experiment Station same year, and the New York Experiment Station in 1883. It is also brought out that the Nebraska Station in 1889 and in the following year Colorado carried on a little work with sunflowers on which, however, no reports were published.

The historical matter in the Montana bulletin, while interesting, is not of any great value to the farmers, who want to know principally what the crop will do under certain climatic and moisture conditions. The bulletin sets forth that some tests were made on dry lands in 1918, when 30 acres were planted on thirteen different farms in eight different counties of Montana. This was one of the years of severe drouth, in spite of which there was an average yield in this dry land test of 10.3 tons of silage per acre. No complete records are given on the individual tracts, but the general results are encouraging to the dry land farmers.

The general line followed in the growing tests included yields, methods of planting, comparison of drills and hills, and date of planting. On the point of yield it is brought out that a crop planted May 21, 1915, in drills 20 inches apart, using 12 pounds of seed per acre, produced 36.8 tons of green cutting in 131 days from planting. That season was unusually wet and no irrigation was given. The crop was cut September 29. At the time of cutting the crop was in the middle dough stage.

The following season the same method of seeding was followed in drill rows, same rate of seeding also, and the crop was put in June 6 and irrigated July 24. Harvesting was only 98 days after planting, the season having been warm. The yield was 31.07 tons per acre. These tests showing such large yields resulted in a definitely planned series, a full report of which is given in the bulletin. The yields in the tests made in 1917 and 1918 of green forage per acre varied from 23 to over 44 tons of green forage per acre. The highest yield was from the crop planted in rows 36 inches apart, which gave an average of 44.1 tons of silage material per acre. This crop was found very hard to harvest. The stems were fine and the heavy heads caused the stalks to become badly tangled.

The tests made of planting in hills, the same as corn is planted, shows very little variation in yield from the results in drilled rows.

Date of Planting Tests.

In the date of planting tests it was brought out that the heaviest yield came from the earliest planting, although the early planting was very slow in coming up. The crop planted April 29, for example, required twelve days to get through the ground, while planting on May 29 the young plants were up in five days, on June 4 planting in four days, and planting on June 10 in three days. This is significant, especially in the higher altitudes, where a short growing season prevails. In this date-of-planting test the yields ran from 21.5 to 38.7 tons per acre.

The conclusion reached is that, based on four years' experience, the most practical way of planting the seed is with the ordinary grain drill. It is advised that a sufficient number of feed outlets should be stopped up to permit the planting only in rows 30 to 36 inches apart. The drill should be regulated, so that the seeds will be dropped 4 to 5 inches apart in the row. Planting in this way, rows 36 inches apart and seeds 4 to 5 inches apart in the row, requires 5 pounds of seed to the acre on the average. This is for irrigated lands. These tests were made both at Bozeman where the experiment station is located, and the Huntley sub-station. At the latter station the highest yield was secured from rows planted 20 inches apart, while the Bozeman test showed the highest yield when the crop was planted in drill rows 30 to 36 inches apart. Sunflower seed matured only once out of the four years at the Bozeman station.

It is brought out in that portion of the bulletin devoted to feeding, that sunflowers in Montana have withstood a temperature of 27 degrees F. with practically no ill effect. The sunflower silage was used in winter feeding beef calves, dairy cows, breeding beef and dairy bulls, breeding ewes and to a limited extent, to brood sows. These experiments were all carried on during the winter months, but it is pointed out that there is no reason why sunflower silage could not be used to good advantage on many farms to supplement pastures in dry seasons, or when they become inadequate in the fall.

No difficulty was experienced in getting cattle or sheep to eat sunflower silage, although some animals required a few days to become accustomed to it. Chemical analyses of the silage were made with samples taken at different depths of the silo, showing the following results:

Dry substance	21.4
Crude protein	2.1
Crude fiber	6.8
Nitrogen free extract	10.4
Ether extract	0.5
Ash	1.6

Tests were also made to determine the digestibility of sunflower silage, the reports by Doctors Joseph and Blish being given as follows:

	Total dry substance.	Crude Protein.	Crude fiber and nitrogen free extract.	Ether extract.	Nutritive ratio.
Digestible nutrients in 100 lbs. of sunflower silage	21.4	1.24	10.13	0.37	9.8
Digestible nutrients in 100 lbs. silage from well-matured corn	26.3	1.1	15.00	.70	15.1
Digestible nutrients in 100 lbs. silige from immature corn	21.0	1.0	11.40	.40	12.3

These figures show that 100 pounds of sunflower silage made from plants 5 per cent in bloom, compared with a like amount of silage made from immature corn, contains approximately the same total dry substance, that the sunflower silage is 0.24 pound higher in digestible crude protein; that there are but 1.27 pounds more digestible crude fiber and nitrogen-free extract in the corn silage, and that the ether extract is practically the same. The proportion of digestible crude protein to digestible carbohydrates in the sunflower silage is 1:9.8, while in the corn silage it is but 1:12.3.

An Oklahoma Experiment.

Following from The Kansas City Star gives details of an experiment in feeding sunflower silage recently completed at the Oklahoma Agricultural College:

Sunflower silage, when combined with corn, cottonseed meal and alfalfa hay, is an important feed in producing beef.

Sunflowers will be an important crop in the future in making beef on Oklahoma farms, especially on the poorer kinds of land.

Those are two conclusions reached at the Oklahoma agricultural experiment station as the result of a recent test in which is was sought to obtain the value of sunflowers as silage and in which darso, a new sorghum developed at the station, was compared to the sunflowers. Prof. W. L. Blizzard of the animal husbandry department was in charge and H. M. Garlock, senior student, handled the details.

Fourteen calves used in the experiment were divided into two lots, one receiving the sunflower silage, ground corn, cottonseed meal and alfalfa hay, the other receiving the darso silage, instead of the sunflower, and the corn, meal and hay.

The calves were out of high grade Shorthorn cows and were sired by registered Hereford bulls. They were selected as nearly as possible for uniformity of type, quality and feeding capacity. They were calved the spring before, weaned in October and were being fed silage and hay when purchased at the Chilocco Indian school.

The sunflower silage was made from Russian tame sunflowers planted in the forepart of April with a corn planter in rows thirty inches apart and about six inches apart in the row. They were grown on rather poor upland where kafir and corn burn out every year. The third week in July, when they were ensiled, the heads were passing from the milk stage. A corn binder was used to harvest them and they were hauled and cut the usual way. Considerable sap was found in the stalk and milk in the head but some water was added. The yield was about five tons to the acre.

The silage packed much tighter than darso, cane or corn. There was a little hesitancy at first on the part of the calves in taking to the silage, but that did not last long, and once started, the animals didn't miss a meal.

The sunflower fed group reached its capacity for silage on the nineteenth day of the 150-day test, but when the amount was decreased the animals appeared to eat as readily as those fed the darso. The calves ate the sunflowers with relish and the silage had no bad effects other than causing an apparent increase in urine and a slight tendency to scouring, which was not great enough to cause trouble.

The droppings from the sunflower group showed very little grain the first thirty days and never at any time as much as the darso silage lot. The calves on sunflower silage ate the more salt. The last fifty days three of the steers were slightly bloated at different times, but ate regularly and did not appear to gaunt or scour. During the entire period none of the steers was off feed and were given all they would clean up regularly.

The hogs in the lot fed the darso silage were more nearly satisfied and showed larger gains than those following the sunflower group, it was noted.

The seven Herefords in the sunflower group were fed 150 days, with feeds valued as follows: Corn first 120 days, $1.57, final thirty days $1.80; cottonseed meal $72 a ton, alfalfa $25 and silage $8.

Each steer gained 2.24 pounds daily, or a total gain of 335 pounds, on a daily ration of 11 pounds of corn, 1.07 pounds of meal, 13 pounds of silage and 2 pounds of hay. The cost per hundred pounds of gain was $20.77.

The total cost per calf at the Kansas City market, including labor, interest and shipping, was $115.95, and the steers sold for $15.50 the hundred, or $117.72 each, making the net returns per calf $1.77. The net pork return per calf was $2.26. The shrink was 5.3 pounds per head and the dressing percentage 52.54.

Telling the Professor About the Sweet Ranch

SCIENTIFIC AGRICULTURE EXEMPLIFIED AT FOOT OF MT. SOPRIS

ALVIN T. STEINEL.

MY Dear Prof.: Last month I wrote you a note calling attention to an editorial in Western Farm Life headed "The Sweet Ranch." I knew you would be interested in what your friend Lou Sweet and his son, Stuart Sweet, are doing at Carbondale, Colo., because you visited that ranch some years ago and you are familiar with its beginnings and with the plans that are being worked out there. For that reason you will wish to have more details which I am able to give you now, after a visit to the ranch. I intended to write you all about it anyway, for old times' sake, but am impelled to it now by more than personal considerations, because the program on the Sweet Ranch is important to agriculture in the widest sense of that term.

I presume you read the article in The Saturday Evening Post by Forrest Crissey, May 29, issue, entitled "White Lights and a Lean Larder," referring to the cityward movement of farm labor and farmers' sons? Even if you did not I know you are familiar with agricultural conditions all over America and are aware that the food problem is a serious one. Here is a statement from Crissey's article that sums up the situation:

> This straw ballot in the form of a nation-wide survey by the Department of Agriculture reveals the facts that the productive punch of the farm is being sapped by the insatiable demands of industry and that, if this leaching process is not stopped before long, agriculture is going to be bled white and the frolicking city dwellers are going to stop the cabaret jazz dance long enough to inquire: "Where is the food?"

Of course, if we wait until hunger drives us to action it will be too late. If the farmers fail to realize the seriousness of the situation and simply let up on production without bending every effort to keep up with the game, the result will be doubly disastrous—no bread for the city man and no income for the farmer. Fortunately that is not the attitude of the majority. At any rate out here we are doing the same as we did during the war—going to the limit of our capital and our facilities.

That is, however, not the only point I wish to bring out. Here is the story: The real progress that counts in the long run is that which our farmers are making along lines of economy of production; that is, making each acre produce more for the same amount of seed; changing a field from a thirty-fold to a sixty and one hundred-fold harvest. That is what I saw exemplified on the Sweet ranch—crop rotation, upkeep of fertility, farm accounting, management of labor, substitution of machinery for hand labor where the economy of it is proven; getting full duty from water; developing every natural resource including the grass; utilizing the water, sunshine and atmosphere of the higher altitudes to the fullest advantage in the production of quality grains, roots and grasses. This is the sort of farming that is truly scientific and therein lies the remedy for our food shortage—more per acre, not more acres.

You will remember Mount Sopris, the magnificent snow-capped veteran of the Rockies who raises his white crown into the clouds and broods with fatherly and meditative care over the silver and green landscape that spreads out fanlike from his lower slopes. At his base are two streams that fork to the right and left of Old Sopris. Looking upward on the right is the Crystal river, as clear as its name; to the left the Roaring Fork tumbles over the rocks. At Carbondale these streams join, forming a valley, perhaps a mile wide. Above this are successive benches in formation characteristic of nearly all of this Western Slope country. Upon the first green carpeted floor about 500 feet above the Crystal river and just above its junction with the Roaring Fork lies the 2,000-acre Sweet ranch.

The manager's residence, now occupied by H. H. Simpson, former county agent of Boulder county, with whose work in developing Minn. No. 13 corn you are familiar, stands in the valley, amid surroundings that are enchantingly beautiful. The background is a cedar crowned hillside; a steep ridge so smothered under the dark, velvety green of the cedars that its rocky outline is softened to a pastoral tone. Immediately in front runs and rushes the swift Crystal river. Beyond is the red road and that is enfiladed by a mountain of red sandstone, sometimes a brilliant terracotta, again a fiery crimson and at dusk carmine with a shimmer of blue. The colors are vivid in the light atmosphere, the sunshine brilliant and vegetation responds wonderfully to these favorable climatic conditions.

In our inspection of the ranch we began at the beginning—the headgate of the ditch seventeen miles up the Crystal river. The water is siphoned under the road and in more than one place it is carried across gulches by siphons and conduits of Oregon fir. It serves two other ranches on the way down the Crystal valley, though it was built primarily for the Sweet ranch. At the point where it enters that property its first duty is to irrigate several large areas planted to pasture mixtures, the foundation of which is bluegrass. These pastures are getting a good start. The grasses have been sown on the raw sagebrush land, along slopes that are easily flooded from the irrigation canal that skirts the rim of the mesa.

Why the pasture in a mountain country where there is free range on public lands and summer grazing on the United States Forest?

"Preparing for the future when the range privileges will be restricted and when our stock will be of a quality that justifies keeping them on the home ranch the year round," explained Stuart Sweet, who has charge of the livestock, which includes Shorthorn cattle and Duroc hogs.

Summer range is available on the higher slopes in the Mount Sopris National Forest, hardly ten miles away, and this short drive is an advantage. Nevertheless, there is need for the irrigated pastures, as the grass thus forced makes a rapid and rank growth, furnishing sustenance for six or seven months of the year as against a three months pasture season on the forest. There will be 700 acres in permanent pasture at all times on the ranch. That means a big cut in the annual feed bill, as a tremendous advantage over the straight range proposition of the west and the stall-fed beef cattle of the east.

Riding on down the gently sloping mesa along the ditch we come to cultivated fields. Grain was the only thing at first visible, but with the wheat we found alfalfa; so this was alfalfa and timothy, with a nurse crop. Sometimes the nurse crop is wheat, again oats, and sometimes barley, cross drilled with alfalfa and timothy, 6 pounds of alfalfa and 3 pounds of timothy to the acre. This cutting makes a splendid hay for the horses, as it runs from one-fourth to one-third timothy and it makes a better turf or sod to turn under. Yes, that's the reason for it—a fertilizing crop. It is the foundation for the rotation; the foundation for the entire farming system as explained by Lou D. Sweet:

"We plow under the third crop, turning it 4½ inches. This lays it flat and it rots during the winter. In the spring we go in on this with 8 to 10 inch plowing and that is what runs up our potato yields. Potatoes are the cash crop. Our alfalfa plowed under equals 20 tons of barnyard manure to the acre. It adds nitrogen and humus and the plant food is available at the time the following crop it put in. We have a five-year rotation of alfalfa, root crops and grain."

You will recall, Professor, that some man over in Great Britain has produced 2,000 bushels of potatoes to the acre. Well the high record on the Sweet ranch under this rotation is 590 bushels, but some day, not far distant, I think we will see it 800 or maybe even a thousand bushels. It depends on the amount of fertility and the available moisture. The moisture is at hand when needed and virgin fertility, plus the humus and nitrogen added by the alfalfa, makes that ground as rich and mellow as a hothouse soil. I think the time will come soon when the potatoes can be planted closely enough to make 500 and 600 bushel yields the average, with 800 and 1,000 bushels not uncommon.

There will be room to handle the spuds. Storage cellars built along scientific lines, so well built that Department of Agriculture experts use the description as models in government bulletins, furnish storage for 170 cars. That's a big pile of potatoes. The other big crop is hay; 1,600 tons of alfalfa cut on the ranch in 1919. Then there is the grain—well, with 850 acres producing everything to the maximum point, we can figure that the Sweet ranch is doing its share to keep the world from going hungry.

The big fact, Professor, is this: The ranch is constantly going upward in its per acre production; it is becoming more fertile instead of less so, through this well planned system of rotation.

And now with the property under an enlarged program with expert management we shall have something to look forward to from year to year in the way of progress. The possibilities are unlimited not only from the standpoint of food production—bread, meat and potatoes—the three big staples—but from the specialized lines of pedigreed seed growing—barley, wheat, oats, Minnesota No. 13 corn—Grimm and Baltic alfalfa seed and perhaps sugar beet seed. The first trials of the latter are being made under Mr. Simpson's direction this year. They promise well. The stecklings are soon to be looked over by our friend Hans Mendelson, the Great Western Sugar Co.'s expert.

You saw this ranch about 1908 or 1909 and it was then attracting attention because of its adaptability to the alfalfa, grain and potato rotation. What you saw then at the beginning of development has been gradually pushed forward until we now have an example of scientific agriculture that is better than any experiment station. It will be worth your while to come out and look it over, for big things are being done in a big way.

Land Banks Find Strong Defenders in Congress

FARMERS AROUSED OVER ATTACK ON SYSTEM BY MORTGAGE MEN

IN all the history of the effort of the farmers of America to obtain favorable rural credits there has developed no more determined opposition than that which comes now from the American Mortgage Bankers' Association, who are openly boasting of their fight on the Federal Land banks and soliciting more memberships among the money brokers on the strength of their campaign to deprive the farmers of low interest loans. This organization has succeeded in temporarily shutting off all loans, by appealing to the United States Supreme Court for decision as to the constitutionality of the tax-free feature of farm loan bonds. In a recent issue of Western Farm Life the present status of the Land Banks, the success they have met with in making loans, and the attack of the mortgage brokers was discussed. Copies of the issue of July 15 containing two articles on this subject have been sent to United States Senators Thomas and Phipps and Congressmen Vaile, Timberlake, Hardy and Taylor. A letter to these Colorado senators and representatives urges the need for watchfulness at Washington, along two lines: To prevent needless delay in securing a decision and to prepare new legislation, in case such is necessary, in order to strengthen the Land Banks. The system has been of untold benefit to agriculture all over America and it would be a calamity to allow a small group of money brokers to undo the work which our farm organizations have accomplished after more than a quarter of a century of agitation. The American Farm Bureau Federation, the Grange and other organizations, are on the job at Washington, to see that the farmers' interests are protected. It will require the aid of everybody concerned, hence the letter, a copy of which follows:

You will be interested in marked articles appearing in Western Farm Life for July 15, copy of which has been mailed to you under separate cover. These articles have reference to the shutting off of loans by the Federal Land Banks, due to the attack made on the law by the American Mortgage Bankers' Association. I am aware of the fact that Congress took care of all applications for loans that had been passed on up to March 1, and also know that nothing can be done from a legislative standpoint until the question of constitutionality of the tax-free feature of farm loan bonds has been decided by the United States Supreme Court.

However, I wish to acquaint you with the fact that the farmers who have borrowed and others who have filed, or were about to file, applications for loans, wish their representatives at Washington to look after their interests, in case of an adverse decision; also to use their influence to get an early decision as there is an evident tendency to delay matters.

Statements made by the American Mortgage Bankers' Association, in a letter published in the Congressional Record at the instance of Senator Pat Harrison of Mississippi, late in May, indicate that delay is being sought by enemies of the Land banks. This letter was sent out to mortgage brokers, soliciting their membership for the Mortgage Bankers' Association. Attention was called to the fact that this association bad succeeded in stopping the activities of the Federal Land banks and that this association was responsible for their making no loans at present and for tying up the system "at least until next year."

The Mortgage Bankers' Association is openly boasting that it has succeeded in depriving the farmers of low interest loans. This statement has been accepted by the farmers of the West as a direct challenge and they expect to meet the issue through their farm press and through Congress.

This question is not a political one in any sense and we are therefore directing this letter to every member of the Senate and House from Colorado, regardless of party. Western Farm Life was active in advocating the passage of the rural credits law and the writer personally helped in the organization of farm loan associations to enable farmers to obtain mortgage loans on long time at reasonable rates. The article on page 3 of the issue sent you is an account of how the system is working out in Eastern Colorado. The example might be duplicated in a dozen different localities.

I am constantly out among the farmers of the state and know their feelings on this subject, hear them express themselves privately and in open meetings, and I am not overdrawing when I say that it would indeed be a dangerous thing if this attack on the Land banks should succeed.

Our interest in the matter is based on the conviction that the farmer is entitled to at least equal opportunities with the business man for financing and that proper financing of agriculture is a national and not a class question, because farming is our fundamental industry. I am sure that the farmers of Colorado can count on your active aid and influence in preserving the Federal Land banks, and in extending the benefits of co-operative rural credits to include also personal loans, in some form that will be agreeable to investors as well as borrowers.

Please note that the present attack on the Land banks comes not from the man who has money to lend, but from the middleman who has been taking a commission from both the lender and the borrower. The farmers are well aware of this and they do not propose to let the brokers put this over. Figures from the Treasury Department at Washington show that there are now approximately 125,000 borrowers and that the Land banks have placed a total of about $350,000,000 in farm mortgage loans. There are several thousand borrowers in Colorado and thousands who expect to take advantage of the system later, consequently the question is one that deserves careful attention. We are keeping the Colorado borrowers informed regarding progress of matters and would appreciate a word of encouragement from you on this subject.

ALVIN T. STEINEL,
Managing Editor.

Encouraging replies have been received from several Colorado representatives at Washington and also from heads of the Federal Land Banks in various parts of the country. These re-

(Turn to Page 21.)

Farmers and Business Men on Annual Auto Tour

CROPS INSPECTED IN EASTERN PORTION OF EL PASO COUNTY

H. A. LINDGREN.

THE annual farm tour in El Paso county this year was without doubt the largest ever held, both as to miles traveled and the number of people in attendance. There were 75 autos in line, carrying close to 400 people. The idea of the tour was to acquaint the business men of Colorado Springs with the conditions in the dry land section in the eastern part of the county. The tour extended over about eighty miles of territory and through the section showing a great development in the way of raising crops.

One is astounded with the large extent of open country that we still have in Colorado that offers opportunity for development. There are enough crops on this land to show what it will produce. On a trip of this kind, in Colorado, this year one gets an idea of the large amount of corn being grown. On the El Paso county dry lands it is one of the main crops and the farms are well dotted with pit silos in which to store it. One farmer who operates on the dry land, remarked that their safest industry was dairying. The corn they grow not only affords a good dairy feed but also a supply of grain for the raising of hogs. These two industries are so closely linked that they are economically inseparable. The corn is in excellent condition and barring unforeseen weather conditions, the crop will be of high standard and good yield.

The tour started from the Springs and proceeded to Ellicott, where a reception was staged by the Ellicott community at their high school building, which was decorated for the meeting. Ice cold lemonade was served to the thirsty crowd and was greatly appreciated as the day was quite warm. The young people there staged a short wild west program after which the crowd assembled in the school building and enjoyed

A warm welcome for El Paso County Farm Bureau tourists at the Ellicott school.

a community sing under the leadership of the Rotary Club Glee chorus of Colorado Springs. A short address was then given by Governor Shoup, who was with the party. President James Gauld of the El Paso County Farm Bureau then made a few remarks and the journey over the plains was again taken up.

The second stop was on the farm of Field Bohart, a 30,000-acre stock ranch. Here we had the pleasure of looking over a herd of some 1,400 head of excellent Hereford cows and their calves. Mr. Bohart is in the range cattle business and keeps enough registered stuff to supply his own bulls. He reported that he raises an 80 to 90 per cent crop of calves each year. His cattle looked good, as the feed is abundant.

The third stop was at the Holmes place, where a basket dinner was served under the trees that were set out forty years ago and are now large enough to furnish a great deal of friendly shade. The writer enjoyed the hospitality of Mr. J. H. Bomhoff and family at dinner. This farmer lives in the dry land section and is interested in dairying with Milking Shorthorn cattle.

Following the dinner a speaking program was listened to, Gov. Shoup again speaking. He pointed out the development of the plains region since the early day; how the range was rapidly being converted into profitable, productive farms. He spoke of the schools and their development in the county and urged a continuance of co-operation between the city business man and the farmer.

D. W. Thomas, secretary of the Agricultural and Livestock Bureau of the Denver Civic and Commercial Association, spoke briefly of the state's development in agriculture. He was followed by E. E. Jackson, secretary of the Colorado Springs Chamber of Commerce, who spoke along the line of what the Chamber could do to assist the agricultural interests. Mrs. Wm. Holmes was then introduced to the crowd. She has been on the ranch forty-two years. Her daughter, Miss Holmes, a former instructor in the State Teachers' College, told something of the early history and how that particular ranch had been the scene of several types of gatherings, first, the Indians, then the cattle round-up, and now the farmers.

From here we went to Fountain, where the good people of that community welcomed us and served some well appreciated ice cold lemonade, and again we heard from Gov. Shoup in a short talk, after which we traveled on to the Myron Stratton home, where we viewed the grounds and fields of this beautiful place. This farm is under the direction of Mr. Gauld and is an ideal institution. They are raising Herefords and Holsteins. After traveling past the Broadmoor hotel the tour was over, concluding a most profitable and enjoyable day.

This tour is an established annual custom in which there is much interest. One of the things that impressed one was the orderly manner in which it was conducted. El Paso county has been without a county agent for five months. However, during his term the former county agent, Mr. W. H. Lauck, had organized a farm bureau, which organization is doing a great deal toward the

(Turn to Page 17.)

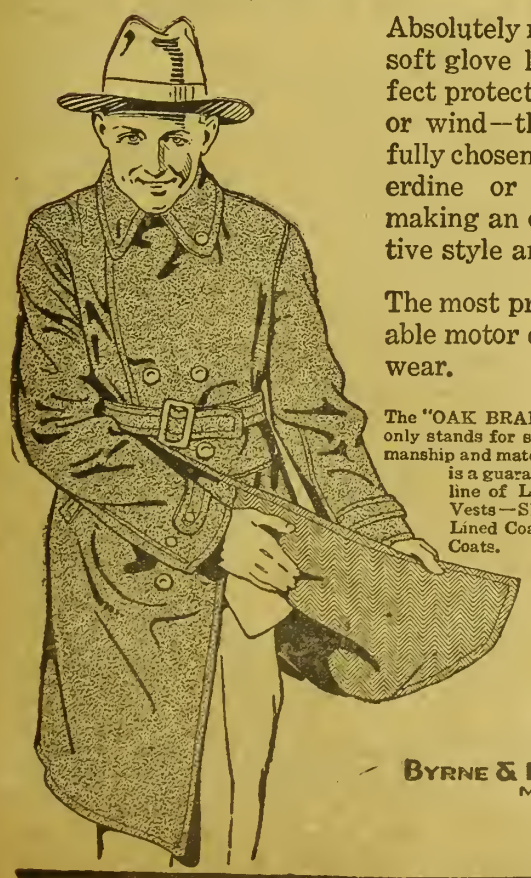
All season Motor Coat

For late summer evenings—snappy autumn days—or cold wintry storms, an

OAK BRAND

Dubble-Stormcoat

insures complete comfort, style and service.



Absolutely reversible—one side soft glove leather, giving perfect protection from dampness or wind—the other side carefully chosen, harmonizing Gaberdine or all Wool Tweed, making an overcoat of distinctive style and service.

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38 years old-still pumping

ECLIPSE WINDMILLS erected 38 years ago are still pumping water, with no repair bills. A reliable water supply year after year at a cost of $1.65 a year figured on a 38-year service basis.

The ECLIPSE WOOD WINDMILL has been sold for 50 years, always giving wonderful service. It is sensitive to light breezes—practically storm-proof. Requires only occasional oiling—has direct stroke—no gears—but little friction—noiseless. See your dealer and have him prove these claims to you.

Fairbanks, Morse & Co.
MANUFACTURERS CHICAGO

Viewing Herefords at Lakeside

PAINTER'S PASTURES PUT BLOOM ON WHITEFACES.

H. A. LINDGREN.

Group of guests on the Painter Hereford farm.

THE man interested in stock raising will enjoy a visit to the ranch of John Painter & Son of Roggen, Colo. It is a long time since we saw a pasture so large in one man's control as is found on the ranch of this noted breeder. There are few ranches in the west where so many registered cattle are found. The place owned by Mr. Painter consists of 30,000 acres, on which he keeps 800 head of registered Hereford cattle.

Mr. Painter was host recently to a party of excursionists from the Denver Civic and Commercial Association. Mr. D. W. Thomas, who is secretary of the Agricultural and Livestock Bureau of this organization, has been conducting a series of these excursions to places of interest where the Denver business men were given an opportunity of viewing some of the development in agricultural lines. This trip was very enjoyable in that it brought them in touch with the big western idea of stock raising. The grass is very good and as a result the cattle were in very good condition.

After partaking of a sumptuous meal at the ranch we had a look at the show animals all dressed up in their best clothes. They were a beautiful sight. The even, smooth and typy conformation of the animals was such as one likes to see. The Ruperts, Stanleys, Mansell Boy and Donald Rex breeding are found in the herd. Mansell Boy is the sire of the grand champion load of heifers at the last National Western. He is also the sire of Mansell Boy 11th, one of the bulls shown last year and who is of excellent promise for this year's shows. The old bull Donald Rex who has been one of the leading sires on the Painter ranch, has an outstanding son in Donald Rex 19th that won fourth in the senior yearling class last winter at Denver. This bull promises to be a strong contender at the fall and winter shows.

After looking these animals over we started over the ranch to visit the various subdivisions of the pasture. The ranch is 12 miles long and from 3 to 4 miles wide. Mr. Painter figures that it does not pay to allow the cattle to journey more than a mile and a half to water and has his pastures in subdivisions containing about three sections each and has the watering place in the center. There is an abundance of water pumped by windmills, or gasoline power.

The bulls are being kept up and the cows are carefully watched and brought to the corral to be bred. In this way a bull can be used on a larger number of cows in a year. When asked what the calf percentage was this year Mr. Painter replied that they were a little low on calves. A little over 80 per cent. He said that they should run as high as 90 per cent and do in most years. The man on the range feels pretty lucky if he can count out 60 per cent in the fall. This good showing in the case of Mr. Painter is due to his careful attention to the breeding and excellent care of the breeding bulls. Mansell Boy is being used on 125 head this year. It pays to get as many calves as possible from these good bulls and they are certainly using this one to the best advantage.

The Painter's believe in showing their stuff and their herd of show animals always attract attention at our western shows because of their being the practical type that the western cattleman wants. The thing that attracts attention on this ranch is the orderly manner in which the business is carried on. The buildings are conveniently arranged and of a practical nature. There is about 70 acres of alfalfa on the place. The remainder of the hay used in feeding is cut from the draws where grasses and sweet clover grows abundantly and the mixture produces a very good hay.

Mr. Painter has been breeding registered Herefords for fifteen years, but has been a figure in the cattle business in Colorado many more years. Being a native of England he knows the breeding game from A to Z.

He recently sold a number of heifers to the calf club members of Weld county. He is closely associated with the development of the livestock industry through the work he does as a director of the National Western Stock Show. —H. A. L.

Klug Ranch to Be Sold.

The last large area of irrigated and meadow land available for settlement in Weld county, Colo., one of the richest agricultural districts in America, has been put on the market. It is the famous ranch of John P. Klug, a Weld county pioneer cattleman. The ranch is to be sold at auction in parcels of 80 acres and upward, on Monday and Tuesday, August 23 and 24, the sale starting at 11 a. m. each day. The tract comprises 20,000 acres, one-half of it with water and the balance meadow and pasture land. This land is not bonded. A clear title will be furnished with every purchase.

The tract is located eight miles south of Kersey, about midway between the Union Pacific and the Burlington railways. The development plan includes the laying out of a townsite, in the center of the tract. All around are located prosperous, highly developed farms. The ranch has been producing for many years to support cattle and the land is no different from that which has been converted into intensive farms that have given Weld county its agricultural supremacy and that are valued at from $200 to $500 per acre. An advertisement in this issue gives full particulars regarding the sale.

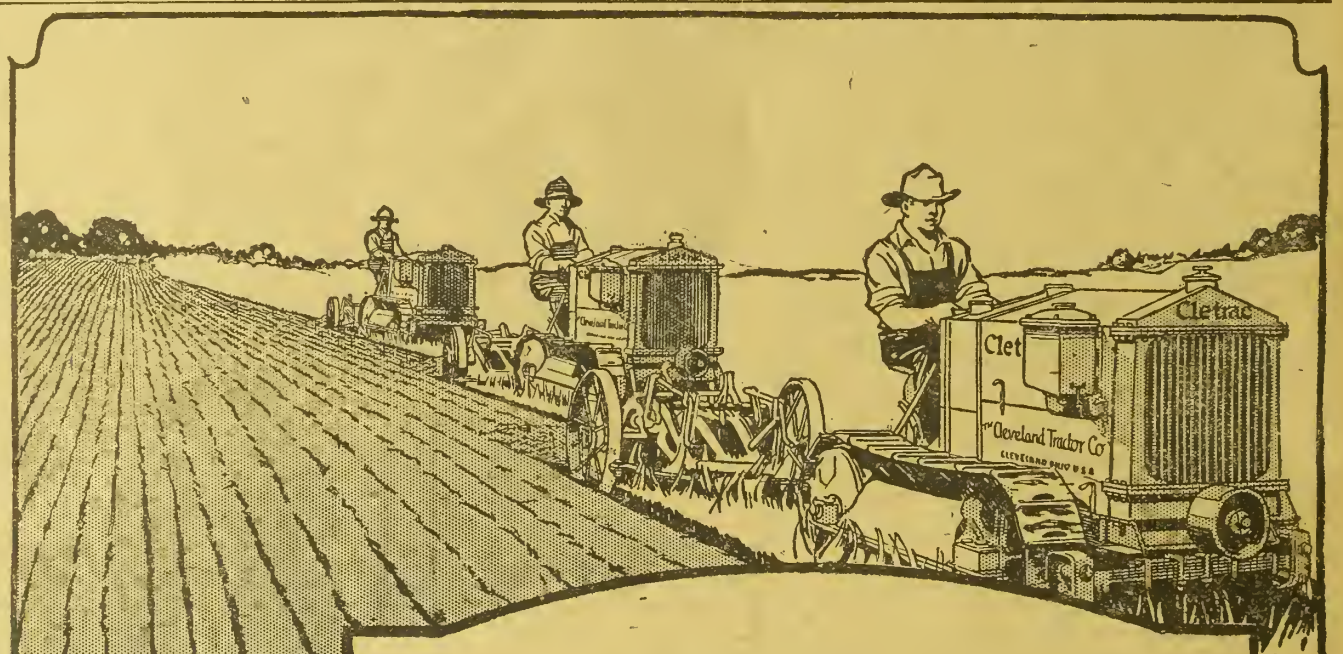
To Market When "Ripe."

That it allows him to pick out his top hogs and take them to market in small lots is the reason given by Alf Kreubel, farmer in Holt county, Mo., for favoring the motor truck in transporting live stock.

"If you are feeding a car of hogs," he says, "you always have to feed some longer than they should be fed, waiting for some others to be ready for market."

He uses a ton truck to haul his livestock 35 miles.

A farmer in Marion county, Fla., recently listed for enrollment purebred sires of the following kinds: Aberdeen-Angus bulls, Percheron and Saddle stallions, Mammoth jacks, Nubian billy-goats, White Plymouth Rock cocks, and Bronze tom turkeys. In addition, he keeps purebread boars and rams. These purebred males were used as sires for 1,048 head of female stock, of which 358 were purebred and the remainder grade. No scrub animals of any kind were kept.



Cletrac
TANK-TYPE TRACTOR

Wheels on a track — the Cletrac way — take less power

Hold Moisture Between Crops

JUST a small amount of reserve moisture may save next year's crop. And the best way to store up moisture is to start plowing right after harvest.

With a Cletrac fleet you can get under way before the sun dries out the stubble. Cletracs plow fast, turning clean, well-mulched furrows that fall apart loosely and close up the air spaces. No chance for moisture to escape.

One Cletrac with the proper fitting tools will keep up with the plows, preparing a mellow surface mulch and firming the ground underneath.

Plowing or fitting — Cletracs keep going tirelessly. Two broad ground-gripping tracks carry this tank-type tractor lightly and easily over soft, sandy soil or fresh-plowed ground without sinking in, slipping or packing. An improved water air-washer protects the powerful motor from dust and dirt.

You can handle more acres and get bigger crops with a Cletrac fleet. Talk to the dealer near you — or write for the booklet "Selecting Your Tractor."

The Cleveland Tractor Co.

"Largest Producers of Tank-Type Tractors in the World"

19073 Euclid Ave. Cleveland, O.

Auto Truck Tour.

A fleet of twenty motor trucks started on a demonstration tour of Eastern Colorado August 9, the run to be continued to the 23d. The Rocky Mountain Automobile Trades Association is backing this demonstration, the purpose being to show the farmers by actual field tests that the auto truck is an urgent necessity under present conditions and that it can do much toward relieving the shortage of man power on the farms and the lack of rail transportation. No attempt will be made to sell trucks, but merely to show where they fit into farm practice. There will be speakers with the caravan to present the advantages of the auto truck and answer questions from farmers. For entertainment the caravan is carrying a jazz band and this mingled with the honking of the auto horns, will furnish the harmony—such as it is.

E. S. Foljambe of the Goodyear organization, a noted authority on auto engineering, will be the principal speaker. Mr. Foljambe is a former instructor of the Massachusetts Institute of Technology, editor of the Horseless Age for two years, and directing editor of the Chilton Company, who issue a number of standard publications in the interest of the automobile, truck and tractor industry. Farmers will have the privilege, therefore, of hearing one of the best posted men in America on the technical side of tractor, truck and auto operation. These lectures will be the feature of the tour.

Similar tours are being conducted all over America at the present time. The itinerary, beginning August 14, is as follows: Arrive at Haxtun, 9 a. m., August 14; leave Haxtun noon, August 15.

Arrive Fleming, 1:30 p. m. August 15; leave, 2:30 p. m., August 15.

Arrive Akron 8 p. m., Aug. 15; leave 7 a. m., Aug. 17.

Part of train, arrive Burdette, 11:30 a. m., Aug. 17; leave, 3 p. m., Aug. 17.

Arrive Otis, 9 a. m., Aug. 17; leave, 7 a. m., Aug. 18.

Arrive Yuma, 10 a. m., Aug. 18; leave, 1 p. m., Aug. 18.

Arrive Eckley, 2 p. m., Aug. 18; leave, 4 p. m., Aug. 18.

Arrive Wray, 6 p. m., Aug. 18; leave, 7 a. m., Aug. 19.

Arrive Burlington, 1 p. m., Aug. 19; leave, 7 a. m., Aug. 20.

Arrive Flagler, 11:30 a. m., Aug. 20; leave, 7 a. m., Aug. 21.

Arrive Hugo, 10 a. m., Aug. 21; leave, 7 a. m., Aug. 22.

Arrive Limon, 8:30 a. m., Aug. 22; leave 7 a. m., Aug. 23.

Arrive Denver, 4 p. m., Aug. 23.

Following is a list of the Denver firms co-operating in the tour:

Kumph Motor Co.—Pierce-Arrow.
Charles Bilz—Commerce.
Harrison Motor Co.—Auto Car.
White Motor Co.—White.
Norton-Buick Co.—GMC.
Swenson Auto Co.—Republic.
Martin-Sweet Motor Co.—Patriot.
W. W. Barnett—Oldsmobile.
Great Western Motor Co.—Kissel.
All American Truck Co. (Colorado Springs)—All America.
Maxwell-Chamberlain—Acme.
Southwest-Nash Motor Co.—Nash.
Sherman Auto Co. (Greeley)—Bessemer.
Mountain Motors Co.—Packard.
Graham-Jones Motor Co.—Reo.
Cole Motor Sales Co.—International.
Duplex Truck Sales Co.—Duplex.
Paul Jennesse—F. W. D.
Troy Trailer Sales Co.—Troy Trailer.

Burlington Demonstration Train.

Earle G. Reed, agriculturist of the Burlington lines, is planning on running a demonstration train into the dry land sections of Colorado, Nebraska, Wyoming, New Mexico and Kansas, between August 12 and November 15. Stops will be made at practically all points along the Burlington system in those states. The train will carry many practical suggestions to the farmers on the dry lands. A coach is being rebuilt for demonstration purposes. One end of the coach will be used for the distribution of literature of a practical nature. A model rotation system will be demonstrated in another portion of the car. This system is a miniature farm laid out in the various fields showing the practical rotation for an ordinary dry land farm. The method of setting trees for windbreak will also be shown.

In another part of the car will be samples of various types of silos, including the monolithic, wood stave, pit silo, and samples of various other building materials used in silo construction. A derrick model will be shown for taking the dirt out of the pit silo as it is being dug and to be used later in taking out the silage. The walls of the car will be decorated with photographs of various crops and types of farm equipment. It is the idea to make this train of a practical nature in demonstrating the approved methods to be used on the farm.—H. A. L.

Prompt Cooling Cuts Bacteria.

That the growth of bacteria in milk can be retarded by prompt cooling was strikingly exemplified by some work recently done by Mr. R. J. Posson of the Western Office of the Dairy Division in connection with the milk supply of the cheese factories in Tillamook county, Oregon. Samples of milk from 39 patrons of one factory were plated and bacteria counts made. Twenty of these patrons cooled their milk in running water and nineteen did not. The cooled milk had an average count of 30,000 bacteria per cubic centimeter, while the others averaged 317,000. When counts are made at all the factories some interesting data should result. The counts may be made to show the best methods of cooling milk, methods of washing cans, pasteurizing whey, methods of caring for the milking machine and perhaps other operations. Such data should result in a better understanding among the patrons in regard to the importance of caring for the milk and its delivery to the factory in good condition.—J. E. Dorman, Salt Lake City U.

High-powered Jordan Car

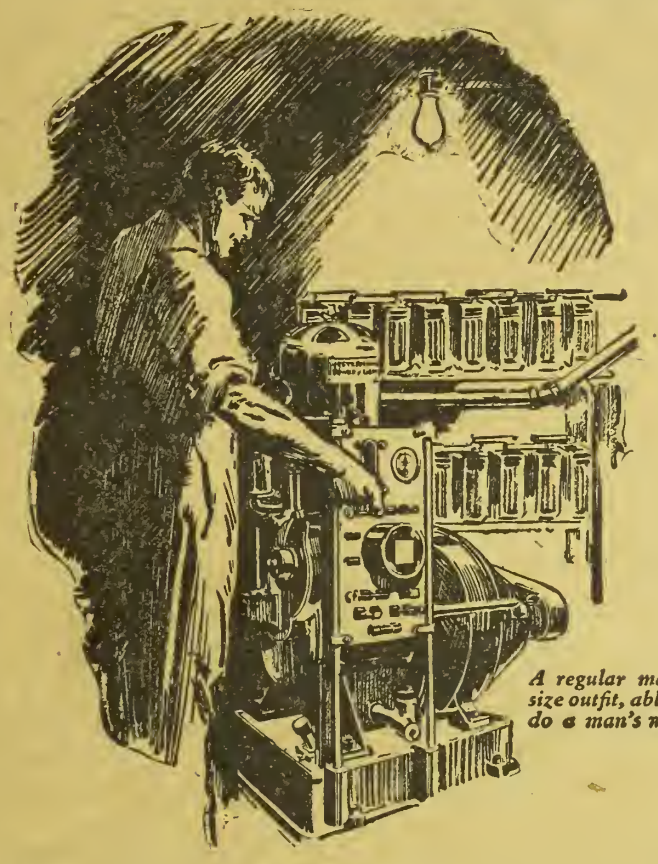
SEVEN-PASSENGER

In excellent condition, offered at attractive price. Always driven personally by owner. Guarantee given as to condition. Address,

P. O. CLARK, 788 Interstate Trust Building, Denver

Or see car at home garage, Grandview and East 4th Sts, Arvada, Colo.

"How a new kind of farm hand added acres to my farm"



A regular man's size outfit, able to do a man's work

Editor's Note: *W. E. Shetrone, a farmer near LeRaysville, Pa., shows how you can help to solve your labor problem.*

"Now, I'm not going to tell you that the Western Electric Power and Light Outfit is the best on the market. The chances are you know more about farm plants than I do. All I want is to tell how this outfit has been doing a man's work on my place—when men are hard to get. That is how it saved time enough for me to cultivate seven acres more last spring."

W. E. Shetrone
LeRaysville, Pa.

Mr. Shetrone's house is pleasantly located

"LAST YEAR I was struggling along with my little farm—milking by hand, taking a two-hour trip to the creamery every day, working hard to support my family. Then a salesman showed me how I could do the work in less time and with less effort by installing Western Electric Power and Light equipment. Well, I put the apparatus in, and right from the start it began to save time and labor. In fact, the time it saved me made it possible to plow seven acres more last spring.*

A powerful outfit for heavy work

"Power ought to be the first consideration in buying a farm plant. There are plenty of good electric sets satisfactory for lighting. But not many of them are strong on power. You can't expect them to do the hard work.

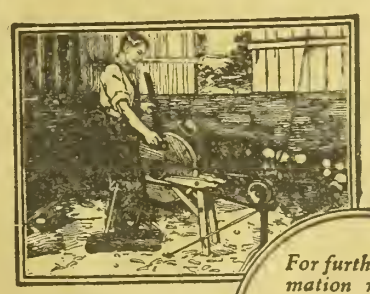
"The Western Electric has a three horsepower engine, which as you know is ample to run most all the machinery. Grindstone, feed-mixer, churn, mill—you can operate them all together from a shafting hitched up to this powerful engine, because there's a pulley on it for just such work.

"In generator and battery too, power is the feature that impressed me most. My Western Electric outfit furnishes plenty of electricity to light the house and barn, and at the same time it runs the pump, the milking machine and such household appliances as a vacuum cleaner and a washing machine.

Why the battery lasts longer

"Another big feature is the automatic control of the battery charge. At the start the current flows in at a fairly high rate, but as the batteries fill, the rate of flow becomes less and less—till at last the current is just trickling in. Then it stops by itself. This 'tapering charge' takes the strain off the batteries and *so makes them last longer.*

"Well, the Western Electric outfit certainly has helped me in my work. And talk about time saved! Those extra seven acres I was able to plow will produce some handsome profits this fall, I can tell you."



A portable motor drives the grindstone

**What the Western Electric Power and Light Outfit did to make Mr. Shetrone's farm more productive, it can do for your farm too.*

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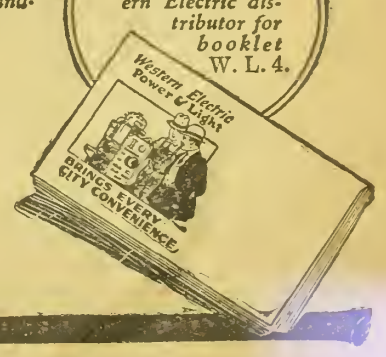
P. A. Douden, Denver, Colo.	*O. Zongmeister, Monte Vista, Colo.*	*Vyne Brothers Electric Co, Prescott, Ariz.*
Hassell Iron Works Co., Colorado Springs, Colo.	*Russell Company, Roy, N. M.*	*Strawn Electric Co., Calexico, Cal.*
	A. Schreck, Phoenix, Ariz.	*C. F. Bush, Blythe, Cal.*

Some good territory still available for live-wire representatives

For further information write to the nearest Western Electric distributor for booklet W. L. 4.



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W. E. VAPLON.....Poultry Raising
ERMA DOUGLASS.....The Farm Home
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We Need the Tunnels.

Every citizen of Colorado is interested in the fullest development of the state's resources, no matter where he may live, whether in the southeast extremity of Baca, or in the remotest corner of Montezuma or Moffat counties, the middle plains, the intermountain country, or over on the west side of the Divide. Prosperity may seem a remote subject during present disturbed conditions, but those who keep their ear to the ground agree that out of the uneasiness and unrest of today will come a bright tomorrow, when our undeveloped resources in land and minerals will be tapped for the use of humanity. The forerunner of this era has already appeared in the advance work for great undertakings, such as the tunnels that are to pierce the Continental Divide at three strategic points in Colorado, the extension of the Santa Fe railroad from Kansas into Baca and Las Animas counties, the rapid extension of motor truck lines and the constant arrival of new settlers in Colorado and other Rocky mountain states.

To insure the success of these great projects concerted action is necessary. Every citizen of Colorado must assume responsibility for his share of the work. No capital investment is asked of the public, no increase in taxation is contemplated; it is not a case of giving something for nothing. Moral support and a vote at the polls in November will do the business as far as the three tunnels are concerned. The petition which insures placing the tunnel project on the ballot received thousands more signatures than were needed for a proper legal initiation of the amendment. Now if all will turn in to get out a full vote favorable to the project it means that the state will issue bonds providing for the construction, simultaneously, of tunnels that will provide quick and constant transportation for the Moffat road territory in northwest Colorado, for the central region of the Western Slope now served by the narrow gauge lines over Marshall Pass, and for the San Juan country, the great southwestern agricultural and mining empire that is laboring under the handicap of a 36 hours' journey by passenger route from the state's metropolis and a week's run by freight.

Agriculture is the paramount interest in the regions that are to be brought into closer touch with markets through the three tunnels. Farming development has been halted by lack of safe, constant and quick transportation. Lands lie idle and undeveloped because existing railroad lines are unable to give adequate service. The people living in the sections to be served by the tunnels are doing well, but why not give them a chance to share with the rest of us the advantages of a wider market for their surplus? The volume of traffic that they can produce when on an equality with the Eastern Slope farming sections, means many millions added to the productive wealth of the state. And every dollar's worth produced and properly marketed adds just that much to the income of all the people. Productive wealth enables the state to build highways and maintain them; to build better towns and cities and to improve public schools and higher educational institutions. We have room in Colorado for three or four times our present population and the only way to get it is to develop our natural resources and that, in turn, depends upon facilities for moving our products, whether raw or manufactured, from point of origin to the consumer.

The tunnels will not be a charge against taxes. The state backs the tunnel bonds, the capital comes from private investors; the tonnage hauled through the bores will pay interest on bonds and retire them in due time.

✦ ✦ ✦

Get Ready for Fairs.

Fair season will soon be with us. Many localities are planning on holding exhibitions of agricultural products and livestock. Those who take part are not only gaining knowledge for themselves but are assisting others in gaining a knowledge of what good products are and what their particular section can do in producing quality crops. It is one of the best means of advertising the progress of a locality to make the community or county to display the best possible. Too often we think our stuff is not good enough and we do not bring it in. When we visit the fair we are convinced that what we have at home is far better than that which is shown. We then are apt to feel that the fair was not a success. Now, the best way to make a successful showing is to bring the best we have and compete with the other fellow. If we win we rejoice; if we lose, let's be good-natured about it and resolve to bring a better sample next year.

There is no better place to find out what a community is good for agriculturally than at the fair. Land seekers are learning to visit the fairs when in the market for a new location, and deciding after viewing what the community fairs have on display. For that reason it is up to the individual to do his part.—H. A. L.

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Crop Prospects Good.

At the beginning of August the indications were for the largest crop of wheat, corn and sugar beets ever harvested in the state of Colorado. The Colorado Co-operative Crop Reporting Service in bulletin No. 15, covering July conditions, indicated wheat at 90 per cent of normal, with a possible total production of 24,498,000 bushels. Of this 15,498,000 is winter wheat and 9,000,000 bushels is spring wheat.

Corn estimates were for a possible production of 15,203,000 bushels, as compared with about 11,000,000 in 1919. The crop condition was 94 per cent of normal as compared with 79 per cent July 1, 1919.

Oats, barley and rye all were reported to be in good condition, with a larger acreage than the previous year.

Potato acreage is given at 86,000 acres, compared with 92,500 acres last higher than last year and condition of July were 95 per cent, which is exceptionally high and indicates a production of 13,072,000 bushels as compared with 11,040,000 bushels last year.

The acreage of field beans is estimated at 74,000 acres, which is somewhat higher than last year and condition of the crop indicates a possible production of 673,000 bushels, as compared with a final estimate of 450,000 bushels last year.

Condition of sugar beets was 87 per cent, there having been some damage by insect pests since June 1. The acreage for Colorado is given at 253,600 acres, as compared with 236,300 in 1919. This indicates a production of 2,549,000 tons for 1920, as compared with 1,765,000 tons of beets produced in 1919. Colorado had by far the largest acreage of sugar beets of any state in the Union, with Michigan second, California third, and Utah fourth. Estimates on the value of Colorado's beet crop for the present year run from 35 to 40 millions of dollars.

The indications are for a production of 3,006,000 bushels of apples, which is a little less than last year's production, and 616,500 bushels of peaches, compared with 840,000 bushels last year. Prices will more than offset the difference in yield when the fruit crop is considered from the standpoint of money value.

It appears from the July crop report of J. H. Jacobson of the U. S. Bureau of Crop Estimates that Idaho can expect an excellent production this year. Quoting from this report:

"Crop prospects July 1 indicated a total wheat production of over 4,000,000 bushels more than grown last year; larger crops than in 1919 of corn, oats, barley and rye; a potato crop close to a million bushels above last year's, and a prospective hay crop of over 500,000 tons more than in 1919. In addition, there is a sugar beet acreage of 60,800, double that harvested in 1919; the largest prune crop ever raised in the state, and a bumper apple crop that shows improvement each month. The promise for all crops, taking the state as a whole, is better than during the past three years. There have been timely rains followed by excellent growing weather. Ranges are growing luxuriantly. North Idaho is on hand with one of her old-time bumper crops."

The Government Crop Reporting Service for Wyoming shows general outlook for all crops very promising. Condition of corn is given at 91 per cent, forecasting a production of 1,435,200 bushels, as against 768,000 last year; as is the case in Colorado, this promises to be the largest corn crop ever grown in Wyoming. Wheat production will be about the same as for previous estimates, the moisture conditions being favorable in all sections except central and southwest districts.

Alfalfa is reported to be extra good and all hay and forage is making fine growth. The potato production is given as a possible 4,684,000 bushels, which is almost double the production for 1919. Small grains show a condition of 95 to 96 per cent, as compared with 65 and 70 per cent for the previous year. Sugar beets show condition of 100 per cent as compared with 75 per cent for 1919.

Similarly favorable reports regarding crops in Utah and New Mexico reach us through the U. S. Crop Reporting Service. A few of the dry land sections in Utah report that rain is needed, but there is no considerable area in any of the intermountain states where anything approaching a drouth is prevalent this year. In the irrigated sections the water is more than ample to insure full crops with prospects of a reserve supply remaining in the reservoirs for the following season. The only unfavorable condition which faces the farmers in Western Farm Life territory is the shortage of cars. Every effort is being made by the Farm Bureau to secure an equitable distribution of cars and prompt movement of our big crops.

The farm labor supply has been ample so far, although the rate of pay makes a big hole in the returns from crops. Beet harvest labor promises to be plentiful, but a shortage is apt to be felt in the potato districts.

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Defeat the Road Bonds.

Colorado farmers will be interested in learning that the proposed $25,000,000 state bond issue for construction of roads will not be submitted to the voters this fall. At a conference held recently in Denver those interested in good roads decided that the submission of a bond proposition on this question would be untimely, in view of the fact that an effort is to be made to pass the tunnel measure. It was also decided that the $5,000,000 bond issue recommended by the last session of the legislature should be defeated. This measure provides that one-half of the sum to be raised by bond issue would go to the state highway commission and the balance divided between the various counties in the state, according to the state highway mileage within each county.

The road conference decided that this plan would be inequitable and unwise, as it would not give the state a properly co-ordinated system of highways, but would result in the greatest road building activity in sparsely settled counties. In other words, the counties paying the heaviest taxes would secure the least benefit from the proposed division of funds. The five-million dollar proposition will appear on the ballot, but it is urged that it be defeated.

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Deep Plowing Holds Moisture.

An interesting report regarding the plowing experiments in France comes to us in volume 42, No. 6, of the Experiment Station Record, issued in May, 1920. These tests were made at Bourges and given in detail in a French publication quoted in the Record. Fifteen different tractors and motor plows of French, British and American manufacture were used and tests of plows, pulverizers and other cultivating implements are briefly reported. The work was done in very tough silicious clay soil, plowing to an average depth of about 5.9 inches. The Record says:

"It was found that soil deep plowed with a tractor was better pulverized and not so dry as other soils. The work was, in general, done with greater ease and the soil was more completely inverted and in a condition to make better use of atmospheric moisture. The soil on which the tests were conducted had been deep plowed the previous year, and it was noted that it had retained more water and was easier to plow than soil which had been shallow plowed.

"The tests indicated the advisability of having an ample factor of safety in the rated power of the tractor motor, in view of the sudden and large overloads to which this type of soil subjected the tractor during plowing. It was found that the tractive effort increased in this soil and under conditions of the test with the square of the depth of the plowing."

The Branding Iron

Old Bony Scrub.

Goodby, old Brindle, bony scrub,
The time demands a better breed.
You eat enough, but there's the rub,
You never pay for half your feed.
So after all these years we part,
But pray remember as you go,
If this should break your bovine heart
You broke my purse, long, long ago.
—Virginia Extension News.

* * *

The county agricultural agent in Saline county, Mo., carries a large circular legend on the back of his auto, bearing the name of the Saline County Farm Bureau. He finds this an effective method of advertising farm bureau work. That may do in Missouri, but judging from personal experience, we would call the plan useless for Colorado. People couldn't read the sign. County agents travel too fast out here.

* * *

Have you kicked in on your share of the last railroad wage raise? If not, you will next time you take a train ride or pay the freight on a shipment of goods.

* * *

Old Isaiah Holdemback says he read "as how" both Harding and Cox were mediocre men, and now he doesn't know which one to vote for, because he belongs to that lodge too.

* * *

The Loss Was Large.

Only one mishap marred the day, which was when some one stole County Agent McCaskill's pants. This was not as serious as one might think, as he had an extra pair along to use in case he decided to tackle the oiled pork, and it was the extra pair that came up missing.—From Jefferson County Republican's account of the Grange picnic.

* * *

First Calf: "My parents are better than yours. My mother took first prize and a blue ribbon and three cups at Roundhill last summer."

Second Calf: "That's nothing. My father once ran the governor of the state three times around a piece of pasture land, and made a United States senator climb a tree."—San Pete County Farm Bureau News.

* * *

The Department of Agriculture reports success with experiments in feeding white pine sawdust to cows; that is, the milk-flow fell off when sawdust feeding was discontinued. Isn't there some danger of giving the milk a flavor of turpentine? We must have further light before recommending that the cows be turned into the pine timber.

* * *

Bill Nye, the humorist, once had a cow he wanted to sell and he unblushingly advertised all her faults while naming the few virtues she seems to have possessed. His advertisement ran:

"Owing to my ill health, I will sell at my residence in township 19, range 18, according to the government's survey, one plush raspberry cow, age 8 years. She is of undoubted courage and gives milk frequently. To the man who does not fear death in any form, she would be a great boon. She is very much attached to her present home with a stay chain, but she will be sold to anyone who will agree to treat her right. She is one-fourth Shorthorn and three-quarters hyena. I will also throw in a double-barreled shotgun which goes with her. In May she usually goes away for a week or two and returns with a tall red calf with wobbly legs. Her name is Rose. I would rather sell her to a nonresident, the farther away the better."

Comment by Farmer Putnam

OUR MISSOURI FRIEND MIXES WITH THE FLIVVER FOLKS ON THE EASTERN SLOPE HIGHWAYS

MIXIN' with the flivver folks on the Highway of Life is lots of fun. That's what them statesmen mean when they talk about democracy. You git democracy out on the road in a little car. It don't have to be no Ford, but somethin' of the same size like the buss me and Josephine and Rufus drives. People along the highway has got so they know the hum of our Maxwell. One of the lugs on the right hind wheel is loose and it clicks every time the wheel goes around. Every click is one revolution and you multiply the clicks by the seconds, subtract one toot, add two chug-chugs and you got the speed of the car.

Josephine don't like the click, but me and Rufus thinks different and that starts a argymint. Them thar auto rows is part of the joy of a trip. Fust when you git ready to start it's got to be decided where to go. Well, we had it up and down; that is, Rufus wanted to go up to Poudre canon and Josephine wanted to go down to Colorado Springs and drink Manitou water. We finally compromised on Palmer Lake and when we got thar decided to keep on south.

We didn't have no adventures till we got to Monument, where I allus stop at the bank to see Ralph Walker. Well the president of the bank sez Ralph is acrost the street in the hotel havin' his dinner and then I knowed he must have company. So I went over and I got into a regular hornet's nest of agents. They was Ex-county Agricultural Agent Bill Lauck, Ex-farmer Ralph Osborn and Mr. McLaughlin, all out sellin' lightnin' plants and silos. I got thar just in time to break up a scheme to sell a silo to Ralph Walker.

Lauck was sayin' to him: "Now you know Ralph, I allus told you folks when I was county agent that a silo was a bank didn't I? Well you need a good hollow tile silo fur a bank. You read about them robbin' the Peyton bank didn't you? Well that give me a idee; you try this: Build a circular structure on silo plans, only bigger round. Have iron doors fur portholes in the upper part and put guards at each door. The lower doors kin be barred with the regular wickets like the teller's windows in the bank and then have a sort of a porch over the lobby and white tile floor and the silo part of the bank stickin' out through the roof like a tower in the middle.

"No robbers kin approach without the tower guard seein' 'em and if one should git in all the cashier or tellers has to do is to step on a signal button which closes all iron doors automatically and leaves the bank employes and all the cash safe inside the silo part of the structure. Absolute insurance ag'in robbery. At night your funds are locked up as safe as silage in a hundred ton feed silo. Neither moth nor rust kin corrupt, as the scripture sez. Put your name right here on this line. Our guaranty goes with this the same as on a feed silo."

Ralph Walker was just about to take the fountain pen outen Lauck's hand when Osborn spoke up and sez: "Yes, you'll need a lightnin' plant to go with your bank silo. We put in the plant that gives you electric lights and all the connections fur your burglar alarms and also furnish you a 2,000 candlepower searchlight fur the top of the tower that lights up the mountains from Palmer Lake to Pikes Peak. Just think what a fine ad this'll be fur the bank."

Well I interrupted the deal, but they couldn't a made a sale anyhow, because the bank has got a stone buildin' with walls a foot thick and ever since the Peyton robbery all bankers in them little towns has got out their old 45 Colts which is the best insurance ag'in bandits anyhow. If the old border days is goin' to come back out here along the east slope believe me we've all got the tools handy. A drop of sweet oil on the trigger and a few boxes of forty-fives and we're ready fur business.

Well, after payin' our respects to the Monumenter's we drove on to the Springs where we run acrost John Lennox. He was cheerful as always and as independent as a country storekeeper. John never did ask no odds offen nobody. He's quit appraisin' fur the land banks and taken up some more of his developin' work. His plans ain't bin made public yet but if they go through it means a lot more good land open to settlers in El Paso county. John has been a power fur good in developin' our farmin' without irrigation. Most people don't know it, but we got rich land by the hundred thousand acres still waitin' fur farmers. Some of it belongs to big companies that's held it for paster and the time is here now when it'll be put under the plow and made to produce on the dairy farmin' plan—small herds, some cultivated crops, plenty of paster, silos, etc. Here's hopin', John.

After lookin' around in Manitou we went on down the line to Pueblo. Down around Fountain we seen two oil derrecks, so we stopped to find out about it. The farmers didn't seem to know or care much about oil, but I stopped in a prairie dog town and asked one of the inhabitants what he knowed about the oil boom. I learned their language that night me and Jake spent in Robertsonville where he was tied up because of motor trouble.

"Hello thar," I sez to a fat old prairie dog, "I thought they drove you all outen this district with pizened oats."

"Oh, they did last year, but we've come back. It's perfectly safe now since they've begun to drill fur oil around here. Nobody pays no attention to us now. We kin help ourselves to all the grass and crops we need."

"Well, how about it old-timer, is thar any oil below us? You been down thar and ought to know what's under this crust."

"Say pard, all the oil they'll git outen this valley wouldn't lubricate the hind leg of a Californy flea."

"Nuff said. How fur it is to Pueblo?"

"Keep right on south till you pass the second dog town. Just beyond that you'll find a patch of gourd vines and after you cross the aroya beyond that patch you'll see the smokestacks of the Pittsburg of the West."

We drove on and purty soon we come acrost some flivver pilgrims with a Los Angles pennant on their car.

"How's the earthquakes out your way?" sez I. "Is everybody fleein'?"

"Fleain," he sez, "now look here stranger, don't you know we don't have

(Turn to Page 13.)

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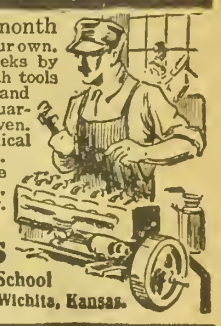

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If in need of advice, ask Western Farm Life Service Bureau.

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— of the —

20,000 ACRE KLUG RANCH

— with —

WATER FOR 10,000 ACRES

At Public Auction, August 23--24

John P. Klug of Greeley, Colo., opens to farm unit sale his beautiful 20,000 acre stock ranch immediately adjacent to the highly developed Greeley district. Mr. Klug has purchased water supply in a well established and operating irrigating system. These water rights will be sold with the 10,000 acres to be auctioned in farm units of 80-acre tracts or more. Part now in cultivation and improved. Remaining 10,000 acres will sell as grazing and meadow. Sale direct from owner to purchaser. No intermediate colonizers or land speculators making profit.

PLACE OF SALE—At Klug Ranch, August 23—24.

RANCH LOCATED—45 miles northeast of Denver, 15 miles southeast of Greeley, 8 miles south of Kersey. Midway between main lines of Union Pacific and Burlington Railroads.

DESCRIPTION—10,000 acres of smooth irrigable land adapted to intensive farm development. Surrounded on three sides by irrigated farms. Part now irrigated and improved. Soil adapted to growing sugar beets, potatoes, alfalfa, grain, corn and other crops of adjacent highly developed Greeley District. Located in a proven area. No sagebrush to grub or drainage or leveling required before cropping. No pioneering in a new or distant region under unknown agricultural conditions. No waiting for community development. Markets, transportation facilities, cropping conditions and social and educational advantages already established.

Largest compact body of excellent irrigable farm land remaining in the Greeley District. Purchasers will have the advantage of future rapid increase in land values due to location.

REFERENCES—Edw. D. Foster, Commissioner of Immigration, State Capitol Building, Denver, Colorado; R. A. Smith, Supervisor of Agriculture, Union Pacific Ry., Omaha, Nebr., and any Greeley Bank, or the Greeley Chamber of Commerce.

For further particulars write to and register with

VERNON McKELVEY,
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COL. C. W. SNOOK, and
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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and through the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Stock Peas for Silage.

Have San Luis valley stock peas ever been used for silage? Can they be successfully grown at an altitude of 8,000 feet? What can you recommend for a silage at this altitude?—O. H. B., Park County, Colo.

Stock peas have been used for silage quite successfully. One farm in particular near Monte Vista has put up several hundred tons of this feed in that form and it was used for feeding sheep. Peas have been used in other localities with very good success for silage. A better silage will result, however, if some other crop is sown with the peas, such as bald barley or oats. A little more care needs to be exercised in handling these crops where the hollow-stemmed plants are used. The altitude of San Luis Valley is 7,500 feet. I would suggest that you write County Agent C. D. Hyatt at Monte Vista for information concerning the San Luis valley peas for silage. At your altitude I would suggest that you try the Russian sunflowers. That crop does very well in the higher altitudes. I have seen it yield as high as 25 tons per acre at 7,500 feet. I would recommend it at your altitude rather than the peas.—H. A. L.

About Ditch Rigt-of-Way.

A. owns a piece of land through which B. has to take water for irrigation. A. built and maintains ditches that supply B. Can A. compel B. to pay part of the cost of building the ditches and to help maintain same? Does the fact that B. has run his water through A.'s ditches automatically give him a right of way?—Subscriber, Morgan County, Colo.

I am of opinion that, under the conditions stated, A. is not obliged to continue to furnish water to B. unless B. pays his share of the cost of construction and maintenance; unless some contract has previously been entered into through which A. is obliged to furnish water to B. permanently for value received. The fact that B. has run his water through A.'s ditches does not necessarily give him a permanent right-of-way, unless he pays his share of the cost.—A. Lincoln Fellows, Senior Irrigation Engineer, U. S. D. A., Denver.

This Fence Is Lawful.

I have a new three-wire fence of two miles. The posts are 2 feet deep in the ground and 16½ feet apart, and the first wire is 19½ inches from the ground, and the next one is 12 inches from the first one, and the next is 14 inches from the second. The top is 3 feet 9 inches from the ground and the corner posts are 4 feet in the ground and braced well, and the wire is good and tight. Is this fence a lawful fence? If so, there is a white-face long-horn cow that goes through like a fish through a fence in the water. Now what is a man to do with this cow? Is there any way I can get rid of her? If the fence is not lawful, let me know.—G. H., Huerfano county, Colo.

It is our opinion that the fence you describe is a lawful fence, and you have the chance of a come-back with the owner of an animal that is giving you trouble. The law provides that any person making and maintaining in good repair any fence which is lawful, may recover for trespass from the owner or owners of any animal which breaks through any such fence. You may recover full amount for all damage sustained on account of such trespass.—H. A. L.

Prevent Bloating in Sheep.

I have lost several sheep from bloat and it is usually of an evening when they seem to suffer the most, or after a rain. Do you think feeding them some dry feed, before they are turned out, say shelled corn or oats or straw, would be any help in preventing them from bloating? Can you give me any treatment that will help after they have already bloated?—R. H. B., Colorado.

It would be a good idea to give your sheep a good feed of hay or grain before they are turned out on pasture that would cause bloat. They are more apt to bloat during wet weather than any other time, so if possible, keep them off the pasture when it is raining, or the pasture is wet with dew. There are a number of treatments that have been suggested for the treatment of bloat in sheep. Probably one of the best ways is to straddle the sheep, hold the mouth open with the hands, and press gently against the haunch with the knees.—H. A. L.

Fees for Stallion Service.

What is the law concerning the collecting of fees on jacks and stallions in the state of Colorado? How often can I compel a man to return his mare if she fails to get in foal? What is considered the breeding season?—W. A. C., Kiowa county, Colo.

In regard to the law on the collection of fees for the service of a stallion or jack in Colorado, the law states that the owner of a stallion or jack has a lien on the colt from same until fee is paid. The colt cannot be taken out of the county without his consent until service fee has been paid. Nor can the mare served by a licensed stallion or jack be removed from the county prior to payment of service fee without the written consent of the owner of the jack or stallion to which she was served. The lien on the colt lasts one year from date of birth. We can find no provision in the Colorado law which covers the point of compelling the return of mare for service in case she fails to get in foal. The breeding season is usually from April 1 to May 15. However, I have known it to extend to July 1. This seems to be optional with the owners of the stallion or jack.—H. A. L.

What Is Radium?

What is radium? Is it liquid or solid? What is it used for?—W. A. C., Kiowa county, Colo.

Radium is a metallic element, the same as gold or silver. It, however, differs in certain properties, the most striking one being that it is self-luminous. It produces heat spontaneously, or in other words, it warms itself. The

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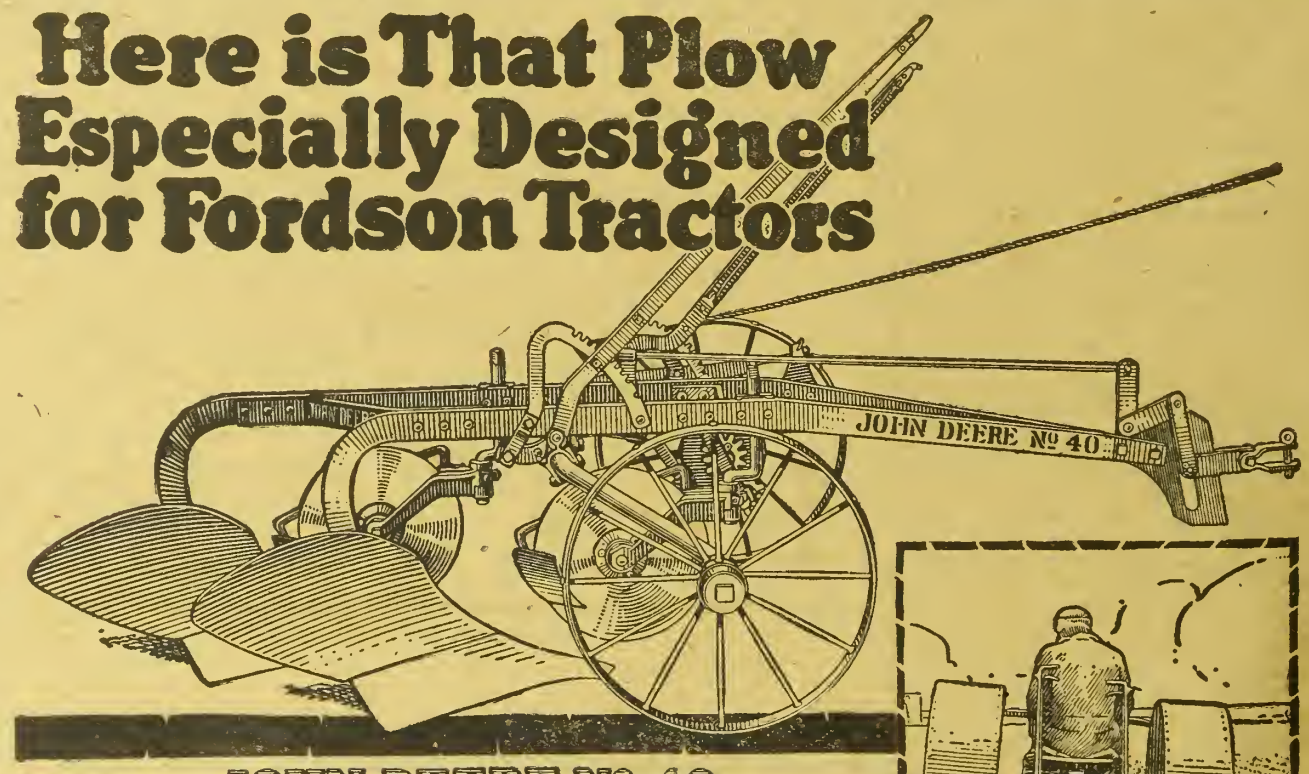

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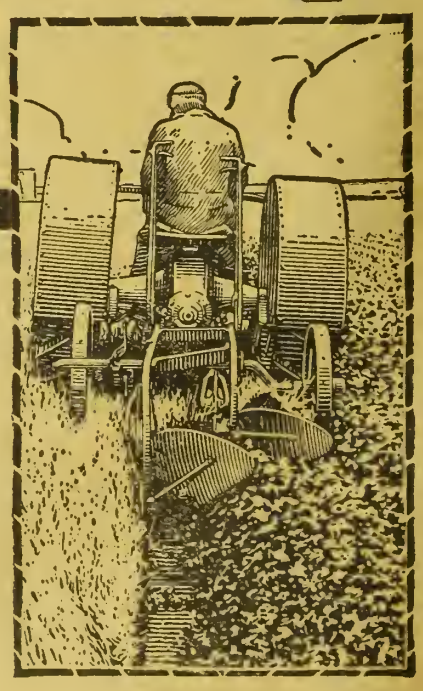

If you are planning to buy a Fordson tractor, be sure to see that new John Deere plow made especially for it. Look this plow over carefully. Satisfy yourself that the John Deere No. 40 is the plow that will best meet your requirements. Consider its wonderful combination of light weight, light draft and great strength; its clean-scouring, long wearing bottoms; and its self-adjusting hitch that keeps the bottoms running true and level at all depths.

You will find the No. 40 just what you want. John Deere built it that way. And remember, there is another John Deere plow similar to the No. 40—The John Deere No. 45, built for use with any "two-plow tractor. We will be glad to send you folders describing these plows fully. Ask for Folder F-454.

Beams, braces and axles are built of New-Process John Deere steel.

That's why the No. 40 is lighter than the average horse-drawn sulky-and tremendously strong.

Its light draft means less fuel per acre and greater acreage per day — lower plowing cost per acre.

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radium salts are used mostly in the treatment of disease, such as cancer or rheumatism. Radium is a solid and comes from various ores such as uranium, vanadium, and carnotite. It is found in small quantities, requiring about 800 tons to produce one grain of radium, which is worth $125,000.

Try the Commission Firms.

We are planning on selling our fifty head of scrub cattle and going into the dairy business with a few full blooded or good grade cows. We are not sure which would be the best way of disposing of them, but think some of shipping a carload of mixed stock to Denver. We would have to get in touch with some of the stock buyers there. Will you advise us which one is best. Our cattle consist of calves, yearlings, 2-year-olds and some fairly good milk cows, all in pretty good condition but grass fed.—M. C., Kiowa county, Colo.

No doubt your best means of getting rid of these is through commission firms in Denver. I have found the Sigel-Campion Livestock Commission Co., Stock Yards Station, Denver, or Prey Bros. Livestock Commission Co., to be very successful in handling mixed shipments. No doubt, the other firms at the yards are just as reliable, but I am speaking from personal experience with those two firms in particular.—H. A. L.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Colt Has Deformed Hoofs.

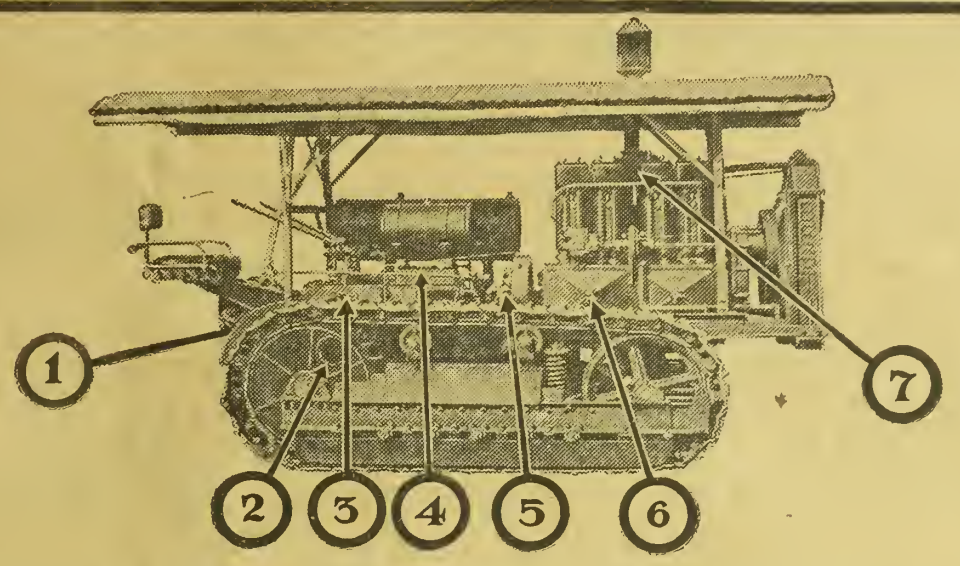
Would you please advise me in the case of a filly two days old now, who walks on the tips of her front hoofs. The frog protruded in a spongy condition yesterday; it is more dried up today, but colt does not seem able to put front feet flat on the ground and they cannot be forced to do so. The hock joint will bend only so far back, but it appears natural. The tendon in the rear of the hock seems to be short. Is the colt permanently deformed? Is there any treatment-—J. M. D., Wyoming.

New-born foals are sometimes unable to stand on their feet because of excessive knuckling on the fore-limbs. The cause is at present unexplained. One theory is that it is congenital contraction of the flexor tendons existing at the time of birth. Others ascribe it to abnormal position of the fetus in utero. Some claim that, it usually being found in large colts, arises from disproportion between the stallion and mare, the bony framework being excessively developed when the stallion is too large. One thing is sure: either the tendons are too short or the bones are too long. The first may be referred to either defective development or subsequent shortening of the tendons. Abnormal position in utero would probably interfere with development of the tendons and other joint structures. The colt being unable to stand on its feet rests its weight on the front of the fetlock-joint, and thus produces serious injuries. Local gangrene is liable to result from pressure and the colt is usually destroyed as a hopeless cripple. The abnormal position is usually seen on the first attempt to stand, but disappears under proper treatment in from eight to fourteen days. The great extensibility of the tendons in new-born foals favors early and complete recovery. It is necessary to practice forcible extension. For this purpose the colt should be cast, the foot straightened by exercise of reasonable force, and fixed in this position by application of plaster bandages or applying strong leather splints. In some cases a small leather shoe, provided in front with a well-padded iron splint has been successful. An iron brace may be made to fit in front, extending from close to the knee to the ground, parallel with the hoof. This can be kept in place by means of straps around the leg and must be well padded. Sometimes a shoe is applied with a rod extending in front about four inches long. Lastly, in extreme cases, the tendon may be divided, but this can only be safely done by an expert. Occasionally a foal will recover without assistance, but this is exceptional. Cases of this kind should receive immediate attention, for success will be in inverse ratio to the length of time that elapses after the colt is born.—G. H. G.

Need a Veterinarian.

Ans. to F. A. H., New Mexico:

There is nothing we could suggest to help you out in adjusting the trouble with your cow's udder. This would require a skillful operation by a competent veterinarian. As we understand your description of the trouble, it would be necessary to open the main duct of teat and close the small opening by sewing it up. This is an operation which should be done by a skillful veterinarian.—H. A. L.



Working Parts Easily and Quickly Reached

This is a leading feature with the Best Tracklayer. Every tractor owner will recognize at once the advantage of having the working parts of his machine within easy reach at all times. Particularly when he is in the middle of a big job. By the diagram above and the corresponding explanations below, we show how the principal working parts of the Best Tracklayer can be reached within a few moments with very little effort.

1 At the rear is a large port through which, when opened, the main bevel gears connecting main drive shaft and cross shaft can be easily reached.

2 Main drive pinions may be removed through the inspection ports in the sprocket wheel. This corresponds to a full-floating rear axle on an automobile.

3 On the side plates of rear housing are hand holes, one on each side of tractor, the covers for which are removed by turning a single hand screw. Through these holes the multiple disc steering clutches are quickly reached. If required, the entire side plates can be removed by unscrewing the bolts, which takes but a short time, as space above plates is perfectly clear for free action with a wrench.

4 Transmission gears and bearings are fully exposed by removing top plate of transmission housing to which is attached small oil tank. This is quickly done as bolt heads are clear of all encumbrances and pipe connections to tank consist of two easily detached unions.

5 Main Clutch is "dry" and hence needs no housing. Parts are therefore reached instantly.

6 Extra large inspection ports in the crank case enable you to make bearing adjustments easily and to remove pistons and connecting rods without "tearing down" anything or disturbing valve mechanism.

7 Rocker arms may be inspected by lifting hood placed over top of cylinders.

All other working parts of the Best Tracklayer are as readily accessible. But accessibility is just one of many features which have made the Best Tracklayer famous. These features are described in a catalog which we will be pleased to send you. If you are interested in tractors, send for it.

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K. HADDELAND,
Dunn Block, Great Falls, Mont.
Canadian Government Agent.

Ask Western Farm Life Service Bureau. Information free on all phases of farming.

Colorado State Farm Bureau News

Matter appearing in this department relates to the activities of the State and National Farm Bureaus, including official communications from the Colorado State organization and general reports, calculated to keep farmers informed regarding progress of this great educational movement.

The Transportation Tie-Up.

"The railroad tangle, with its resulting tie-up in grain movement, is costing the farmers of this country hundreds of thousands of dollars daily," says J. R. Howard, president of the American Farm Bureau Federation.

With as high as 25 per cent of last year's crop still remaining in the local elevators in some sections, and a totally inadequate movement of the new crop, local buyers find it necessary to protect themselves by wider margins. Never knowing whether they will be able to deliver grain when sold, and constantly facing losses through demurrage, breach of contract, excessive storage charges, and high interest rates, the local buyer feels called upon to offer the wheat producer prices much lower than those quoted at the terminal markets. Then again the differential between the terminal market price and the export price must be abnormally big, for the exporter must protect himself against losses incurred through delays in loading steamers. These margins are said to be twice as large as normally figured.

These increases in margins all along the line probably cost the farmer at the local elevator a total of 10 cents or more a bushel over and above the usual handling margins. When we consider that during the threshing season millions of bushels of wheat are offered to the local elevators daily, it can be seen how great is the actual money loss imposed upon the farmer through the transportation breakdown.

Neither is there any benefit to the consumer through this loss sustained by the farmer. It is all pure loss—a sacrifice to inefficiency. Flour, in fact, sells at a higher price today through the operation of some of these same inefficiency factors.

There is just one consolation to be found in the present transportation situation, so far as the farmer is concerned. His inability to sell his wheat at this time will probably put the price of wheat up. When he finally sells he may get a higher price. But this merely throws the loss over from the producer to the consumer. The big economic loss due to inefficient transportation—and we feel that inefficient labor must stand a big share of the blame—must be paid either by the producer or the consumer, or by both.

The railroad laborer who has wilfully cut down his volume of work and repeatedly struck for increased wages may wake up one of these fine days to find that the increases he has caused in the costs of food, clothing, and shelter more than offset the increases he has demanded in wages.

"There is no more damnable point at which labor can attack our economic structure, and, I might add, no surer way of cutting its own throat than by cutting down the efficiency and the carrying capacity of our arteries of transportation," says Mr. Howard.

One of the most lamentable features of the whole situation is the effect it all may have upon next year's crop. With much of last year's crop still on the farm, with little prospect of moving the present crop within a year, and with the local banks clamoring for liquidation of loans, there is little to encourage heavy seeding for the coming fall.

The world needs and will pay a good price for all the wheat we can produce next year. Present indications are that there will be a shortage in the world supply by next spring. Unless every encouragement is offered to production some may go hungry.

The railroads—both operators and workmen—must buck up and move the tonnage or become the objects of most drastic action in the near future.

Mr. Howard has just returned from western Canada, where he made a careful study of co-operative grain marketing on a large scale. The American Farm Bureau Federation has plans under way to effect a co-operative grain marketing system which will handle the bulk of the grain produced in the United States at a considerable saving to both producers and consumers.

Why Join the Farm Bureau?

It is improving the standard of swine in the county.

It is encouraging the dairy industry by distributing better dairy stock in the county.

It is securing better draft stallions for the farmers.

It is improving the beef cattle of the section by its purebred livestock association.

It is introducing better grades of sheep for the ranges.

It is introducing better strains of wheat.

It has encouraged the planting of purer varieties of corn.

It has its project for improving all varieties of grain grown here.

It encourages better farm practices.

It is fighting the pests in organized effort.

It is co-operating for better roads.

It is securing better returns for the members through co-operative buying and selling.

It is developing better rural advantages for all its members.

It is interesting the boys and girls in the farm life by taking them into partnership in the farm business.

It is assisting in making La Plata county farms the best place on earth upon which to live and be contented and happy.—La Plata County Farmers' Exchange Bulletin.

Rather Embarassing.

A young Californian often visited a leading Santa Barbara hotel because of its excellent honey.

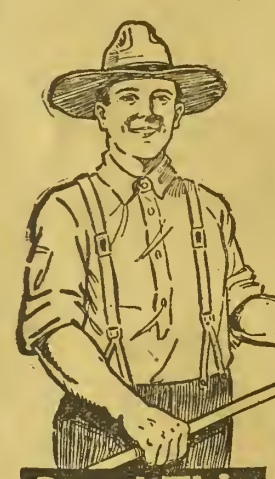
When the young man got married the wedding trip included this hotel, so that the bride might taste this ambrosial spread.

But the first morning there was no honey on the breakfast table. The bridegroom frowned. He called the old, familiar waiter.

"Where's my honey?" he demanded.

The waiter hesitated, looked awkwardly at the bride, then he stammered: "Er—Mamie don't work here no more, sir."

Let Western Farm Life Service Bureau help solve your farming problems. All questions promptly answered.



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Read This

Fayetteville, N. Y., Dec 31, 1917.
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F. E. Dawley.
P. S.—You may be interested in knowing that I won Gold Medal on alfalfa hay at the Panama Exposition.

The Gehl Cutter will enable you to save 25% to 35% on your feed bills by mealing your alfalfa on your own place at little expense. Feeding alfalfa hay to your stock means loss because of waste. By cutting alfalfa into meal or chop, you produce a feed equal to bran in feeding value. It can be fed to your stock, horses, sheep, hogs and poultry without waste. The chop requires less storage space, and can be cut for less than the cost of baling.

Special GEHL Mixing Attachment

The lower illustration shows special device for mixing the meal with molasses or with other feeds as it is cut. Thus you can get a concentrate feed at low expense. One of the greatest improvements ever put on a cutter.

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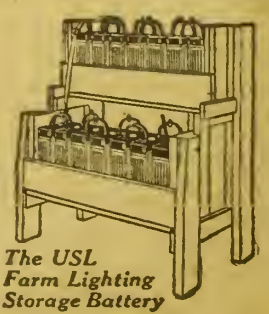


The USL Farm Lighting Storage Battery

The Harlequin Cabbage Bug.

The recent and numerous inquiries that have been received relative to the peculiarly colored insect attacking and killing cabbage, radishes, horse-radish and other garden crops indicates a rather severe and general outbreak of what is known as the Harlequin cabbage bug. This insect does its damage by puncturing the foliage of the plant in question and sucking the sap. It belongs to a class of insects that cannot be poisoned by stomach poison, and consequently must be controlled by a contact or a preventive method. The beak of the insect is inserted into the plant tissue and the injury done thereby causes the plants to shrivel, wilt and finally appear as though destroyed by fire. The destructiveness of each individual is quite enormous and a very few bugs will very quickly destroy any small pant. Entire fields of cabbage are very often destroyed in a short time when this pest occurs in any great numbers.

The injuries of this pest were first recorded in the southern states and it was probably introduced into this country from Mexico or South America and gradually spread along the Atlantic Coast to Delaware, and is now spreading north and west. It feeds upon a variety of cruciferous plants and when these are not at hand will feed upon almost any green herbage and reports include several species of trees. The adults spend the winter in rubbish near the place of infestation and become very active early in the spring, feeding first on wild mustard and other closely allied weeds; later they attack cabbage, cauliflower and other cruciferous plants.

The adults are very showy insects, shield-shape, having dark portions which are shiny black or dark blue and lighter portions of bright yellow or red. Shortly after emerging in the spring they lay their eggs upon food plants in somewhat regular masses in two rows, averaging twelve eggs each. This is generally on the underside of the leaf. The eggs are white and cylindrical in form and have transverse black bands. In general appearance they resemble miniature barrels.

The young or nymphs of this pest resemble the adults in color and shape. They moult or shed their skin five times during their period of development. At the last moult, the wings come into evidence. The young feed upon whatever available food there is at hand and require about two months to complete the life cycle. In Colorado there is probably but two broods a year.

As this insect inserts its beak into the tissue of the plant and sucks the juices directly through a tube, we cannot expect it to be killed by a stomach poison, and it is difficult to destroy it by our standard contact sprays such as kerosene-soap emulsion or Black Leaf 40. We must then resort to preventives, hand-picking or trapping. The former may be easily accomplished by clean cultivation in the fall and early spring and the latter by leaving cabbage leaves or other cruciferous plants in the field late in the fall. This will furnish a protection for the adults and they will collect in this debris to spend the winter. Here they may be destroyed later. It is sometimes a good plan to plant a row of mustard or kale to attract the first appearing adults. These may be hand-picked early in the morning before they become active, or they may be sprayed with pure kerosene. This of course will kill the plants and should not be used on garden truck.

This insect does not pass the winter in Colorado unless it is in the extreme southern portion, consequently a great number of infestations are due directly to migration, which is accomplished by flying.—Chas. R. Jones.

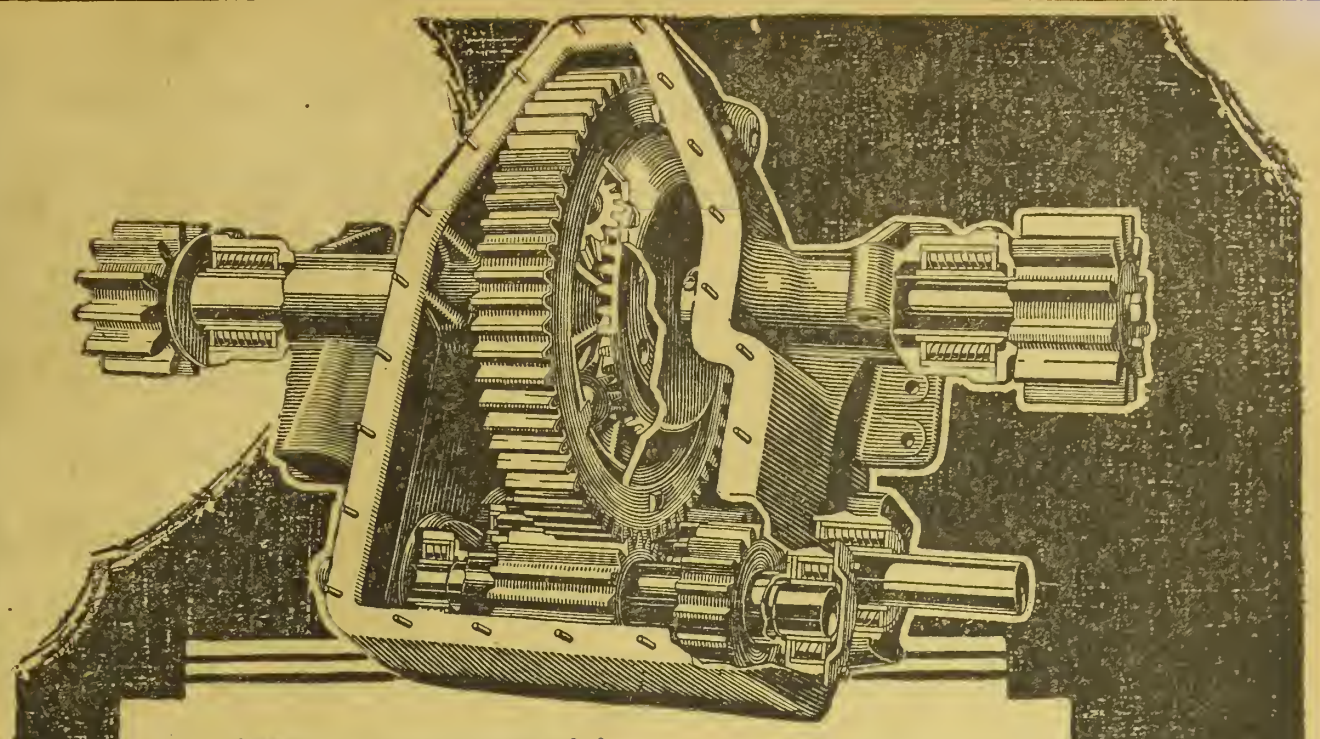
Comment by Farmer Putnam.

(Continued from Page 9.)

no fleas in southern California? As fur earthquakes, why I'll tell you honest mister, they don't amount to nuthin' Why I've got more shakin' up on one of your Colorado tourist highways in the last two days then in all the temblors we've had in ten years in Los. I'd miss the little jars if it wasn't fur your chucky roads. Your country seems quite homelike to me except that I don't like to be jarred up so constantly. You see we only have a occasional quiver where we live, but drivin' over them roads of yours why life is just one long drawn out earthquake."

Well I had to admit he was half right.

Thos Jefferson Putnam.



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The OilPull transmission is *built* right. The shafts are made of chrome steel—heat treated—ground to the one-thousandth part of an inch and mounted on Hyatt Bearings. The gears, too, are made of a special wear-resisting steel and are case-hardened.

Performance has proved the value of the OilPull transmission—many of the first OilPulls built back in 1909 are still in operation with their original transmissions still going strong and good for many years more.

So the OilPull transmission is but another proof of OilPull quality — the kind that makes the OilPull tractor cheapest in cost per year of service.

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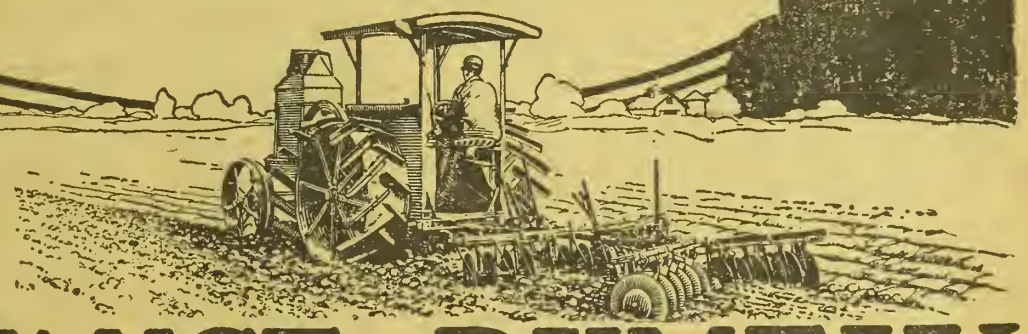

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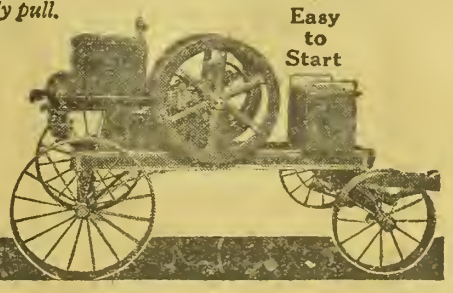

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Dairying and Hog Raising

H. A. LINDGREN

All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, Western Farm Life, Denver, Colorado.

Making Silage.

This is the time of the year to plan on the silage making. Crops will soon be ready to put up and a few suggestions might be helpful especially to the man who is putting up silage for the first time. The crops we are concerned with are corn, sorghum, Russian sunflowers, or a mixture of grain and peas. The corn crop is the most common. It has been found that a plant that is mature carries the most food value. However, one of the important qualities of silage is its succulence. For that reason it should be cut when the stalk is still green, but when the grain is fairly well matured.

At this stage the kernel is well dented and hard. The lower leaves of the plant may be brown. If taken at the proper stage there will be enough moisture in the stalk to preserve the silage, while if it is dry when put in water should be added. One of the ways most commonly used is to tap the blower and put the hose through it, letting a small stream of water run as the cut corn is blown through it. Some moisten the silage with a hose inside the silo. This usually takes an extra man, however, to handle the hose.

The sorghums are not usually ready to cut until after the corn is cut. If cut too soon a sour silage will result. The seeds should be fairly well hardened, at which time the stalk is filled with sufficient sap to preserve the silage.

In the case of sunflowers, it is a little difficult to say which is the most preferable time at which to harvest them. It is recommended by the Montana station that they be cut when the seeds are one-half to three-fourths in the milk stage. The stalk becomes woody and hard if left too long. It is therefore suggested that the stalk be watched as well as the seed.

In case any of the silage crops become frosted before they are cut for the silo, they should be cut immediately. If not in position to put crop in the silo at once, cut it and leave it on the ground. Water should be added to frosted crops when ensiling. If allowed to stand in field after being frosted, the leaves will be whipped by the wind and a great deal wasted.

The silo having been repaired if necessary, by tightening the hoops, painting the inside or otherwise, is then ready for the crop. Remember, good silage depends on an airtight container in which the silage settles evenly and free from air pockets. This brings us to the subject of tramping. Silage will pack best if cut in lengths of ½ to ¾ inches. In order to accomplish the best results in cutting, the knives should be kept very sharp. In tramping some suggest using three or four men in the silo. If these men work they will pack it well. It is not a job to be slighted. Two good men to tramp and another to distribute the silage over the silo can do effective work in keeping the silage well packed. It should be kept well filled in the center and the outside is where the most tramping is needed, otherwise the silage in settling will be apt to settle away from the walls and cause an air space around the outer edge which results in spoiled silage there.

The machinery used in cutting and filling is rather expensive at the best. It is far more practical if it can be purchased co-operatively by several silo owners. The expense for all the machinery falls heavy on one individual for the short time it is used each year. Success in making silage means close attention to the details.—H. A. L.

Inspect Silo Before Filling.

Before filling is started, the silo should be examined for openings in the walls where air might enter and spoil the silage, and for rough places which might prevent proper settling of the corn. The hoops on stave silos should be tightened sufficiently to close all cracks, but they should not be tight enough to buckle the staves. The staves will absorb some moisture from the silage and the hoops should be released somewhat a few days after the silo has been filled to prevent the swelling staves from buckling or breaking the hoops.

The walls of concrete silos should be inspected for cracks, sand pockets and rough places. If the surface of the wall has become roughened a thin coating of rich cement will make them smooth. Metal silos may be prevented from corroding by an application of paint.

A careful inspection of the cutter, engine and corn binder previous to starting work will sometimes save unnecessary stops and repair bills. All machinery should be put in good running order, and enough teams and wagons provided to keep the cutter running steadily.

Milk Substitutes for Calves.

The need for home-raised calves has led to a search for a "milk substitute." While the feeds which have been tried have given some degree of success, there has not yet been found a complete or entirely satisfactory substitute for milk, says W. W. Swet of the University of Missouri College of Agriculture, it is doubtful if any article or combination of articles that will completely take the place of milk in the diet during the first two months of the calf's life can be found.

There are a number of so-called milk substitutes on the market. Most of them are sold in the form of calf meal, and with proper care many of them will give good results. It should be clearly understood at the outset that calves raised on calf meals will not be as fat and sleek as those raised on milk. They will be growthy and healthful, however, provided they are given proper attention. Calf meals can be bought from

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MANHATTAN ELECTRICAL SUPPLY CO., Inc.
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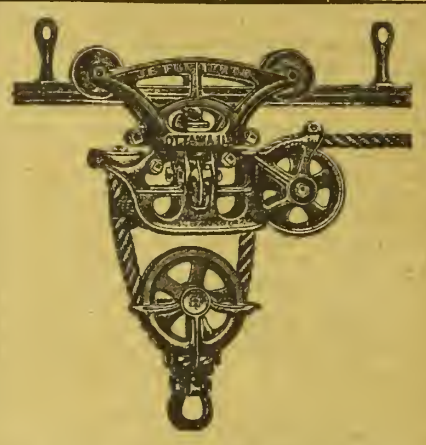
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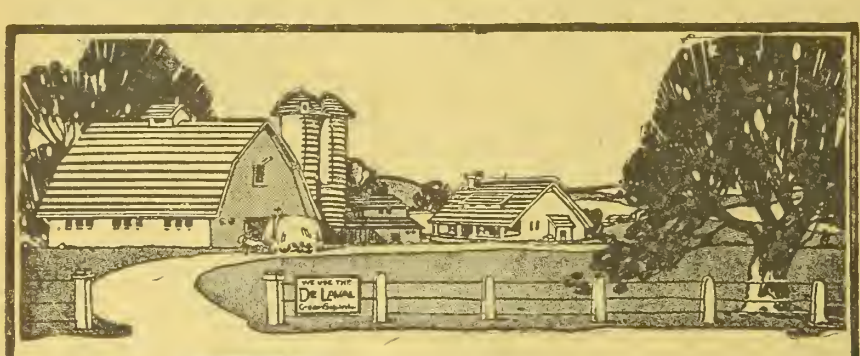

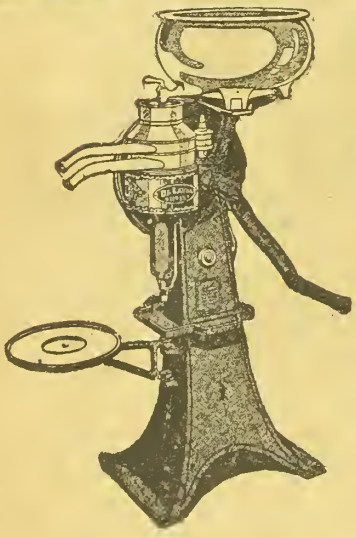
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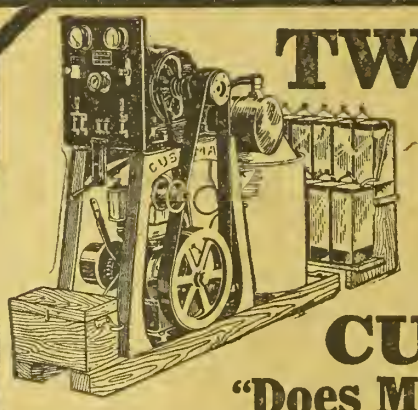
TWO IN ONE
Both Electric Light and Engine Power
The Cushman has a big advantage over all other farm lighting plants, as it gives the farmer an efficient and dependable electric lighting and power plant, and also a portable or stationary engine power plant —both in one and for one price.

CUSHMAN
"Does More" Light Plant
We call the Cushman Plant the "Does More" because it does more for the farmer.
It does more because it gives you Light, Lamp-Socket Power and Portable Engine Power in one plant.
It does more because there is less vibration with a belted outfit like the Cushman, and consequently fewer adjustments, fewer repairs and less service.
It does more because the same engine—the 4 H. P. Cushman All-Purpose Engine —may be used for work all over the farm, or be attached to binder, potato digger, corn binder, or other machines.
It does more because other machinery may be run from clutch pulley of engine at the same time batteries are being charged by belt over flywheel.
You Know What Cushman Means
For ten years the Cushman name has stood for Farm Engines of the highest quality, and is favorably known to almost every farmer in America. The Cushman Electric Plant occupies the same position in the light plant field — combining the highest quality with the greatest range of utility. The Cushman Light Plant is not a new plant, but it has proved its reliability by years of service on American farms. It is the same plant that was selected by the War Department for use at various Army Posts. (347)
Send Coupon—Free Book
Cushman Electric Plants are built in various sizes. They reach you fully charged and ready to run.
CUSHMAN MOTOR WORKS
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If interested in Light Weight Engines ask for Book on Engines. Describes the Cushman line, 4 to 20 H. P., weighing only 40 to 60 pounds per horsepower.
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I am interested in a Cushman Light Plant. Would need one of about.....lights. Without placing me under any obligation, you may send me your book on Light Plants.
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Town.....State.....

local dealers at varying prices, or they may be mixed at home if the proper ingredients can be secured. In many cases the home-mixed calf meals are superior to the ones bought on the market, and as a rule they are considerably cheaper.

A calf meal, in order to give success, should be made up of ingredients that are easily and readily digested and that are not too expensive. A few of the most commonly used materials are: Fine corn meal, flour middlings, wheat flour (poor grade), ground rice, oat flakes, barley malt, cocoanut meal, linseed meal, flaxseed meal, cotton-seed meal, blood flour, blood meal, and dried skimmilk or skimmilk powder. Skimmilk powder is not absolutely essential and it is rather expensive, but many of the calf meals that have given the best results have contained considerable amounts of it.

Big Hog Show at Pueblo.

Since hog is coin, the Colorado State Fair officials have offered such inducements, such elaborate facilities for displays, such superb and numerous prizes in the swine department, that the showing last year was a marvel to all visitors. But this year the showing will be so much greater as to amaze even the breeders themselves. Pueblo is the place and September 19 to 25 the dates.

The early entries show all ages and classes of Poland Chinas, Durocs, Chester Whites, Hampshire, Berkshires and other varieties, and the entries are from all sections of the state and from state institutions, from associations and individuals.

Not alone are the state fair prizes large and varied, but the various swine associations of the country are offering large and varied premiums. Some of the associations are offering cash prizes running from $300 to $1,200.

Especial preparations have been made for the housing of the displays and for the caring for them in the most perfect manner. One of the very interesting features in the swine department will be the competitions for Boys' and Girls' pig clubs. This was carried out most successfully last year, and will be greatly improved this year.

Trades Purebreds for Grades.

In the interest of the Better Sires campaign, Mr. George LaGrange, the leading Jersey breeder of Mesa county, offered to trade a purebred Jersey bull calf for a grade or scrub bull to any man who was interested in getting a start in the purebred business. Through the local county agent, Mr. H. F. Meeker of Glade Park, Mesa county, heard of the offer and as a result Mr. Meeker is now the owner of a fine Jersey bull 11 months old, and without it having cost him a cent except the fee of having the bull registered with the American Jersey Cattle club.

The bull which Mr. Meeker received was in no way an inferior individual, but measuring up to the standards of the breed in every respect, being a very growthy animal for his age. He will make a fine start for a purebred herd which Mr. Meeker hopes to build up. Glade Park is the dry farming section of Mesa county, therefore it is rather gratifying to know that the man who profited by this generous offer of Mr. LaGrange is working under conditions that are not exactly the best.

Mr. LaGrange's end of the trade has already been consigned to the butcher's block to prevent further damage to livestock improvement in Mesa county.

Morgan County's Shipping Association.

The first shipment of livestock under the county shipping plan was a great success in Morgan county. Mr. Earl J. Yates, the manager of the association and a graduate of the University of Nebraska, is now on the job and has quite a number of carloads in sight for the near future.

The first shipment was made up of 33 hogs and 29 cattle. Among the cattle were calves, bulls and cows. The prices received were very satisfactory and considerably higher than could have been obtained through other local channels. The manager in this county spends his entire time in the shipping work. He receives 20 cents per hundred for his services and looks after all details in connection with it.

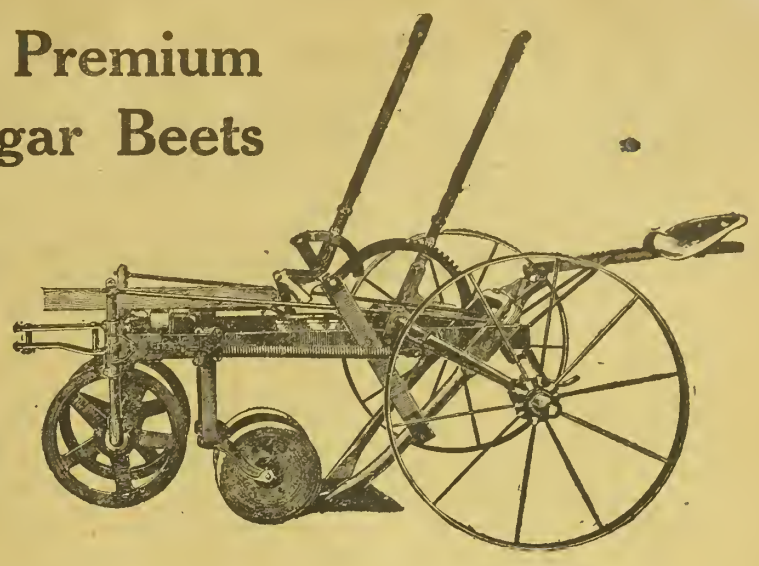
Several other counties are working toward the county association idea. By this means a man can be induced to accept the work as manager because it has enough to keep him busy and pays enough to make it an attractive proposition.—H. A. L.

Ask Western Farm Life Service Bureau. Information free on all phases

With Sugar at a Premium Save All the Sugar Beets

P & O

Riding Beet Puller



AFTER nursing a sugar beet field throughout the season, it would be the height of folly when it is time to harvest the crop, to use anything but the very best digger you can buy. With sugar soaring in price, figure out your loss if the beets are cut, bruised or destroyed by improper work in the last operation before going to the beet sugar factory.

Pulls All the Beets— Whole and Unbruised

The P & O No. 2 Riding Beet Puller gets all the beets, large and small, raising them to the surface, whole and unbruised. Drawn by two or three horses, and easily guided by the operator from the shifting seat, which in turn acts as a pivot for dodging to the right or left.

Simple, Strong and Dependable

The P & O Beet Puller has a number of features which adapt it to any beet section. Hitch adjustable for 2 or 3 horses; tongue has free lateral movement when puller is being operated, but is rigid when pulling appliance is raised for transportation; lifting bars can be swung in or out to get proper width for small or large beets, or to adapt them to loose or sandy soil; carrying wheels balance the frame; adustable for width of rows.

Furnished with Three-Horse Evener.

P & O

BEET SEEDERS
CULTIVATORS
PULLERS

P & O

LIGHT DRAFT PLOWS

For Horses or Tractors with Molds or Disks.

Lines of Unquestioned Merit

ASK THE INTERNATIONAL DEALER or write us for literature.

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For over three years field results have shown that it is not necessary now to pay over 20 cents per dose for an absolutely reliable

KANSAS BLACKLEG VACCINE

If you have used U. S. Products you KNOW that it "CAN'T BE BEAT" anywhere.

Our Aggressin does not clog the needle—you can use every drop.

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$44 Buys the New Butterfly Jr. No. 2½ Light running, easy cleaning, close skimming, durable. EASY TO CLEAN

NEW BUTTERFLY Separators are guaranteed a lifetime against defects in material and workmanship. Made also in four larger sizes up to No. 8 shown here; sold on

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and on a plan whereby they earn their own cost and more by what they save. Postal brings Free Catalog Folder. Buy from the manufacturer and save money. (21)

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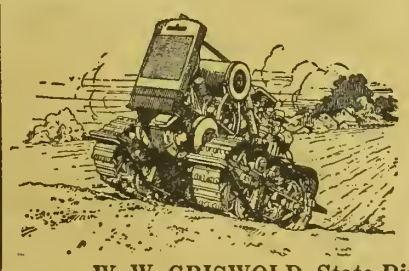

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On Your Own Land the Tremendous Advantage of

The Monarch

Creeper Type, with four mould-boards over other types. Three speeds, 1½, 2¼, 3½ miles. A GIANT FOR PULLING!! It has Manganese Steel Treads, which require no oiling or attention and Guaranteed for Two Years. It is Non-Slipping, Light Ground Pressure, Non-Packing, Short-Turning, Ditch-Regardless. Tractors in Denver, ready for immediate delivery. Medium sizes and prices. Absolute guarantee of successful field work.

W. W. GRISWOLD, State Distributor, 1735 Fifteenth Street, Denver.

More Silage with less Power

Absolutely guaranteed. Saves 30% cost. Thin, straight knives shear inward.

CLIMAX Ensilage Cutters

Prompt shipment. Write today for Free catalog and lower prices.

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$25.00 Sweep Feed Grinder | $31.00 Galvanized Steel Wind Mill.

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And How to Feed
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Tire Agent

We want one exclusive representative in each locality to use and sell the new Mellinger Extra-Ply, hand made tires. Guarantee Bond for 6000 Miles. (No seconds). Shipped prepaid on approval. Sample sections furnished. Do not buy until you get our Special Direct Prices. Write

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CORN HARVESTER One man, one horse, one row. Self Gathering. Equal to a Corn Binder. Sold direct to Farmers for 22 yrs. Only $28 with fodder binder. Free Catalog showing pictures of Harvester.
PROCESS CORN HARVESTER CO., Salina, Kans.

Flavor Runs in the Blood.

I differ radically with Mr. A. C. McCandlish in what he says about milk in the Dairyman of May 21. He says: "It's flavor is not affected by the feeds when they are carefully handled." And also states that "It is now generally believed that good feeds have no influence in the flavor of milk," and further states that certain feeds do not cause bad flavor unless they are fed after milking. Now isn't it plain that if bad feed causes bad flavor in milk, that good feed ought to cause good flavor?

Wild onion flavor in our milk suggested that thought to me more than thirty years ago and I began to experiment with feeds to make good flavor or to overcome bad flavor, and our success in controlling the flavor with the feed and keeping the flavor in by proper care has built up for us a most flattering trade in dairy products, poultry products, and meat products. Whoever tastes our butter doesn't need to be told that it isn't "salve" or nut butter (made especially by "nuts"). No matter where they live, this is the question that is put to us: "Can't you put us on your butter list?"

A retailer in Washington Heights, New York City, who caters to a Fifth avenue trade, writes: "Those soft roasters we get from you are the best we sell."—And we name the price. The same with eggs, and our local customers say: "How on earth do you do it?" and the answer for it all is: "We feed the flavor in and keep it there."

We had a special local trade in pork products. We marketed all hogs as lard, sausage, and sugar-cured hams. At the last of one season when we had just one hog left, we fed it for one week on sweet skim milk and sweet wheat middlings before it was butchered. We noticed the extra good flavor with the first mess of sausage and were not surprised to be complimented by our customers who got some of the sausage. "We thought you always made good sausage, but the last was the best we ever tasted. What on earth did you put in it?"

We were furnishing a case of eggs a week to a local hotel. Guests would inquire where they got the eggs they served. From that our trade has grown to where we cannot possibly take care of it. Some of our local customers will not eat eggs if they cannot get West View Farm flavor. Our outside market is Toledo, Cleveland, Cincinnati, Chicago, and New York. How do we do it? We keep no roosters with our laying hens. We keep a self-feeder in their house with ground feed in it made from corn 3, oats 2, wheat bran 1, and oyster shell (no tankage). The hens do not have access to the manure piles, for we have an enclosed covered barnyard. Every kind of filth and carrion is kept out of their way. Onion tops and onion waste is burned to prevent them getting a taste of them. The hens are kept in their house until noon and if the ground is muddy, they are kept in until the eggs are gathered, and with plenty of straw on the floor we are assured of clean shells. Dirty shells spoil the flavor.

A young man moved to town to work in a railroad office. He was fond of eggs but could not eat the store product, so bought a flock of hens to furnish good eggs. He had to buy feed, but feed was high and he tried to economize. One day he ran into me on the street and put this question: "Is it possible for a hen to lay a rotten egg?" I said, "No; a hen can not lay unless she is in normal condition and a hen in normal condition cannot lay a rotten egg. Why do you ask?" He replied: "Some of my neighbors say that sometimes a hen lays rotten eggs. Ours taste and smell like rotten eggs."

In reply to my question as to what he fed, he said: "Oh, kitchen swill and a little corn." I asked him as to whether he did not feed the swill in a trough and what they did not eat today was left there until tomorrow and more put with it. He answered in the affirmative, and I said to him: "Take that trough out and clean it and when you feed any table scraps (and table scraps are good feed), just give them what they will clean up at the time, but leave none to sour or get rancid. Feed as much grain as they need and furnish them with some good, sweet wheat bran." The next time I met him, the hungry look was gone and a happy smile took its place. "I am awfully glad," he said, "to know that a hen cannot lay a rotten egg unless you feed it into her. My eggs now are the best I ever tasted."

Another man in town had his chicken yard divided so as to keep green feed growing for them. One side he sowed in rape. When about six inches high he turned in his hens. The next morning they could not eat their eggs. His wife gave him the usual lecture about carelessness in gathering the eggs and leaving some under the broody hens, and threatened him with the flat iron if it occurred again. The next morning at breakfast he dodged the flat iron and said: "I know that every egg I got yesterday was fresh laid. May be it is the rape pasture. I will not turn them into it today and see." In two days the eggs were normal.

Our soft roaster trade was built to the very peak of the market on corn 3, oats 2, sweet wheat middlings 1, ground fine and mixed wet with sweet skimmed milk.

Flavor alone sells our butter and we have found that we can absolutely control the flavor with the feed. We always feed some grain and bran to overcome mild flavors that are disagreeable and we feed heavily with grain if we are feeding slippery silage, clover hay, clover pasture, or any of the legumes.

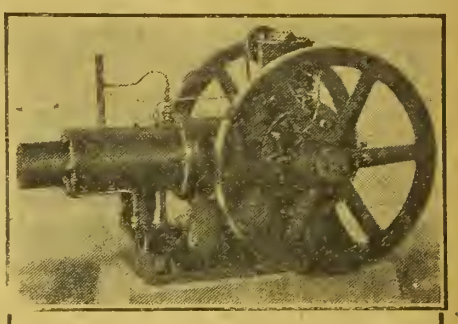
2,500 CALLS FOR OFFICE WORKERS

This is our record for the past twelve months. Now is the time to enter the business world. Trained workers are in great demand. Write for new catalog. Fall term opens September 7th.

Barnes COMMERCIAL SCHOOL

1605-25 Champa St., Denver.

Member of Association of Accredited Commercial Schools.



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An engine built in the west to solve western power problems.

No electrical equipment, no carburetor, no valves. Fool proof and economical. Runs on kerosene or low grade fuel oils. Starts quickly. Hundreds in use. Unlimited guarantee.

Buy a HASSELL and forget your engine troubles.

HASSELL IRON WORKS CO.,
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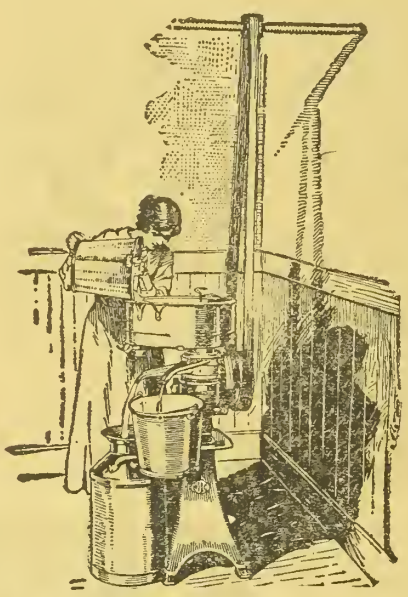
Manufacturers (for 35 Years) Engines and Pumps.



Getting Every Drop

WHEN you milk a cow you make it a point to get every drop of milk—to milk her as dry as possible. But after you have done this, do you try as diligently to get every drop of cream from the milk?

Skimming the milk clean is just as important as milking the cow dry. To do the latter successfully requires a pair of experienced hands; to accomplish the former to the best advantage requires a

Primrose Cream Separator

The Primrose saves every drop of cream. It is the only separator with two wide open cream outlets, unobstructed by a cream screw. The regulating screw is in the *skimmilk outlet.* It is easy to adjust because it works on the large volume of skimmilk instead of the small volume of cream.

Ask your nearby International agent about Primrose and — let us mail you illustrated catalog.

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(INCORPORATED)
Billings, Mont. Cheyenne, Wyo. Denver, Colo. Helena, Mon.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

Yes Sir-ee!

We made this cigarette to meet your taste!

Camel CIGARETTES

Camels have everything

any smoker ever had on his mind about an ideal cigarette—wonderful full-bodied mellow-mildness and a flavor as refreshing as it is new and delightful.

Camels quality and Camels expert blend of choice Turkish and choice Domestic tobaccos win you on merits. Camels blend permits you to smoke as liberally as you like without tiring your taste.

And, you'll make a quick note that Camels leave no unpleasant cigaretty aftertaste nor unpleasant cigaretty odor!

You'll prove our say-so when you *compare Camels with any cigarette in the world at any price!*

Camels are sold everywhere in scientifically sealed packages of 20 cigarettes for 20 cents; or ten packages (200 cigarettes) in a glassine-paper-covered carton. We strongly recommend this carton for the home or office supply or when you travel.

R. J. Reynolds Tobacco Co.
Winston-Salem, N. C.

These all make disagreeable flavors unless the cow is given time to chew her cud and transfer the souring food from the stomach into malted food in the digestive tract before milking her. When we feed good silage (and when silage is fed down six to ten inches a day it is good silage) and good grain, we milk while they eat and make the flavor our customers want.

If Mr. McCandlish is accustomed to butter made from pasteurized milk, then he is right about feed having nothing to do with flavor. If milk needs to be pasteurized to kill the bad flavor, the process also kills the good flavor and makes a neutral product that is the stuff we buy at the store and is not what people call good butter.

One writer asks: "What is in good butter?" And answers her own question by saying: "God only knows what is in good butter, but some of the things we know are in it are the morning sunshine, the sparkling dew drops, the crystal brook (plenty of water, 15 per cent), the delicious bluegrass, the sweet protein of the wheat, the waving oats, and the good old yellow corn." Sentiment, do you say? Some of these things we know put the perfume into the rose and the flavor into the maple tree that no man has been able to duplicate in the laboratory. And the flavor of good butter is equally as defiant of the chemist as the rose and the maple tree. When you want that delicate, delicious flavor of good milk and good butter, you must feed that flavor in and keep it there.—Geo. L. Hyslop, Ohio, in Hoard's Dairyman.

New Manager for Columbine Herd.

Mr. W. E. Cushner, who has been manager for Mr. Spencer Penrose, owner of the Columbine herd of Holsteins at Colorado Springs, has recently resigned, to take up breeding in Minnesota. Mr. Cushner has been very active in the development of the Holstein breed in Colorado and it is with regret that we learn of his decision to leave the state. His place has been taken by Chas. C. Wilson, who comes from the Carpenter Ranch of Oswego, Kan. He brought with him a new herd sire for the Columbine herd. This sire is a 4-year-old and is known as Sir Pietertje Ormsby Fobes. He was senior grand champion bull at the Kansas livestock show last winter. He was purchased from Sam Carpenter, a well known Holstein breeder of Oswego, for $15,000. He was sired by Sir Peitertje Mercedes 37th, the $100,000 bull. He will be remembered as the bull bred by John E. Erickson of Waupaca, Minn. A brother to this bull purchased by Mr. Penrose heads the Fred Pabst farm herd at Oconomowoc. The grand dam of the bull produced 1,152 pounds of butter in a year and 25,000 pounds of milk.—H. A. L.

Farmers and Business Men on Annual Auto Tour.

(Continued from Page 5).

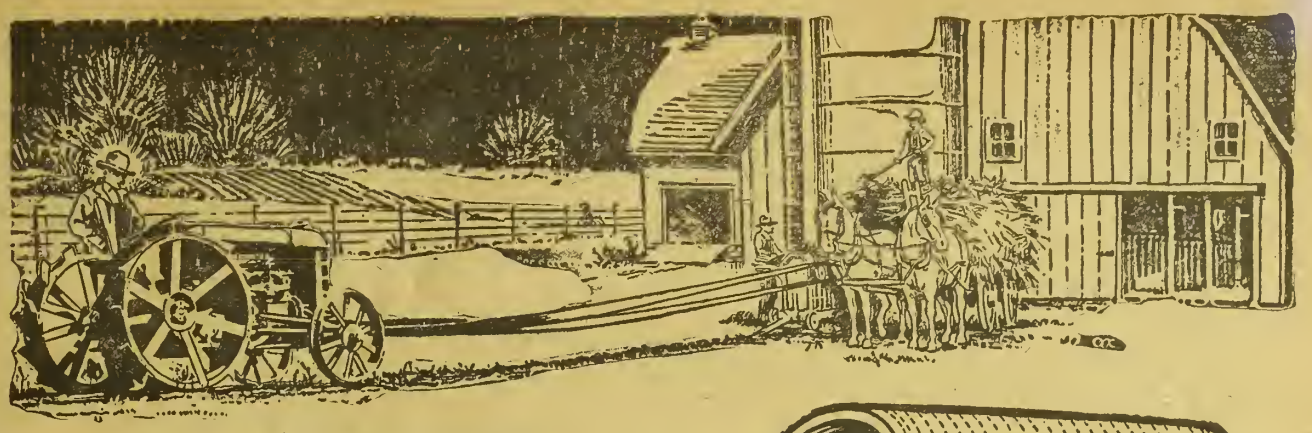
development of agriculture and helping the farmers in El Paso county. The organization is headed by James Gauld who is the manager of the Stratton Home farms. This tour was under its direct supervision. It goes to show that the Farm Bureau, when rightly formed, is not dependent on a county agent for its maintenance, but rather it is the power behind the gun in county agent work. It is an organization that has for its platform the upbuilding of agriculture under a broad policy. It is this organization that is going to uphold the farmer's interest by placing the business of farming on a basis where it must be recognized for its importance to civilization. Still it does not seek to destroy other business to attain its ends. It is certainly commendable to see the interest maintained in the El Paso county organization. It will be of untold value to the new county agent who is soon expected on the job.

The success of this tour is due largely to the efforts of President James Gauld, Mr. H. W. Hailey, field representative of the El Paso County Democrat; Mr. E. E. Jackson of the Chamber of Commerce, and W. H. Paul, former president of the farm bureau, and the communities visited.

She Had Pop's Number.

This chap sat in a fashionable coiffeur's shop with his little daughter, while his wife was having a marcel wave put in her hair.

The little daughter, as she played about, patted her father's bald head and said in a loud voice that all the ladies who were getting waved could hear: "No waves for you, daddy—you're all beach."



More Profits with Silage-

Use a Fordson Tractor and a Little Giant Belt

Not only does the making of ensilage furnish a supply of exceptionally good, economical feed for live stock but it clears the corn field for an early start the next season. It's another step toward more efficient, more profitable farming.

And when you belt your Fordson to your ensilage cutter, be sure it's a Little Giant tractor belt that transmits the power. Little Giant belts are specially designed for exclusive use with the Fordson and combine the features that enable the tractor to develop a steady, even flow of unfailing power through its belt pulley.

The Little Giant grips the pulley like the clutch of a giant hand. There is no slippage and wastage of power even when the ensilage cutter is overloaded. The Little Giant is an endless belt so there is no pulling out of belt ends and no delays for relacing. The Little Giant is a special treated, canvas belt and is unaffected by the moisture, heat and exposure a belt must meet in farm work. An exclusive feature is the extra stitching which resists the effects of edge wear and greatly lengthens the life of the belt.

You can buy a Little Giant from your local Fordson dealer—save the expense and delay of sending away for a belt. Ask your Fordson dealer to show you a Little Giant belt, or write us direct for complete information.

United States Rubber Company
Mechanical Goods Division
Distributed by

MOUNTAIN STATES TRACTOR CO., Denver, Colo.
VOLLMER BROS., Colorado Springs, Colo.

Sell Your Milk---and Feed

A. & C. Calf Meal

It Costs Only One-Third Of What Your Milk Sells For

It contains all necessary food elements to fatten calves quickly and keep them in good condition. Most dealers carry it in stock or will order it for you.

ORDER FROM YOUR DEALER
IN 25, 50 OR 100 POUND SACKS.

If your dealer cannot supply you we will ship you direct. A. & C. CALF MEAL is sold with a guarantee to give results or money refunded. A trial order will prove that you can raise better calves for one-third what it now costs you to raise them on milk. Manufactured and guaranteed by

ADY & CROWE MERCANTILE CO.
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Treat All Seeds

Take no chances. Smut is a common disease which usually decreases the yield of grain as much as 20%. *Formaldehyde* is endorsed by the U. S. Department of Agriculture as the standard treatment of seed grain, to prevent smuts, fungus growth, potato scab and black-leg.

FORMALDEHYDE
The Farmer's Friend

Insures a full yield because it destroys all forms of smuts and checks all plant diseases known to affect grain crops. Can be used also on the soil. One pint bottle of *Formaldehyde*—from the Laboratories of the Perth Amboy Chemical Works—treats 40 bushels of seed. New hand-book just issued free.

Perth Amboy Chemical Works
709-717 SIXTH AVENUE NEW YORK 3

Western Farm Life:

I just received your letter reminding me of my failure to renew. I certainly intended to renew at once, but laid your letter and cards aside and forgot all about it, so am glad you wrote again. I like your paper fine, therefore enclosed you will find two dollars for a five years' renewal. So send me the rubberized apron as premium, and thank you for the cards.—H. F. Schneider, Westcliffe, Colo.

The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Farewell!—But Whenever You Welcome the Hour.

Farewell!—but whenever you welcome the hour,
That awakens the night-song of mirth in your bower,
Then think of the friend who once welcomed it too,
And forgot his own griefs to be happy with you.
His griefs may return, not a hope may remain
Of the few that have brightened his pathway of pain,
But he ne'er will forget the short vision that threw
Its enchantment around him, while lingering with you.
And still on that evening, when pleasure fills up
To the highest top sparkle each heart and each cup,
Where'er my path lies, be it gloomy or bright,
My soul, happy friends, shall be with you that night;
Shall join in your revels, your sports, and your wiles,
And return to me, beaming all o'er with your smiles—
Too blest, if it tells me that, 'mid the gay cheer,
Some kind voice had murmured, "I wish he were here!"
Let Fate do her worst, there are relics of joy,
Bright dreams of the past, which she cannot destroy;
Which come in the night-time of sorrow and care,
And bring back the features that joy used to wear.
Long, long be my heart with such memories filled!
Like a vase, in which roses have once been distilled—
You may break, you may shatter the vase, if you will,
But the scent of the roses will hang round it still.

—Sir Thomas Moore.

The Skinny Children.

"Skinniness is a matter of height and not of age. And there are far too many children who are too skinny for the length of them, no matter how old or young they are." Dr. Caroline Hedger, who is working through the Elizabeth McCormick Memorial fund, established in Chicago partly for the treatment and care of malnourished children, made this statement at the recent national convention of home economics teachers and workers in Colorado Springs.

She went on to say that there were two excuses oftenest heard for skinny children which had no foundation and which showed an almost criminal ignorance of the reasons for such thinness. "Oh," a mother will say, "Johnny's growing very fast, you can't expect him to be fat!" Or another parent will remark, "Johnny looks just like his father's people; they're all very thin." Now let's see what Dr. Hedger said about these excuses we've all heard, or given.

In answer to the first one: It's obvious that Johnny is growing rapidly, but if he's putting on height it's just as important that he put on weight at the same time, which will be in proper ratio to his height, in order that the growing cells may in no way be deformed, or undernourished. He'll probaby look thin enough even then, but there should be a development of weight to correspond to the lengthening of his bones, or else all the cells are not getting as much growth substance as they should have, and he will be more susceptible to disease than he should be. If he's fed the proper sorts of food in amounts which he needs, there is no reason why he can't grow in two dimensions at once.

As for the second excuse, probably the mothers of all Johnny's fathers' people have said the same thing and so allowed a certain family weakness to develop. For being thin, is not a sign of anything except a weakness in securing or assimilating nutritive foods. And there may be a definite tendency toward disease evidenced by this thinness, against which every thin muscle in Johnnie's body should be developed for resistance.

Now mothers are asking, "Yes, but what shall I feed Johnny?" With different children the diet may require a little different handling, but all children need milk and its products and vegetables. A great many children do not seem to like these foods as well as they should; but when a mother admits that, she is admitting that she hasn't had patience or ingenuity enough to overcome the dislike. For unless the child is positively poisoned (and that happens in very few cases), the dislike can be overcome. Wouldn't it be worth while to see Johnny even more robust than his father's people and know that his body has been given every chance to resist disease, even if it does take effort?

Dr. Hedger showed some interesting pictures of the "before and after" effect of some treatment, and some cases looked perfectly hopeless to begin with and yet turned out with as rosy a radiance of health as any child could have. Some had to have adenoids and diseased tonsils removed first, but all were given particular attention in regard to the food they ate, for most modern children's doctors say, "Tell me what a child eats and I'll tell you what he is and what he may become."

At Last—A Respectable Occupation.

Did you know that all these years that women have labored on farms from sixteen to twenty hours a day, washing, baking, mending, scrubbing, churning, cooking, sewing, furnishing, gardening, poultrying, milking, and all the other participles in the English language, she yet has had no occupation? No, it really wasn't; it was just "keeping house," and as such had no respectable right to an occupation name in the census keepers' books.

Walking 457 miles a year for water and lifting 32½ tons of dead weight in so doing wasn't an occupation; it was merely keeping house. Pioneering on homesteads and being everything from housewife and mother to carpenter or veterinary surgeon has never had dignity enough to be called an occupation; it has just been "keeping house."

But this year even Uncle Sam and the census taker have revised all their old ideas and have put in a new column under "occupations" and it has been labeled "housekeeper." So at last, as one of the speakers in Colorado Springs at the home economics convention put it, "we are respectable, we have an occupation!"

But that isn't all. In one of the leading women's magazines lately an article appeared which had to do with the actual money value of a housekeeper's labor. He proved to even the most mid-Victorian man that this labor is really productive in the world's labor markets. Depending upon the size of the man's income, the smaller it is, the more labor is performed at home by the wife, the actual labor of getting meals, caring for children and caring for a house represented just so much money produced. A woman on the farm earns in labor, by producing that labor anywhere from $1,800 to $2,800. And if she is worked to death by useless hardships in lack of conveniences or extra

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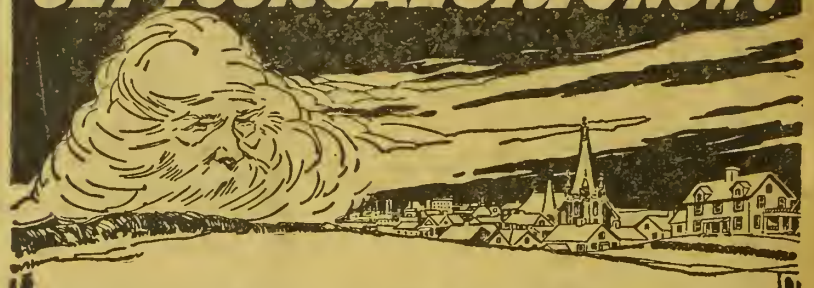

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work, the world has lost just that much money in labor. There isn't space here to give all the arguments; but it wouldn't be safe for any man to put up a negative side of this case to those of us who really believe it.—E. D.

Summer Vegetables on the Menu.

Summer vegetables have an important place in our dietary that people are too apt to under-estimate. We do not know the value from either a health or an economical standpoint of a good garden. I said to a neighbor the other day, a farm woman of several years' experience, "I suppose you have a good garden this summer?"

"Why, just ordinary, the usual things—lettuce, radishes, peas, and of course, a big field of beets, onions and potatoes. Later on we will have lots of melons."

"Of course, but they are for marketing purposes. You can make money raising them. But are you not raising any vegetables for your own use, to supply your own table and thereby lessen the food cost?"

"Oh, we don't care much for garden stuff."

Don't care very much? After I ate dinner at her house one day I understood why her family did not care much for garden stuff. There was a big dish of lettuce and young onions, another of radishes, fine scarlet ones; and in a vegetable dish a lot of asparagus cut up and cooked with bacon and vinegar and called "asparagus greens."

Such succulent, tender asparagus, too! I almost listened to hear it utter a protest. Why is it so few people know how to cook this delicious vegetable? Out here in this locality there are just two ways of cooking asparagus: as greens, served with bacon fat and vinegar, or cut into short lengths, stewed and covered with a white sauce. They seem to know nothing of the most delicious of all ways, where you save all the mineral salts by boiling it in bunches in salted water till tender and serving on dipped toast with melted butter poured over it.

Lettuce, of course, is appetizing whether served as a crisp salad with either a boiled or mayonnaise dressing, with vinegar and sugar, or vinegar and oil. Wilted lettuce is good too, if it did not take so much for a meal. I wonder if our young girls know how beautifying lettuce is for the complexion? If radishes are crisp and tender and they are worthless unless they are, they are welcomed at any breakfast or dinner table. Some people like the long white ones sliced lengthwise and fried in oil or butter, but I prefer mine plain without frills.

We all enjoy a dish of spinach, yet how few country gardens possess a bed of it. Old-fashioned greens should find an occasional place on the menu of every well-intentioned, health-loving family during the spring and early summer, and they are fine complexion beautifiers too. Some of our commonest weeds make the finest greens, of which the best known are lambsquarter, sour dock, mustard or purslane, beet tops are hard to beat, too. Both the garden and water cress are fine, and I nearly forgot to mention the humble, despised dandelion, pest of the lawn, and eagerly sought by our colored friends, next in favor to a juicy, red-ripe watermelon.

What is nicer than well-sweetened stewed rhubarb, or a fat rhubarb pie? But if you wish a pie par excellence do not stew and thicken it before putting it in the crust. Simply cut it in short lengths, heap on the lower crust put on a generous lump of butter, a cup of sugar, and a sprinkling of flour to prevent the juice running over, bake in a good oven thirty or forty minutes and you have a real pie.

Onions, beets, string beans, peas, are all coming on now, with early turnips, carrots, cauliflower, new potatoes, summer squash, peppers, sweet corn, lima beans, early cabbage, cucumbers and fresh tomatoes to follow in quick succession. What a wealth, what a variety to choose from! All these before the salsify, egg plant and melons are ready. Let us see what we can get out of this profusion for dinner:

Peas boiled twenty minutes in salted water, seasoned generously with cream or butter, and served in cases or plain with lamb or mutton chops. New beets and carrots, also early turnips, are best with a drawn butter sauce. Peas should have a teaspoonful of sugar added when they begin to boil. Turnips are much improved by the addition of a little sugar. Small new cabbages, cauliflower, carrots and new potatoes require either cream or a butter sauce. If butter, and to be at their best, all summer vegetables must have plenty of butter for seasoning. And even then it is economical, for where well-seasoned vegetables are used little meat is required.

Summer squash is tasteless without considerable butter. String beans should be boiled with meat. Sweet corn and lima beans are both nourishing; when combined with succotash, they are fit for a king's dinner. Cucumbers and fresh tomatoes are cooling and not in the least bit hurtful if perfectly masticated before swallowing.

Peppers, egg plant and salsify come later and deserve a special article.

"Give them a 'write-up' on the way to boil potatoes," says the boy.

"But every woman can boil potatoes."

"You're mistaken, every woman can not. If you had been with me yesterday"—the rest of it was lost as he went out the door.

But I can foresee the inevitable coming.—Carrie E. Frederick, Montrose, Colo.

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Puppy's Dortha, owned by Frank E. Lynn of Perrydale, Oregon, has established a new world's record as junior 3-year-old. She produced 994 pounds of fat from 17,904 pounds milk in 365 days. This record was not forced, but was made under ordinary conditions on this farm. This record again shows the caliber of Oregon Jerseys.—H. A. L.

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IMPORTANT — WHOLESALE IMPLEMENT, farm machinery and motor truck company, can use the services of several practical farmers with car to call on farm trade on leads furnished by office. Big pay, pleasant work. Investment necessary. Box 2-C, care Western Farm Life, Denver.

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SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

AUTO AND TRACTOR SCHOOLS.

THE DENVER Y. M. C. A. AUTOMOTIVE School guarantees satisfaction in teaching these well-paying trades: Auto and Tractor construction and repair, oxy-acetylene welding, vulcanizing (including truck pneumatics), and after Sept. 1, storage battery building. Day and night; School backed and supervised by Denver automobile industry. 600 students last year. Our object is service, not money-making. We charge less and give more personal attention. If you are mechanically inclined, write for descriptive booklet.

Land Banks Find Strong Defenders in Congress.

(Continued from Page 4).

plies are herewith reproduced for the information of farmer-borrowers:

From Congressman Timberlake.

Western Farm Life:

Permit me to acknowledge receipt of your letter of the 22nd inst., also to advise of receipt of the Western Farm Life under date of July 15th with the articles relative to the shutting off of loans by the Federal Land Banks, and I agree with you that this attack has been largely brought about on account of the active opposition of the American Mortgage Bankers' Association.

As one who from the beginning gave this act my unqualified support, I have met with firmness the attacks that have been made against it, and I shall continue to do so, for I believe it is one of the meritorious measures that Congress has enacted. The facts sought to be attained, namely, of giving the farmers that credit and low rate of interest to which in the past they have very largely been denied, and I shall continue to meet all opposition to any change in the tax provision, regardless of what the decision of the Supreme Court may be on the subject. And I believe the friends of the measure are sufficient in strength to enact into the law a provision fully as beneficial to the farm borrower as are the provisions of the present law.—Charles B. Timberlake, M. C.

What Senator Thomas Says.

Western Farm Life:

I am in receipt of your letter of 22nd together with copy of Western Farm Life of earlier date. The subject matter of these communications has received my consideration for some time past and I am awaiting the Supreme Court decision with some interest. Until it shall have made its pronouncement nothing can be done. When it has decided we can and of course must be guided by its views. I am unable to perceive any great merit in the case, however, since the federal exemption would seem to be clearly within the powers of the Congress.—C. S. Thomas.

From Land Bank Officers.

Western Farm Life:

My attention was called yesterday to a copy of a letter which you wrote to Hon. C. B. Timberlake, Member of Congress, Sterling, Colo., also article which you have written in Western Farm Life and the editorial in the same paper, all discussing the operation of the Federal Farm Loan System, the present situation and the future possibilities, as well as the needs of the system. I was very much pleased to receive these articles and to read your discussion of the subject.

You have presented a clear case with respect to the needs of agriculture and the benefits to be derived from the federal system as established. The articles demonstrate that you thoroughly understand the law and its operation. All we need to do in this work is to present the facts. When they are stated clearly and to the point, they prove the case.

Not enough of our people realize the tremendous importance of stabilizing agriculture and assisting the farmers with capital investment in the proper manner. Not only must our agricultural industry be maintained at its present level of efficiency, but it must be extended to keep pace with the growth of population and the ever-growing demands made upon it. Conditions must be brought about so that hired men and renters will become farmers and home owners. The farmers who are already on the land must be made more secure in their investment and endeavor. Extra cost and expense must be eliminated so that the margin of net return may be increased.

You are carrying on a splendid work in taking up the fight for the farmers of our country. You have taken time and trouble to study the law and the system so that you can intelligently present the truth to the reading public. Why should a few men, in order to further their own personal, selfish interests, be able to block a great, practical, constructive movement such as properly financing the agricultural industry, which is the basic industry of our country? After reading your articles yesterday, I could not refrain from writing you a personal letter to commend you and encourage you in the splendid work that you are doing. —E. G. Quamme, President, Federal Land Bank of St. Paul.

Western Farm Life:

Your courteous favor of the 23d inst., with copy of letter to the Hon. Edward T. Taylor, Congressman, Glenwood Springs, Colo., of July 27, 1920, attached, has been received and noted.

We very much appreciate the letter written to Congressman Taylor, and hope that other farm papers are writing articles to their Congressmen and Senators, bringing to their attention the importance of preserving the life of the Farm Loan System.

The Mortgage Bankers are waging a useless and losing fight against the System; at the same time, we deem it necessary that all hands join in an endeavor to arouse the public to the necessity of doing the needful at once to permit the Federal Land Banks to function again. —C. C. Gaspard, Secretary, Federal Land Bank of New Orleans.

Western Farm Life:

We have yours of the 23rd instant, enclosing copy of letter written to your representatives in Congress, also copy of your valuable paper containing articles pertaining to Federal Land Banks.

We are glad indeed to note the interest you are taking in this matter and trust your representatives are favorable to the Farm Loan system.

We have read with interest your articles and note the satisfaction expressed by the farmers in your state. You are correct. This is not a political question and do not believe it is regarded as such, but it is a real aid, especially to the farmers of the West. We are all hopeful, and expect a favorable decision by the Supreme Court. Again thanking you for the interest you have shown, I am— A. N. Rochester, Secretary Federal Land Bank, Wichita, Kan.

Western Farm Life:

We have from you a copy of a letter addressed to Hon. Edward T. Taylor, M. C., Glenwood Springs, Colo., for which we wish to thank you most sincerely.

We have received and read many articles and letters relative to the present perplexity of the Federal Land Banks, but your letter hits the nail a little more squarely on the head than anything which has thus far come to our notice.

Again we thank you and wish we could show our appreciation in a more practical way. You are certainly doing a good service for the needy and worthy borrowers and I wish there were more publishers like you.—C. M. Gruenther, Secretary Federal Land Bank of Omaha.

Western Farm Life:

We have yours of the twenty-third instant enclosing copy of a letter recently sent to the Congressmen and Senators from your state. We heartily approve everything said in your letter and only wish that every Congressman and every Senator in the United States could read the same. We feel certain that the Federal farm loan system has grown too large to be ignored by the public. In our opinion, it is here to stay. Both the Republican and Democratic party realized this fact and have mentioned the same in their platforms recently adopted at their conventions. We believe it is one of the best pieces of legislation ever enacted for the American farmer and while it can be improved upon by some few amendments, it is giving to the farmer much needed relief. The magazine referred to has just arrived. We shall be glad to read the articles referred to in your letter.—Federal Land Bank of Louisville, Ky., Walter Howell, Pres.

Among the Breeders.

Eldon Savits of Greeley, Colo., is offering some very fine Hampshire boar pigs of March, April and May farrow.

If you are looking for a fine Holstein bull calf with good record backing, read the ad of The Perry Park Ranch at Larkspur, Colo., in this issue of Western Farm Life. This calf's dam made a record of 12 pounds of butter in seven days two months after freshening. The record was made under pasture conditions.

GREAT BARGAINS—REGISTERED HEREFORDS; DURHAMS (called Shorthorns), and ABERDEEN ANGUS; ages 1, 2, 3 and 4 years old. Prices $125 per head and up. Also Percheron and Belgian Horses from 1 to 6 years old. Prices $125 and up. Write for circular. One head or car lots. Breeding Guarantees with each.
ILLINOIS HORSE & CATTLE CO.,
Good Block, Des Moines, Iowa.

FOR SALE.
Sons of Sir Johanna Bess Segis
who combines in the closest degree the blood of **King Segis Pontiac Count** and **Piebe Laura Ollie Homestead King.** Send for their story.
PAHGRE VALLEY RANCH,
MONTROSE, COLO.

DIRT CHEAP
25 High-Grade Holstein Heifers
mostly well marked, 10 months to 2 years old, in fine shape, $60 each.
Also Registered Bull, 3 months old, with all papers, $150. Dam, 15 lbs. butter at 2 years and 1 month old. Grandsire was full brother to the $50,000 bull, King Segis Pontiac. C. W. CURTIS, SEDALIA, COLO.

FOR SALE
Beginner's young herd of REGISTERED HOLSTEINS, consisting of nine females, herd bull yearling and bull calves.
W. B. & E. B. Downs,
R. F. D. 1. Yuma, Colo.

The Divide Herd

Young Bulls

We are now offering at very reasonable prices some good Shorthorn bulls suitable for small herds. Fall calves and a few yearlings priced for quick sale. Full particulars on application.

THE ALLEN CATTLE CO.,
SHORTHORN BREEDERS,
Colorado Springs, Colorado

WHO NEEDS A PERFECT INDIVIDUAL TO HEAD THEIR HERD?

Son of a 23.23 lb. 3-year-old heifer—an unusually good yearly producer—by a son of our $5,000 bull—out of the 30-lb. cow who produced the great show cow and State Champion Junior 3-year-old Lilu Segis Pontiac, 34.25 lbs. butter in 7 days.

He is about one-half white, and a beauty. Ready for light service. The first check for $350 takes him.

SANBORN MEADOWS,
MRS. R. G. DOUGLAS. RUSH, COLO.

DICKENS SHORTHORNS

Get Into the Purebred Game

I have twenty head of five to seven months old calves that I will sell at a close price of $50 to $100—and good ones at that.

Also yearling heifers and bulls, cows and calves.

Write me. I need the money.

W. A. DICKENS,
Longmont, Colorado.

Registered DUROC BOAR

FOR SALE

Two years old. Full brother to grand champion at last Denver stock show.

ALSO THREE REGISTERED TRIED SOWS.

TELLER FARMS,
R. R. 1. Golden, Colo.

REGISTERED BIG TYPE DUROC JERSEY HOGS

Am offering some good Spring Gilts and Boars. Also some good fall gilts. Write for prices and breeding.

August F. Borgmann,
R. F. D. 4. LONGMONT, COLO.

Bargains in Bred Sows

20 yearling sows bred to farrow in August and September, priced to sell. All bred to our prize winning Crusader, winner at the Denver show. Shipped on approval and guaranteed.

"Daly's Durocs," Cambridge, Nebr.

COL. H. C. JENNINGS.
Purebred Livestock

AUCTIONEER

Also conduct Sales of Real Estate.
534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

WILLIAM UPP

Livestock Auctioneer

Purebred Hogs a Specialty.
DEER TRAIL, COLO.

H. C. DENNIS, Auctioneer
FORT MORGAN, COLORADO
Registered Shorthorn and Jersey Cattle
Real Estate Sales Conducted. I can sell your real estate if it can be sold.
Wire at my expense for dates.
Phone: Res. Morgan 155J; Office Morgan 15

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

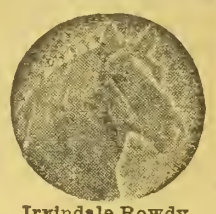
Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.
C. F. Burke, Mgr. Pueblo, Colo.

Glendale Stock Farm

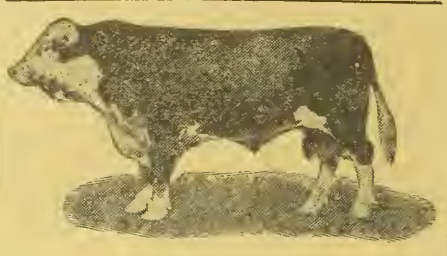


Irvindale Rowdy
Grand Champion
Belgian Stallion
Chicago, 1917,
Denver, 1918
and 1919

Breeders of
BELGIAN HORSES
and
POLLED HEREFORD CATTLE

Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.



Verdun Fairfax, 547803.
FOR IMMEDIATE SALE.
Six young bulls of Fairfax breeding, $300 to $500. Two choice herd bulls, and Fairfax Heifers. Also few choice heifer calves. All stock disease free, and guaranteed.
Prompt Attention to Inquiries.
SNEFFELS LAND & CATTLE CO.
RIDGWAY, COLO.

MILKING SHORTHORNS.
All Cows Officially Tested. 125 in Herd.
Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.
THE BONVUE FARMS CO.,
Stockyards, Denver, Colo.

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

BEAU ASTER

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER
Holyoke, Colo.

Glenrose Farm Herd

REGISTERED DUROC JERSEY HOGS.
Bred Gilts and Weaned Pigs. Also a few good boars for sale. All big-boned.

R. C. VAN SCOY & SON,
Highland Station, Route 5 Denver, Colo

REGISTERED JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.
H. J. VAUGHN, KIRK, COLO.

Holstein Bull Calf

Born April 26th, 1920. Three-fourths white.

SIRE—Columbine Johanna Rue 253169.
DAM—Western Ruth Colantha 461458.

This heifer freshened under two years, and made nearly 12 pounds of butter in seven days two months after calving. Record was made under pasture conditions, without any previous preparation. She will freshen again as a senior 2-year-old, and should make around 20 pounds.

The calf is unusually large, well marked, and a fine individual.

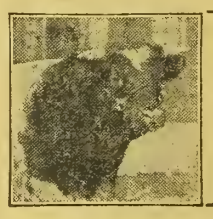
He is Priced at $150.00

f. o. b. Larkspur, Colorado.

We also have one other calf from an untested dam, nearly ready for light service.

Perry Park Ranch

LARKSPUR, COLO.



MR. SHORTHORN BREEDER

Why don't you try growing out a few purebred Shorthorn steers? Castrate some of your less desirable bulls and give them good care. You will be surprised what good steers they will make—and at the profits they will show. Once you try it you will keep up the practice. Shorthorn steers pay.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION,
13 Dexter Park Avenue Chicago, Illinois

Shorthorns That Milk

Victoria 228667

R. of M.—15,175 Lbs., 546.3 Lbs. Butterfat. Class A. Only a few cows of this breed exceed this record in Class A official test.

Bulls and Heifers for sale at Reasonable Prices.

The Pine Valley Dairy and Farms Company
Seeley G. Rose, Manager. COLORADO SPRINGS, COLO.

Buy Some Good Duroc Pigs Now

Boars or Sows, by **Grand Champion Edgemoor Cherry Chief 2d.**
They cost less when young. Write for list.

Colorado Agricultural College, Ft. Collins, Colo.

Registered Duroc Jerseys.

Edbrooke Durocs - Green Acre Farm

My Herd Boars Are Defenders of Col. Breeding.
Green Acre Defender 166505. Edbrooke's Defender 165263
The Biggest of the Big Type.
My Sows Were Prize Winners Denver 1920.
The Better Your Stock, The Better Your Returns.

H. W. J. Edbrooke, Prop., 6th & Wadsworth, Denver

Wallie Farm Reg. Holsteins

State Milk Record

Established by Mystic Polkadot Lottie, junior 2-year-old, 540.4 lbs. milk in seven days. Best day's milk 83.6 lbs. Fourteen other excellent A. R. O. cows developed recently. All records made without fitting or forcing.

A number of wonderful records will unquestionably be made on these cows at next freshening. Take advantage of this fact by buying a Wallie Farm bull calf now. A few 2-year-old heifers for sale.

Herd Sire KING JOHANNA SEGIS PONTIAC
"His sisters have broken over 100 world's records."

W. G. Foster, Owner, 4800 So. Penn.
Phone Englewood 122, Denver.

MILK RECORDS

Do Not Replace Straight Bates Shorthorn Blood

FOR

Straight Bates Shorthorns are the "foundation source' of the Milking Shorthorns of England and America.

The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

October 5, 1920 October 5, 1920

HALL BROS.

Dissolution and Dispersal Sale

Of 150 Head of Registered Holstein-Friesian Cows, Heifers and Bulls at their Western Holstein Farm,

5½ Miles S. W. of Denver, on the Morrison Road

After twenty-three years of agreeable partnership of the brothers—Carlos W. and Storrs H. Hall, by their mutual agreement they have decided to close their partnership in this very successful business, and are offering at public sale one of the great herds of the day.

The foundation blood upon which this herd was established was of the best of the breed, and under the guidance of the Hall Bros. has increased in quality, and is today recognized from coast to coast as one of the great herds of America, and its breeding is the standard of excellence in the nation's greatest livestock exhibitions and sales, and in official testing.

The herd is composed entirely of animals of correct conformation and great milk and butter yielding qualities. The herd is healthy and high-class in every way. It was established with the view in mind of creating a herd of this breed in Colorado to supply foundation stock of this breed to the fast-growing dairy interests of the Rocky Mountain States. The Hall Bros. are in livestock circles, well known men and highly respected. After years of successful operation in the dairy interests of Denver, the Western Holstein Farm and its herd of registered Holstein cattle, the owners believe a lightening up of their responsibilities of their large business should be observed, and hence this sale.

Just once in a great while does an opportunity to buy your own selection, at your own price, present itself of real foundation breeding, blood of any blood of the various breeds, and you should, those who are interested in this great breed, avail yourself of this great opportunity.

REMEMBER THE DATE, TUESDAY, OCTOBER 5, 1920.

HALL BROS., Props., Western Holstein Farm

DENVER, COLO., SOUTH DENVER STATION

Catalogs Ready Sept. 1, 1920. Sale at the Farm.

COL. G. M. BANKS, Auctioneer
709 E. 11th Ave., Denver, Colo.

Campion's Majestic Sunbeam and Beau Mischief Herefords

MAJESTIC SUNBEAM No. 364681. Calved February 25, 1911. Sire—Majestic the 24th No. 293221. Dam—Armour Sunbeam No. 85081. Majestic Sunbeam, grandson Imp. Majestic, one of the best and biggest boned Hereford bulls ever imported to this country.

BRUMMEL MAJESTIC No. 628435. Calved March 20, 1917. Sire—Majestic Sunbeam No. 364681. Dam—Don Amelia 2nd No. 135871. 56¼ per cent Anxiety, 31¼ per cent Imp. North Pole, Lord Wilton Grove the Third. 12½ per cent Imp. Majestic.

AMELIA'S BEAU MISCHIEF No. 557094. Calved April 27, 1916. Sire—Beau Mischief the 15th. Dam—Don Amelia 2nd No. 135871. Ninety per cent Anxiety blood. Secretary Kinzer says its almost impossible to write a better pedigree.

Sunbeam Farm,

8 Miles East of Wellington, Colo.

"They're Bred in the Purple"

The best types of Majestic Sunbeam and Beau Mischief Heifers and Bulls for sale.

The Big Bone Registered Poland China Sows and Gilts and Boars for sale at all times, also fullblooded bred gilts. Come and see them. Visitors welcome at "Sunbeam Farm" any time.

A. J. Campion

DENVER, COLORADO.

SHIP TO THE OLD RELIABLE COMMISSION FIRM

The Sigel-Campion Live Stock Commission Co.

And we will get you the High Dollar for your stock. Experienced salesmen in every department.

A. J. CAMPION

Pres. and Gen. Mgr.

EXCHANGE BUILDING
DENVER UNION STOCK YARDS.
Phone Main 8300.

Registered Herefords

2 LOADS COMING 2-YEAR-OLD BULLS.

3 LOADS YEARLING BULLS.

These are all Extra Good.

Write us about bred heifers and cows.

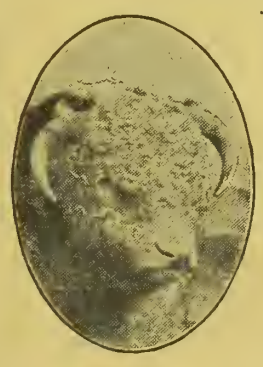
We are offering some of our good females that will go well in any good herd. If you are starting in the Registered Hereford business see us. We can help you.

Hereford Corporation of Wyoming

Box 876, Cheyenne, Wyoming.

DENVER OFFICE: 406 LIVESTOCK EXCHANGE BLDG.

RAYMOND S. HUSTED, Manager.



L. G. Davis Herefords ANXIETY BRED

Sires in Service:

The Great BEAU CARLOS 2nd
BONNIE WESTON, by Bonnie Brae 15th
WYOMING 4th, Champion Senior Yearling Denver, 1919.

Have for sale 20 Heifers, 10 to 15 months old.
Our own breeding.
We have a few High Class Yearling Bulls For Sale.

L. G. DAVIS, Saratoga, Wyo.

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
JOHNSTOWN, COLO.

JAMES PONTIAC DEKOL ORMSBY

DeWITT HEREFORDS

HERD BULL—MISCHIEVOUS JR., by THE HEIR

His dam is Mischievous 3rd, a full sister of BEAU MISCHIEF and the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of
GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

HIGH CLASS JERSEYS

Our two cars of Jerseys bought in the east have been delayed on account of strikes. We expect them soon now. Some great cattle.

We have a few splendid bull calves, most of them by the great Majesty's Feather Lad; and we need the room, so prices are right. Out of Duroc boars, but have a couple of bred gilts to go.

McClenahan & Dixon, Greeley, Colo.

Public Sale of Milking Shorthorns

At WYLDMERE FARM
Littleton, Colo.

In October.

Date will be announced in the next edition.

J. B. BENEDICT

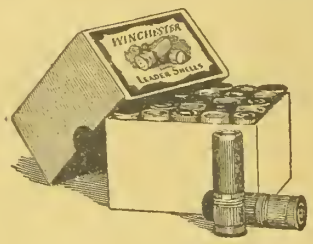
GREEN VALLEY FARMS

We are offering for sale some very good Hampshire Boar Pigs of March, April and May farrow. Prices from $15.00 to $30.00 each.

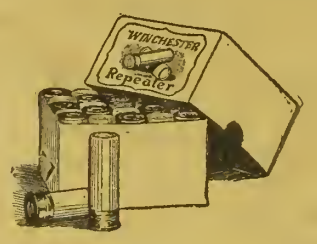
ELDON SAVITS
GREELEY, COLORADO

WINCHESTER

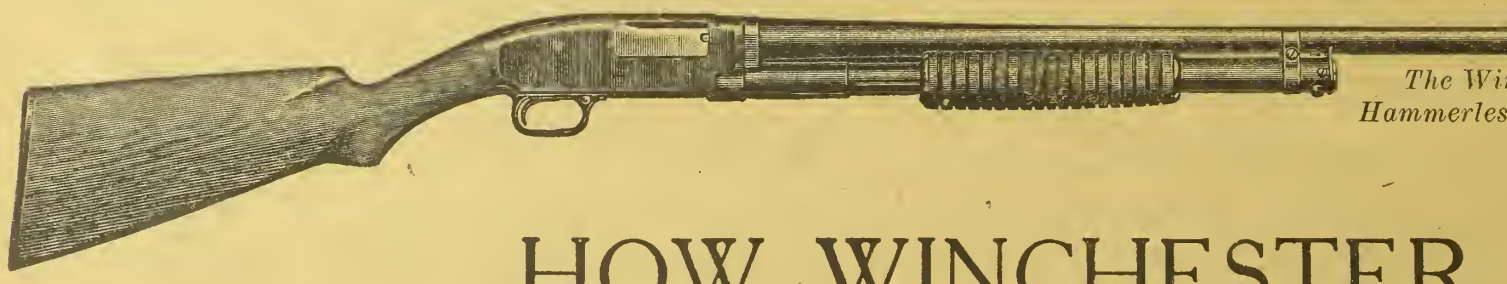
1866 1920



Leader



Repeater



The Winchester Model 12 Hammerless Repeating Shotgun

HOW WINCHESTER GIVES YOU *PERFECT PATTERN*

OVER 400 different gauges adjusted to micrometer accuracy are used—and half as many searching inspections and tests made—in manufacturing your Winchester Shotgun, on which you depend for *half* of the work of producing the Winchester perfect shot pattern.

Every step in the manufacture and loading of each Winchester Shell requires equally careful attention.

The Winchester perfect shot pattern is achieved by working to the principle of *accuracy.* By holding materials to the strictest quality standards and keeping manufacturing tolerances minutely exact, in making *both* guns and shells. And above all, by making Winchester Shotguns and Shells *especially* for each other.

And then *making sure of the result* by still further tests.

When your ruffed grouse roars up out of the briers and speeds away among the pines, he will find no open space to get through in the Winchester shot pattern you shoot at him. Winchester testing and inspection have *made sure* that the shot pellets will be *evenly distributed without sacrifice of speed.*

The Winchester pattern shown above was made at 35 yards, using 1⅛ ounces of *standard* No. 8 shot; circle 30 inches.

Use a Winchester Model 12 Hammerless Repeating Shotgun, 12, 16, or 20 gauge. Or if you prefer, a Model 97 with outside hammer, 12 gauge.

And always buy Winchester Shells—Leader or Repeater smokeless, New Rival or Nublack in black powder. We make but one claim for them—the *service* they give you. *Of course they are completely waterproof,* correctly made, primed, loaded, wadded and crimped. Like all Winchester products, they are *balanced* in quality.

Buy your gun and shells from your local hardware or sporting goods dealer. And write to us any time you wish information.

For Short Ranges

Avoid mutilating your game unnecessarily. Winchester Brush Loads give you the same pattern at 25 yards with a gun of any bore, from cylinder to full choke, as a full choke gives you at 40 yards with the standard load. Without loss of velocity, penetration or uniformity; due to the superior Winchester patented shot spreader.

WINCHESTER REPEATING ARMS CO. ··· NEW HAVEN, CONN., U. S. A.

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WESTERN Farm Life

Vol. XXII. *Denver, Colorado, September 1, 1920.* *Semi-Monthly*

THE CALVES AREN'T KICKING AND NEITHER WOULD YOU.

(Photo by H. Armstrong Roberts.)

Copyright 1920, by The Goodyear Tire & Rubber Co.

"The use of a truck on Goodyear Cord Tires has increased my land value by bringing my farm closer to town. Power machines, assisted by this pneumatic-tired truck, offset my labor shortage. The Goodyear Cords on my truck have traveled about 10,000 miles to date. Solids can't go into the soft fields; pneumatics go through easily—haul 450 crates to 40 by team. Hard to sell a second-hand truck on solids here."—Glenmore Green, Farmer, Fort Valley, Georgia

EXTENSIVE rural experience, like that related above, has confirmed the tendency of farm land prices to increase when Goodyear Cord Tires are used to cover long or difficult hauling routes.

Fertile acreages, ten to twenty-five miles from the nearest town, have become more profitable and hence more saleable due to improved transportation on these able and rugged pneumatics.

What formerly was a tedious and jarring haul by either team or motor truck, has become a brisk, smooth trip due to the grip, cushioning and spryness of the big Goodyear Cord Tires.

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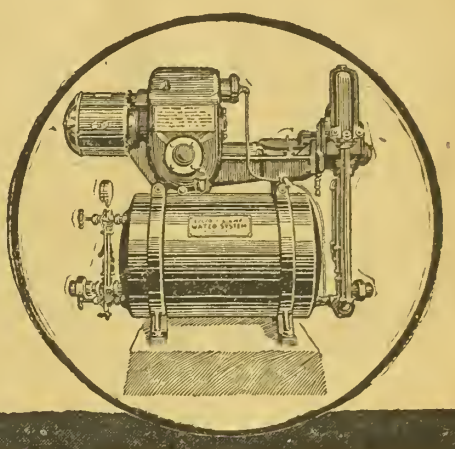

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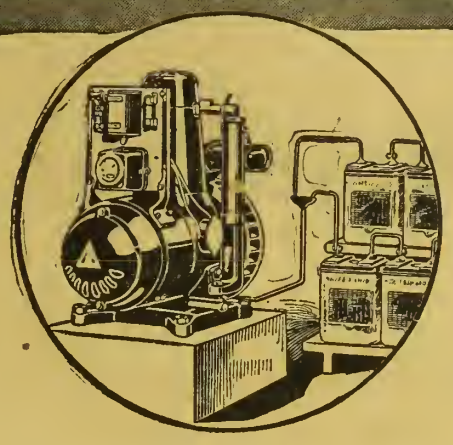

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Raising Pure-Bred Herefords on Wyoming Grass

HOW THE BIGGEST BREEDING RANCH IN THE WEST IS MANAGED

H. A. LINDGREN.

We have heard a great deal in the past few years about the stock growing conditions in the state of Wyoming. There have been two grand champion Hereford bulls developed in the state during the last few years and shown at the National Western show at Denver. From this we have been led to believe that the state not only contained a number of herds in which there was excellent breeding, but we also were sure that there were conditions there in the way of grazing land that assisted in making the animals what they were.

In 1916, Wyoming Fairfax, a bull exhibited by the Wyoming Hereford Corporation of Cheyenne, carried away the grand champion honors at Denver. Two years later the bull Wyoming, bred and owned by L. G. Davis of Saratoga, again captured that honor for the state. Both of these bulls are a credit to the breed and have given a good account of themselves.

The writer recently had the opportunity of visiting the holdings of the Hereford Corporation of Wyoming at Cheyenne and of seeing what the conditions were for stock raising in that section. The wonderful rolling hills with the abundance of good grass makes one feel that there are still places where the old-time conditions of the cow range are prevalent.

About a mile and a half out of Cheyenne on the east begins the farm owned by the company and extends along Crow creek for a distance of about seven miles. It reaches out on either side some four miles. This provides a great deal of land along the creek that is well supplied with water for irrigation.

The farm consists of 25,000 acres. The greater part of this is used exclusively for grazing. The Burlington railroad runs through with a station, Altvan, on the place. This provides a handy place for the loading of stock and feed. There is 150 miles of fencing on the premises; this includes the cross fences and border fences.

History of the Ranch.

It was away back in 1878 that this farm was taken up and the breeding and raising of Herefords began. At that time it was under the management of George Morgan, who imported from Herefordshire in 1883 some 200 head of Herefords direct to the ranch. These and other importations made by Mr. Morgan have had a great deal to do in the making of Hereford history in the north and west. Among these importations were a number of stock bulls including Rudolph of the Grove 3rd; Lord Wilton 2nd, Victor by Winter De Cote, and Sir Thomas of Burleigh's breeding.

This noted ranch has been sold and resold a number of times in its history. Altman and McUlvan sold it in 1916 to its present owners. The officers in charge are: President, James E. Husted, Denver; vice president, Raymond Husted, Denver; secretary, George Lazear, Chicago; treasurer and farm manager, Robert Lazear, Cheyenne. The last named was formerly in charge of the Garmesa Farms of Fruita, Colo.

There are at present 1,500 registered Herefords on the farm. The notable characteristics is the unusual size and scale of the animals. They are of good breeding and several blood lines among them that attract attention are the Bonnie Lads, Fairfaxes, Anxiety 4ths, Generous, and Beau Mischief. The policy is to cater to the raising of breeding stock exclusively. The stock goes all over the country but more especially to the northern and western parts of the United States. At the time of the visit to the farm, a carload of breeding show cows were being shipped to a breeder in California. Aside from the sale of carlots of bulls and heifers, the demand for single individuals has been cultivated, they taking the stand that the future success in the industry depends on the development of the smaller breeder. They have stock priced so that the smaller owner who wants a breeding bull can get it at a reasonable figure.

The stock is turned out on pasture as soon in the spring as it has a good start in growth. The weaker animals with calves are kept in and fed hay until they are strong enough to make it on grass. When the pasture gets a good start, the feed is very good all the year around.

Good Water Supply.

One thing that impresses one in Wyoming is the water available in the wells. It is cold and pure and on this particular farm is free from any taint of alkali or disagreeable flavors. The creek supplies many of the pastures and those back from the creek are supplied with stock water from wells. These wells are from 150 to 300 feet in depth and the water is pumped by windmills or other power. There are also a few water holes which furnish a limited supply for earlier in the season.

The greater part of the cows on the farm are hand bred. Riders are out every day and a careful watch kept so that all cows in season are brought in to be bred. In this way the breeding record is accurately kept. A few of the herds are kept in pastures with single bulls. In order to keep the records straight all of the animals are branded. Formerly the seared brand on the side was used. On the left shoulder was a number showing the year when the animal was born and on the thigh was the number of the animal, all of which was accurately recorded. The place of marking has been changed in the last few years. The same system of marking has been retained, but the numbers have been placed on the horn and tattooed in the ear. This duplication in marking is necessary, because the horn may be broken or the number rubbed out. In that case the animal can be identified by the tattoo mark in the ear.

A Seventy Per Cent Calf Crop.

The calf crop this year is 70 per cent. This is very good, considering last winter's weather conditions, which were severe on livestock all over the state.

The farm buildings are of a practical nature. Sheds provide shelter during the severe weather. Several large barns are used for the housing of the show stock and preparing them for exhibition. One of these barns has just been completed and is up to date in arrangement. It is provided with box stalls, concrete floors and gutters, so that it can be kept sanitary. At the time of the visit it was occupied by the bulls that will be shown next winter at the National Western Show at Denver. Among the animals in this barn were several calves from the noted bull Wyoming Fairfax. Also Wyoming Prince, a bull that won sixth in his class at the last Denver show as an aged bull. He will be shown again this year. He weighed 2,760 pounds the first of August and shows good prospect. Several young bulls in the show string are in excellent shape and the usual good showing from this farm can be expected during the coming show season. It is not the plan to make an extensive circuit, as was done last year.

Use Purebreds as Nurse Cows.

The young stock that will be used for showing is now on nurse cows. It is of interest to note that some high-class registered Holsteins are used for this. These Holsteins were brought there from the Garmesa Farms at Fruita, Colo. They are of excellent breeding and a number of them have advanced registry records. It was reported that before these Holsteins were used, the common nurse cows were kept. In one instance a calf was taking the milk from two of these common cows. The same calf was placed on one Holstein with two other calves. It is only a matter of good judgment to keep good milk producers as nurse cows.

It is the custom of most breeders to use just ordinary cows for this and they are often a hard looking lot to say the least. It is the idea of the Hereford Corporation to use the Holsteins as nurse cows and keep them in as good condition as possible under the circumstances and on the show circuit to enter them in the dairy classes. This seems a good idea. The good cows will assist greatly in paying their way. Besides this a dairy cow will naturally produce milk more economically and less cows will take care of the show animals.

The farm is ideally situated for the raising of growthy Herefords. The conditions are such that they get the size and hardiness that makes them valuable as breeders. Raymond Husted will now give his entire time to the selling end of the business and from his knowledge of the breeding and the acquaintance he has among the breeders of the west will assure success along that line.

Robert Lazear is well qualified to look after the management of the affairs at the farm. He has had considerable experience in stock breeding and in farm management, which will assist him in handling the farm end of the business. The combination of these two men assures the breeders of the country the continued development of this noted herd and of the Hereford breeding development of the west. With this wonderful herd on which to work we will hear from them more and more in the future.

Four big silos, each of 180 tons capacity, assist in keeping the stock in good condition during the winter. Two hundred acres of corn will be placed in them this fall. They consider the silage as most valuable feed in this connection. The hay used is native grass. They cut 700 acres of the meadows along Crow creek. Most of the Wyoming stockmen claim the very best results from this hay. From the looks of the animals being fitted for show and fed on this hay it has the nutriment to put on gains.

A Wholesome Laugh.

Teacher: "Who was that who laughed aloud?"

Pupil: "I did, sir; but I didn't mean to do it."

Teacher: "You didn't mean to do it?"

Pupil: "No, sir; I laughed in my sleeve, and I did not know there was a hole in my elbow."

Wyoming Prince 559020, one of the herd sires of the Hereford Corporation of Wyoming. Center picture: Group of calves on Hereford Corporation ranch. At right A promising daughter of Wyoming Fairfax.

Big Men of American Agriculture Seen in Action

CLOSE-UP OF THE FEDERATION LEADERS AT DENVER SESSION

ALVIN T. STEINEL.

WHAT is the American Farm Bureau Federation and what is it doing for the farmers? This question arises in many minds because of frequent reference in the farm press to this movement. Western Farm Life has for some months been giving close attention to the movement which is the culmination in a big national way of the community farm bureau idea, developed in co-operation with county agent work. It was not until recently that the farmers of the west were able to get into actual personal contact with the men who are heading the movement. On August 16th and 17th the executive committee of the Federation held a session at the Shirley hotel in Denver and immediately following this there was a Mountain States conference at Salt Lake City, to take up western problems. The writer attended both the Denver and Salt Lake sessions. In the present article he will present a few of the big things developed at Denver, reserving the Salt Lake meeting for a later account.

The best answer to the question which introduces this article is a report of this kind, setting forth the routine transactions, or so much of them as will be of general interest.

First, it may be interesting to note the personnel of the committee. Those in attendance at Denver were: J. R. Howard, president (his home is in Iowa, but he spends all of his time in Federation work and has his office at Chicago); S. L. Strivings, Castile, N. Y., vice president, and one of the organizers and officers of the New York State Farm Bureau; Gray Silver, a West Virginia farmer and Washington representative of the Federation; E. B. Cornwall, Middlebury, Vt.; E. F. Richardson, Millis, Mass.; H. E. Taylor, Freehold, N. J.; Howard Leonard, Eureka, Ill.; O. E. Bradfute, Xenia, Ohio; W. H. Walker, Willows, Calif.; W. G. Jamison, La Veta, Colo.; John T. Burton, Garland, Utah; J. W. Morton, Athens, Ga.; George Bishop, Cordell, Okla.; C. E. Gunnels, Assistant Secretary.

Other leaders in the movement from Eastern states included H. C. McKenzie of Walton, N. Y.; John Brown of Indiana, J. P. Powers of the Michigan Farm Bureau, and W. G. Eckhardt of the Illinois Agricultural Association.

Leading farmers from all parts of the state were present, having been invited by the officers of the Federation to attend all sessions and to freely ask questions and participate in the discussions. Dr. Charles A. Lory, president of the Agricultural College, several heads of departments, a large group of extension workers and many of the county agents were in attendance.

Among the important questions discussed at the Denver session was the recent railroad rate increase. Clifford Thorne of Iowa, a noted advocate for the shipper, who has been before the Interstate Commerce Commission in many a hard battle to prevent injustice, was engaged by the American Farm Bureau Federation jointly with various shippers' associations, to see that the increases, which were not opposed in principle, were kept at a moderate figure. Mr. Thorne's report was read by President Howard and accepted. It indicated a saving of $200,000,000 a year to the people, as a result of intervention on behalf of the farmers and other shippers. One of the results of Mr. Thorne's efforts was the placing of a share of the increase on the passenger fares instead of saddling the entire load on freight traffic. The railroads asked for an increase of 55 per cent. They got 35 per cent in western territory, 40 per cent in the east and 25 per cent in the south.

Another rate problem which the committee decided to tackle is that known as the Pittsburgh basing rate on steel. This discrimination, practiced for many years in favor of Pittsburgh, has cost the farmers of the western two-thirds of the country many millions of dollars in added prices on implements. It is the custom to add to the price of steel the freight rate from Pittsburgh to point of manufacture, whether that be Gary, South Chicago, Duluth or elsewhere in the middle west. In practice this works out so that steel made from iron ore mined in Northern Michigan, transported on boats to the steel mills at the south end of Lake Michigan, or the west coast of Lake Superior, then used in the manufacture of implements, automobiles, trucks or other like products, bears in addition to the actual freight cost, also the burden of a rate from Pittsburgh, because Pittsburgh is the basing point for steel rates. It was brought to the attention of the executive committee, as an example, that a stump puller, made at Duluth, from steel rolled there out of ore that never saw a freight car, is sold to the Minnesota farmer, plus the rate from Pittsburgh.

So manifestly unfair was this practice considered that the government during its operation of the railroads, discontinued it. Immediately on resumption of private ownership the Pittsburgh basing rate was re-established and it is now in effect. The farmers buying implements, autos, trucks, or anything else that is made from steel, pay this tribute to the power of the steel industry.

The American Farm Bureau Federation expects to join western steel users in having Chicago made a basing point. Mr. Bradfute of Ohio said he would like to have for analysis any argument put up by the Pittsburgh interests for the maintenance of the practice; he said he could not conceive how the practice was justified, and he was curious to know what type of logic was advanced in favor of the discrimination. Mr. Silver said he had in his files the argument of "the other side" and that anyone was welcme to an examination of the documents.

How the railroads had taken revenge upon the public in retaliation for segregation of the lake shipping lines from railroad ownership proved interesting, as brought out in discussion of transportation problems. Years ago when the boat lines on the lakes were independent properties, they were able to make low rates on grain, lumber, ore and other bulky shipments that made it advantageous to use the slower method of transportation. Then the railroads acquired the boat lines and "equalized" the rates. Several years ago a federal law was enacted compelling the railroads to relinquish ownership of competitive boat lines. This resulted in lowering the rail rates where they came in competition with boat lines, making this up by adding to the tariff in districts where there is no boat competition.

It was brought out in discussion of this matter that the Interstate Commerce Commission was aware of the situation and had ivnited the filing of a complaint, which, however, would require perhaps two years for hearing and final settlement. The Federation will take the matter up in a direct way that may secure quick results.

Mr. Silver made a report concerning things accomplished by the Washington bureau of the Federation, bringing out the fact that both the Republican and Democratic parties had adopted substantially the platform planks on agriculture suggested by the Federation.

Pressure brought to bear on the Interstate Commerce Commission has resulted in partial relief of the car shortage by the movement westward into the farming districts of 106,000 box cars. This pressure will be exerted so long as there is need for it. The Federation has accepted in good faith the statement of the railroads that there is an actual and serious car shortage, which cannot be permanently relieved except by the construction of more cars. This is promised as a result of the increase in rates and while waiting, the farmers are assured that the American Farm Bureau Federation will remain on the job at Washington, to insist on equitable car distribution and co-operate with the railroads in securing prompt loading and unloading. There seems to be no hope of avoiding considerable loss and delay in moving crops, but this will be held to the lowest possible point.

Farmers got good news from the announcement that an income tax and farm account book had been devised by the Federation experts that has been approved by the United States Treasury Department as official. The account book was compiled with a view to convenience and simplification of income tax reports. Each page carries a column for totals which, at the end of the income tax year, are easily carried to a tax blank in the back of the book. This is a perforated sheet which, when filled out, is accepted by the Internal Revenue Department as the official report. The question was asked whether the form had been actually or tentatively approved.

"It has been actually approved and we are ready to issue the book," was the answer.

The details of publishing the account book will be worked out in the near future and within a few months it is hoped to have this book adopted by every local Farm Bureau as the accounting method on the farms of the United States and the approved system of farm income tax reports.

At the conclusion of the first day's session each member of the executive committee was asked to give his views on the "big work ahead." Short talks

(Turn to Page 21.)

Fighting Foot and Mouth Disease in Holland

EXTERMINATION METHOD DISCARDED BY THE DUTCH GOVERNMENT

DR. L. S. DIJKSTRA.

Foot and mouth disease has caused serious losses in Holland and other European countries in the last few months. The accompanying article by Dr. L. S. Dijkstra of Vreeland, Holland, one of our regular contributors, explains methods of combatting the disease which are being employed in Holland at present. It is interesting to note that the Dutch government has admitted failure of the method hitherto so generally followed of exterminating entire herds when the disease first appears. This method caused a great controversy in America during the outbreak several years ago. In some cases owners protected their herds with guns to keep government veterinarians from carrying out orders to kill all animals, the healthy with the diseased. Dr. Dijkstra is versed in both medical and veterinary science and writes from the standpoint of an expert in cattle diseases, and from firsthand information in his own vicinity. Added importance is given his statements in view of the fact that Congress recently cut the appropriations of the Department of Agriculture in the work that is being done to prevent re-importation of foot and mouth disease.—Editor.

FOOT and mouth disease is doing much damage to all kinds of livestock in Holland at present. Not only are cows seriously attacked by the disease, but hogs, sheep and even rabbits suffer. On some farms the disease has appeared for the third time in one year. Many valuable animals are dying and milk production has decreased to the lowest point in the recent history of the country. What to do to prevent the spread of the disease is the great question.

The government first attempted to combat the disease by isolation of the farm on which it occurred. Soldiers were placed in charge of such farms; no one was allowed to enter or leave the place. All stock was killed, including cats, chickens, pigeons; in fact, nothing was left alive and thorough disinfection of everything on the place was undertaken under supervision of the government veterinarian. The period of isolation was set at three weeks.

Did this help? Alas, no! Thousands of dollars have, so to say, been wasted and the results are nil, for the disease has now spread to all parts of Holland.

What is the reason that notwithstanding enforcement of these strict rules the spread of the disease has been so general? Simply this: The winds and the streams have carried bacteria in spite of all precautions. One remarkable case is cited, that in a village one case occurred in a herd of forty cows. This case remained the only one and it was expected that, by killing off the whole herd, further spread would be prevented. This proved to be a false assumption, for after six days the disease broke out on three other farms about one hour distant from the point of original infection and southward of the infected farm. A neighbor who lived only five minutes' walk from the infected farm did not find the disease in his herd until three weeks later. The only explanation was that the strong south wind had carried the bacteria to the farms at a distance.

Another instance is mentioned of the spreading having been caused by wild geese. On a field where a flock of wild geese had been seen, foot and mouth disease soon after broke out. There had been no suspicion of the disease nor any developed case in that section up to the time the infection was supposedly carried there by the wild geese. In another case infection could only be traced to a stream passing through the farm.

As the government regulation for isolation and killing of the healthy animals on infected farms did not have the desired effect, further efforts in that line were discontinued. The disease is being allowed to run its course. The only thing being done is vaccination with a special serum the results from which, however, are not very encouraging.

Just lately, however, a practical and what appears to be a more helpful remedy, is being applied. I have seen good results from it and many farmers are trying this method which I will explain.

It seems that the blood of cows who have been perfectly restored after an attack of foot and mouth disease contains material which works as a curative and preventive when injected into other animals.

About six days after recovery blood is taken from the system of the animal by venesection. This blood serum is prepared in the following way: The farmer takes about two liter (about 4 quarts of blood) from the restored cow; sometimes even as much as 6 to 8 quarts, when the animal is in fairly good condition. This blood is caught in a jar or some other receptacle that has been sterilized and is then placed in a cool place for about twenty hours, when the white part, or serum, is skimmed off. For young calves 130 grams of blood serum is injected under the skin. This has been applied to pigs as well and found to be effective both in pigs and calves in preventing infection. When tried on mature cows there have been failures, but also some successes.

Of course, as is the case in other parts of the world, an epidemic of this kind always brings out an army of quacks and charlatans, but farmers here are generally too well informed about cattle diseases to be fooled by false claims. The government is attempting to make a closer study of the disease and methods of fighting it, and to that end is trying to organize an institution which will be attended by our bacteriologists and our leading veterinarians, who will be chosen for that work by the government.

West Slope Cattle Thrive in Clover Pastures

VISITING AMONG THE ROUTT COUNTY LIVESTOCK BREEDERS

THE man who thinks of the rich mountain valleys of Routt and Moffat counties as merely grass country, fit only for range purposes, revises his estimate of the region after a summer visit, such as it was the pleasure of the writer to make recently. Shorthorns up to the knees in clover make one think of the tame pastures of Iowa and Illinois. I saw them on the Maxwell-Miller ranch near Steamboat Springs; blue-blooded Scotch cattle, big-bodied, vigorous individuals, breeding in every line and constitution in every fiber. They came from the best herds to the best possible environment, for northwest Colorado duplicates every advantage of the eastern and British farm in the way of pasture, and has in addition an unmatched cattle climate.

Terry Miller showed me over the ranch. He is building up one of the greatest herds in the west, not in size, but in quality. He covered the western show circuit last fall and winter and astonished some of the old-timers. He is planning another tour this fall and winter that will include the leading shows of the mountain and coast states, winding up with the International and the National Western. Mr. Miller is a young man, ambitious to succeed as a breeder. He has a farm that is ideal for its purpose, though some may think it remote from the center of things, because it depends upon the Moffat road for service. That is a temporary handicap: The tunnel WILL be built.

Mr. Miller's business capacity is shown not only by his choice of foundation stock, but by the selection of such an experienced chief herdsman as John Chalmers, who has served with Duthie, and Marr and Cathcart abroad, and on some of the big breeding farms of America, putting in four years on the University of Illinois farm, feeding the prize winning cattle at Ames, and settling down finally on the Maxwell-Miller ranch, to help develop a show and breeding herd that will rank among the top-notchers. I took a look at the two herd sires, Imp. Lothian Marmion 648110, who came from Lord Rosebury's herd, and Princely Stamp 576045, a Whitehall Sultan bull, and then saw some of the young stuff in the pastures. Show quality was everywhere apparent. One needed no argument on the value

Young stuff in clover pasture on Maxwell-Miller ranch, Steamboat Springs, Colo.

of grass; it spoke for itself in the bloom and finish that was even then, early in July, on all the cattle.

The ranch is located in the Elk river valley, and the bottom lands are covered with a mat of alsike and timothy. A hundred head of purebred registered Shorthorns have this grazing in summer and well up into fall and ample hay is cut for winter feeding. Fresh paint on barns and corrals, fences in perfect condition, a big auto-truck, stanchions in the barn, litter carriers; modern equipment and arrangement of buildings, pens and pastures, all show that things are run on a definite plan, without frills, but with attention to every detail that makes for economic management.

Mr. Miller took me over to Carr W. Pritchett's, another Shorthorn breeder, whose herd of 36 registered animals has been represented at the Denver show and who will come back this winter, stronger than ever. Loyal Stamp 494953 was led out for inspection. He is one of the famous Anoka Farms breeding and is stamping his individuality upon a nice bunch of calves from worthy matrons of the Shorthorn tribe. Mr. Pritchett has an upland farm within a short distance of Steamboat Springs, but hidden by a mountain forest. House and barns are in a clearing, half way up the slope, and on top lie a succession of alfalfa fields and grass pastures that produce the bulk of the feed for the herd. Breeding is the game that Mr. Pritchett is following; breeding the type that farmers want and he is succeeding, though like Mr. Miller, he calls himself new at the business. These new men are modest in their claims, but they have "the goods" to show that northwest Colorado is ideal breeding ground.

Along a different line was what I saw at the farm of Conrad Riester & Son, who have the only herd of Ayreshires in Routt county, and one of the few purebred herds of that breed in the state. Mr. Reister, Sr., is a pioneer stockman, having settled in the Wet mountain valley back in the seventies, when he came out with a colony from Chicago. Later he went to La Plata county and thence to Routt. He and his son are running a dairy farm and breeding establishment along approved lines.

They secured the best Ayrshires their purse would allow. The herd sire is Silver Baron of Middlesex, purchased from President Higginson of the Ayrshire Breeders' association at South Lincoln, Mass. They selected their foundation cows in Wisconsin. They now have a registered breeding herd of twenty-four cows and heifers. Milk is sold in Steamboat Springs. They will soon have breeding stock for sale and Ayrshires are rather scarce in Colorado. Father and son, Mrs. Reister and two young daughters, are all enthusiastic at the game of dairy farming. It is hard work but a pleasure, they say, to work with good cows.

As yet dairy farming and beef breeding are new lines in northwest Colorado, which for years has been principally a range country. Markets and transportation are needed to work a transformation in the character of farming, the change being already under way, in anticipation of the shortening of the Moffat road by the building of the James peak tunnel. County Agent J. Carrol Hale, who recently was transferred to El Paso county, has done good work among the farmers of Routt county, showing them the value of organized effort. They have been willing and anxious to co-operate; they needed only the spur of some one trained to the work of organizing, and now they are well started.

Silos are scarce, but there is talk of activity in that line. I met the man who has the only silo in Routt county—Julius Siskowski of Hayden. He has a 40-ton concrete silo.

Last season he tried Russian sunflowers. They were caught by an early freeze and were rattling dry when cut, but he added water and got a very fair grade of silage, which the cows ate after they became accustomed to it. He is trying a larger patch this year.

Routt county would seem to be good territory for Russian sunflowers and tests were made this summer under the direction of the county agent, with good prospects at last accounts. It is the higher country where corn does not reach silage stage that seems to be the place for Russian sunflowers, and farmers would do well to test them. Silos are a necessity on the big ranches as well as the smaller stock farms. Sunflower silage saved the day for several big outfits in Wyoming last winter. Even when hay is plentiful silage adds so much to bettering the condition of stock cattle that it is worth double what it costs to put it up. The silo will follow Russian sunflowers up to 8,000 feet. In fact, a few enterprising ranchmen are testing sunflowers at even higher altitudes—for instance, the Sneffels Land & Cattle Company at Ridgway, Colo., (8,400 feet) will have something to report to us soon on results, which we hope will be favorable.—A. T. S.

Red Mites Invade Southern Idaho Wheat Fields

PLOW STUBBLE; SUMMER FALLOW AND CLEAN UP WEED PATCHES

APPEARANCE of red mites in wheat fields over a large area of southern Idaho this year is without precedent in the United States, according to information obtained from the United States bureau of entomology by Claude Wakeland, extension entomologist of the University of Idaho.

Although this pest has been so severe as to take virtually half the crop in some sections, Mr. Wakeland says it can be controlled if the farmers will adhere strictly to proven dry farm practice in caring for their land. Suggestions for plowing stubble land, summer fallowing and cleaning up waste patches of ground are contained in the following statement by Mr. Wakeland, which also describes the mite and the extent to which it has spread in southern Idaho.

This year a pest new to this state has been doing considerable injury to grain crops, wheat especially, in southeastern Idaho. It was first reported from the vicinity of Franklin in Franklin county, and subsequent investigation discloses the fact that it occurs generally throughout Bannock, Franklin and Oneida counties in varying numbers. Isolated specimens of the same mite have been observed in Cassia county and as far north as Madison. It has been impossible to make examinations in other counties of the state, but it is not at all improbable that the mite has a considerably larger distribution than that noted.

The adult mite is a very minute, eight-legged creature, which in badly infested fields is present literally by the millions. The general color is rusty brown, though colors of individuals vary from dull green to almost scarlet. On closer examination it may be noted that extending lengthwise along the back the color is a mottled green, bordered on either side by the darker red or brown shades.

The mouth parts of the mite are fitted for piercing the plant tissues and extracting the sap. From a distance, badly infested wheat plants assume a yellow, sickly appearance and when viewed closely reveal white, mottled streaks. Growth is stunted and plants become so dry that they make a rustling sound when touched or blown by the wind.

Fields observed early in June looked as though they could not possibly produce a crop. These fields are now comparatively free from mites, due probably to the effect of rains or light showers; they are headed out, but injury is still apparent and it is safe to estimate the reduced yield in some of them are at least one-half of the crop.

We are informed by the United States bureau of entomology that this severe infestation of wheat by mites is without precedent in the United States. The injury occurred over such a large area and developed so rapidly in Idaho this year that control has been out of the question and work has been carried on with the idea in mind of formulating practical methods of preventing a recurrence of the injury in future years.

It is probable that mites were distributed generally throughout grain fields in southern Idaho last year, but not in sufficient numbers to cause injury or to draw attention of farmers to their presence. They are so extremely small that they could be scattered throughout a grain field by thousands and go unnoticed unless interest were drawn to them through injurious effects upon wheat plants. It is true that this year we have mites in many grain fields where they are doing no injury and where their presence is not suspected by the farmers. Furthermore, it is not improbable that mites have existed on wheat in this state during other years in the past, but owing to some favorable combination of climatic conditions have become a pest only during the last year. It is definitely known that mites in general thrive best during the periods of dry weather. Their great abundance this season may be paritally due to the very long dry spell last year. It is worthy of note that this year, since rains have occurred on some of the extremely severely infested fields, very, very few mites can be found.

Part of the Ayrshire herd on the Riester farm, Steamboat Springs, Colo.

Significant is the fact that severe injury to wheat this year has occurred only on land that was cropped last summer and reseeded to fall or to spring wheat. Also, injury to fall wheat is greater than to spring wheat on this same land. In absolutely no instance, observed or reported, has severe injury occurred on land that was summer fallowed last year.

It is true that mites can be found generally this year on wheat sown on land that was fallow last season, but they are not numerous, are not doing injury, and they probably spread from other land.

It cannot be said definitely that this

(Turn to Page 20).

Statistics Tell Tale of Farm Woman's Drudgery

GOVERNMENT SURVEY DEVELOPS SOME SURPRISING INFORMATION

THE U. S. Department of Agriculture, in its desire to extend to farm women the most practical and acceptable assistance possible, undertook in co-operation with state agricultural colleges and farm bureaus, to learn from the farm women themselves what were their real problems, as a guide to the solution of these problems. This survey is one of the most significant and interesting pieces of work yet undertaken in the field of farm home studies. Ten thousand records were secured largely by home demonstration agents between June and October, 1919, and these have recently been compiled and results made public in a statement bearing the signature of Florence E. Ward, in charge of extension work with women in the Office of Extension Work for the North and West. The following summary from Miss Ward's report contains information that should be studied by the farm women and their husbands.

FLORENCE E. WARD.

A walkout might be foreshadowed in some industries where love and service were not the ruling motives by conditions brought out in Table I, which shows that the average working day, summer and winter, for over 9,000 farm women is 11.3 hours, and that 87 per cent of 8,773 women report no vacation during the year.

Table II shows the amount of time spent in household tasks. Some of these might be eliminated if the principles of modern business were applied, and labor and time spent on others might be lessened if the farm house were as well equipped as the up-to-date barn, the appliances of which the farmer looks upon as so much currency with which to buy efficiency.

The installation of a modern lighting system would release some time in the 79 per cent of 9,830 homes where kerosene lamps are used. The initial cost would be small when weighed against conveniences and comfort.

Nine thousand of the seven-room houses (average) are supplied with from one to two stoves, not counting the kitchen range. These add to the daily work of 54 per cent of the rural women who when heat is needed not only carry into the house the coal or wood to feed these stoves, but according to their statements kindle the fires in the morning and keep the home fires burning throughout the day. This condition could be greatly improved by some type of modern equipment placed in the basement. By this means the whole house could be kept comparatively warm and usable throughout the winter, and congestion avoided, which results when the winter living quarters are limited to the kitchen and one or two other rooms. The normal town dweller keeps all of the rooms of his house comfortably warm. Too frequently the farm family contents itself with going to bed in chilled rooms. Breaking the ice in the water pitcher on rising in the morning is not entirely a matter of tradition. The family sometimes fails to connect lack of warmth and facilities for bathing and dressing with ailments and resultant doctor bills which expense would in many cases pay for a modern heating system.

Table I—Length of the working day and vacation of farm women.

Section of country—	—Summer— Work Hrs.	Rest Hrs.	—Winter— Work Hrs.	Rest Hrs.	Women having vacation Percentage.	Length Days.
Eastern states	13.0	1.6	10.7	2.4	13	12.4
Central states	13.2	1.5	10.5	2.3	12	10.8
Western states	13.0	1.8	10.2	2.4	13	16.4
Average	13.1	1.6	10.5	2.4	13	11.5
Number of records	9530	8360	9164	8164	8773	1241

Table II—Farm women's household duties.

Section of country—	Rooms to care for...	Stoves to care for...	Kerosene lamps...	Carry water Distance	Do own Washing...	Do own Sewing...	Daily mending...	Bread baking...
	Pct.	Pct.	Pct.	Fect.	Pct.	Pct.	Hrs.	Pct.
Eastern states	9.7	1.3	79	54	23	94	86	.5	89
Central states	7.7	1.3	79	68	41	97	94	.6	78
Western states	5.3	2.5	77	57	65	97	95	.5	97
Average	7.8	1.6	79	61	39	96	92	.6	94
Number recorded	9871	9210	9830	6511	6708	9767	9724	8001	9614

Power in the Farm Home.

As power on the farm is the greatest of time and labor savers for the farmer, so power in the home is one of the greatest boons to the housewife. Of the total number answering the question, 48 per cent reported power for operating farm machinery. When we consider that it is often a simple matter to connect the engine used at the barn with household equipment it seems a singular fact that but 22 per cent of the farm homes reporting have this advantage. Power for such frequently recurring tasks as churning and running the washing machine would greatly relieve the farm woman and give her a satisfying sense of modern efficiency. The eastern section reports 50 per cent power on the premises, and 12 per cent in the home. One state reports 7 per cent, and another—the lowest—2 per cent of power machinery in the home. Only one state shows a larger percentage of power in the home (43) than on the farm (21). One state, the highest, shows 48 per cent of power in the home, with 79 per cent on the farm. The one next highest shows 56 per cent in the home, and 65 per cent on the farm.

Running Water Essential.

It is frequently stated that running water is the pivot upon which much modern convenience and comfort depends. Of those reporting, but 32 per cent of the homes have running water, that means, water drawn from a faucet, and implies that water may be in other rooms besides the kitchen. Sixty-five per cent of the homes have water in the kitchen only, this means a pump or possibly a rubber hose attached to a barrel located inside or outside of the kitchen. However, in 60 per cent of the homes there is a sink with drain even though in many cases the water used at the sink has to be carried into the house by the pailful. In 61 per cent of the homes into which the water must be carried this work is done by women. Of 6,784 women answering the question, 20 per cent have bathrooms in their homes. The state ranking highest reported 48 per cent and the one ranking lowest 3 per cent of homes having bathtubs. No one single thing brings so much relief to farm women in meeting their endless tasks as does the use of running water. It is undoubtedly the greatest need in rural home life today on more than two-thirds of the farms. The advent of the bathroom, the indoor toilet and other conveniences dependent upon running water, bring not only untold release from drudgery, but a sense of pride and ownership which is as important a factor in a woman's success in her daily round of work as is modern machinery for the success of the farmer.

Hired Help for the Homemaker.

The survey shows the passing of the "hired girl," once so important a factor in the economic and social life of the farm home. The answers received regarding help by the month and by the day are somewhat ambiguous. We interpret them to mean, however, that the number of homes employing hired women the year round is almost negligible, while about 14 per cent of the 8,683 families reporting employed hired women for short periods, perhaps during the peak of the heavy summer work. The average period during which such assistance is available is 3.6 months, the largest number of hired women and the shortest term being in the eastern section, the smallest number of hired women and the longest term of service being in the western section. From eight to ten per cent of the homes seem to employ women to help by the day, an average of 1¼ days per week. This assistance seems to be mainly for laundry work and cleaning. The percentage of homes employing such help by the day is larger in the eastern section than in the central and western sections. The growing scarcity of domestic help only further emphasizes the necessity for simplifying the housework and providing the farm home with all modern labor saving devices.

Outdoor Farm Work.

In addition to her various duties in the house the farm woman is a productive worker on the farm. Thirty-six per cent of the women reporting help with the milking of the family herd; 56 per cent take most of the care of the garden; 81 per cent care for the chickens; 25 per cent help with the livestock, and 24 per cent help in the field, an average of 6.7 weeks during the year.

The report shows that 35 per cent of the farm women reporting make butter to sell. Since utter making either for home use or for sale adds one item to the farm woman's overcrowded schedule, it would seem to be justified only when a good creamery is not within reach. Experts advise that normally the best utilization of milk is to send the surplus to a creamery, after reserving an ample supply for home use, as the income from the dairy herd is usually greater when the produce is handled by the creamery than when butter is made at home.

The studies of poultry specialists show that 81 per cent of all poultry flocks of the country are cared for by women, with the largest per cent (89) in the Middle West.

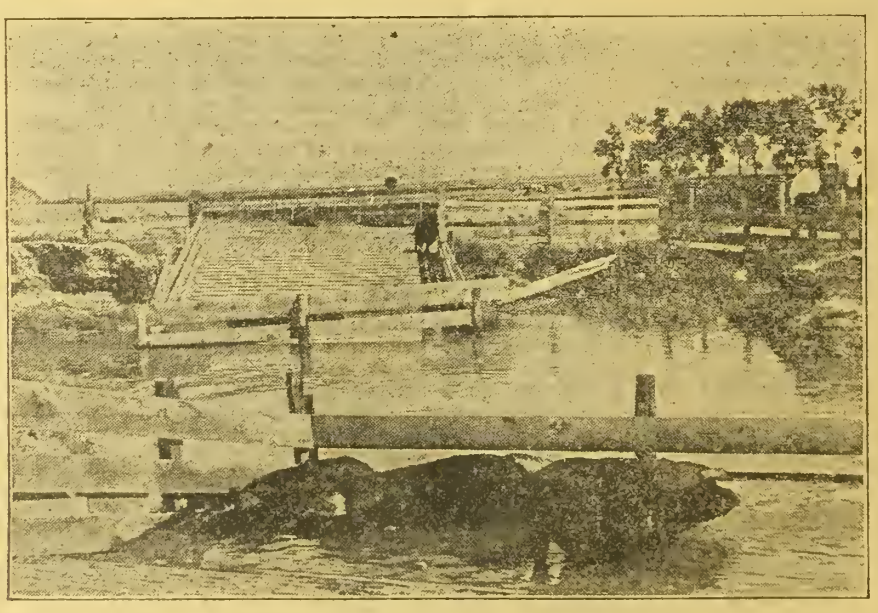
Table III—Equipment in farm homes surveyed.

Section of country—	Running Water	Power Machinery.	Water in Kitchen.	Washing Machine.	Carpet Sweeper
Eastern states	39 pct.	12 pct.	85 pct.	52 pct.	58 pct.
Central states	24 "	29 "	60 "	67 "	46 "
Western states	36 "	22 "	45 "	49 "	29 "
Average	32 pct.	22 pct.	65 pct.	57 pct.	47 pct.
Number recorded	9320	9080	6092	9472	9513

Section of country—	Sewing Machines.	Scr. Wind. and Doors.	Outdoor Toilet.	Bathtub.	Sink and Drain
Eastern states	94 pct.	95 pct.	87 pct.	21 pct.	80 pct.
Central states	95 "	98 "	93 "	18 "	52 "
Western states	95 "	91 "	86 "	23 "	44 "
Average	95 pct.	96 pct.	90 pct.	20 pct.	60 pct.
Number recorded	9560	9667	9580	6784	9334

Table IV—Distances, automobiles, and telephones.

Section of country—	Miles to Dist. school.	Miles to High school.	Miles to church.	Miles to Mkt.	Miles to Fam. Dr.	Miles nearest Hosp.	Miles nearest Nurse.	Pct. Family use Auto.	Pct. Homes having Phones
Eastern states	1.2	4.3	1.9	3.1	3.5	12.8	9.9	48	67
Central states	1.6	5.1	2.6	4.6	4.9	12.7	11.8	73	85
Western states	1.7	9.6	5.1	7.7	10.4	17.7	15.5	62	56
Average	1.5	5.9	2.9	4.8	5.7	13.9	11.9	62	72
Number recorded.	9628	9767	9726	9708	9837	9605	9463	9545	9748



Hog watering plant on Prewitt Hog Farms near Brighton, Colo.

A Cool and Clean Hog Wallow.

Hogs need a good sanitary place in which to wallow. During hot weather this is especially true. Sometimes they are allowed to run to a filthy mud hole which is a good place to breed disease. The accompanying illustration shows a system in use on the Prewitt Hog Farms Co. in Adams county, Colo. It consists of an incline leading from the lots where the hogs are run to the bed of a stream of running water. The incline is constructed of heavy plank with a cleated floor which prevents slipping. It is inclosed by a fence which prevents the hogs from escaping. The water flows through the lower end of the incline and affords a good place for drinking and for the hogs to wallow in the cool running water. This keeps them clean as well as cool. This system, while not possible on some ranches, is very handy where there is access to a stream running through the hog lots. During the hot summer days the hogs suffer from the heat and a cool place in which they can wallow will often save a great deal of loss in weight. This system is practical and could well be copied by other farmers.—H. A. L.

Accounts.

Getting the most from a dollar and making sure that the home industry pays is recognized as an essential part of good business by 30 per cent of those answering the question regarding household finances, who stated that they were keeping accounts. Thirty-two per cent were keeping farm accounts. The records of those reporting show that 11 per cent of those selling butter and 16 per cent of those selling eggs have the money for their own use.

The data indicate an average distance of 5.9 miles to the nearest high school, 2.9 miles to the nearest church, and 4.8 miles to the nearest market, showing that country people are far enough from the center of trade, social and religious activities to tempt the spirit of individualism and to put their neighborliness and piety to the test. It points to the importance of pooling individual interest in common community enterprises such as canning kitchens, buying centers, markets, laundries, salvage shops and sewing rooms as well as social centers for lectures, community sings, dramatics and games, which, if properly handled, break down the isolation of country homes and make possible the accomplishment of many otherwise difficult tasks with a saving of time and labor for the housewife, and often an opportunity for increased income as well as recreation for the entire family.

The automobile contributes materially to community life by reducing the distance factor. It will be noted in Table IV that an average of 62 per cent of farms of the 9,545 reporting own cars, with the largest (73) in the Middle West. The telephone also helps to overcome distance in 72 per cent of the 9,742 homes reporting. Again the Central West shows an advance with 85 per cent of the total number reporting.

Health Conditions.

According to figures in Table IV the average farm home is more than five and one-half miles from the family doctor, nearly twelve miles from a trained nurse, and about fourteen miles from a hospital. These distances are shortest in the eastern section and longest in the western section. This means that even though the farm home be provided with an automobile and a telephone, the farm family may be obliged to act unaided in case of sickness, childbirth or serious accident, and that its members perhaps need more than ordinary training to prepare them for such exigencies.

Along with proper nutrition, clothing and exercise, sanitary conditions have an important bearing on the health of the children and adults on the farm. On the basis of 9,580 reports, 90 per cent of rural homes still have an outdoor toilet. Only 20 per cent (6,784 answering) have bathtubs, and this does not necessarily imply hot water in connection. Almost universally the houses are screened, as indicated by the 96 per cent of 9,667 homes reporting. The desirable screened kitchen porch is found, however, in but 32 per cent of the 9,502 homes reporting.

Figures on Children Surprising.

Among the surprises in tabulating the surveys was the small number of children in farm homes, 7,467 reports showing an average of but 1.18 for each home under 10 years of age, and but .89 for each home between 10 and 16 years of age. It may be of interest here to note that the number of children in rural homes of the east falls below the countrywide average, the report showing .9 children under 10 years, and .77 children between 10 and 16 years, on a basis of 2,573 reports, while that in the western section is the highest with 1.4 children under 10 years (1,734 reports) and .97 children between 10 and 16 years (1,923 reports).

While there may be some doubt with reference to the figures regarding children as has been indicated, in any event child life is an important factor in rural districts, and for the future of our agriculture, if for no other reason, an intelligent effort should be made and as much money expended to safeguard the child life on the farms as to safeguard other life that has to do with the building up the farmstead.

The entire purpose which intimates the work of the co-operative extension service as it pertains to the home is to help the homemaker to so arrange the various departments of her housekeeping that she may secure for herself, her family, and her community the highest possible degree of health, happiness, and efficiency. Hence the facts in this survey become a challenge for increased co-operation with the farming people in placing housekeeping on as sound an economic basis as farming itself.

Balked His Desire.

A gentleman and his wife were admiring some college buildings erected by a wealthy alumnus. Presently they came to a noble hall, over the main entrance of which was a tablet reading: "Erected by John C. Black, as a memorial to his beloved wife."

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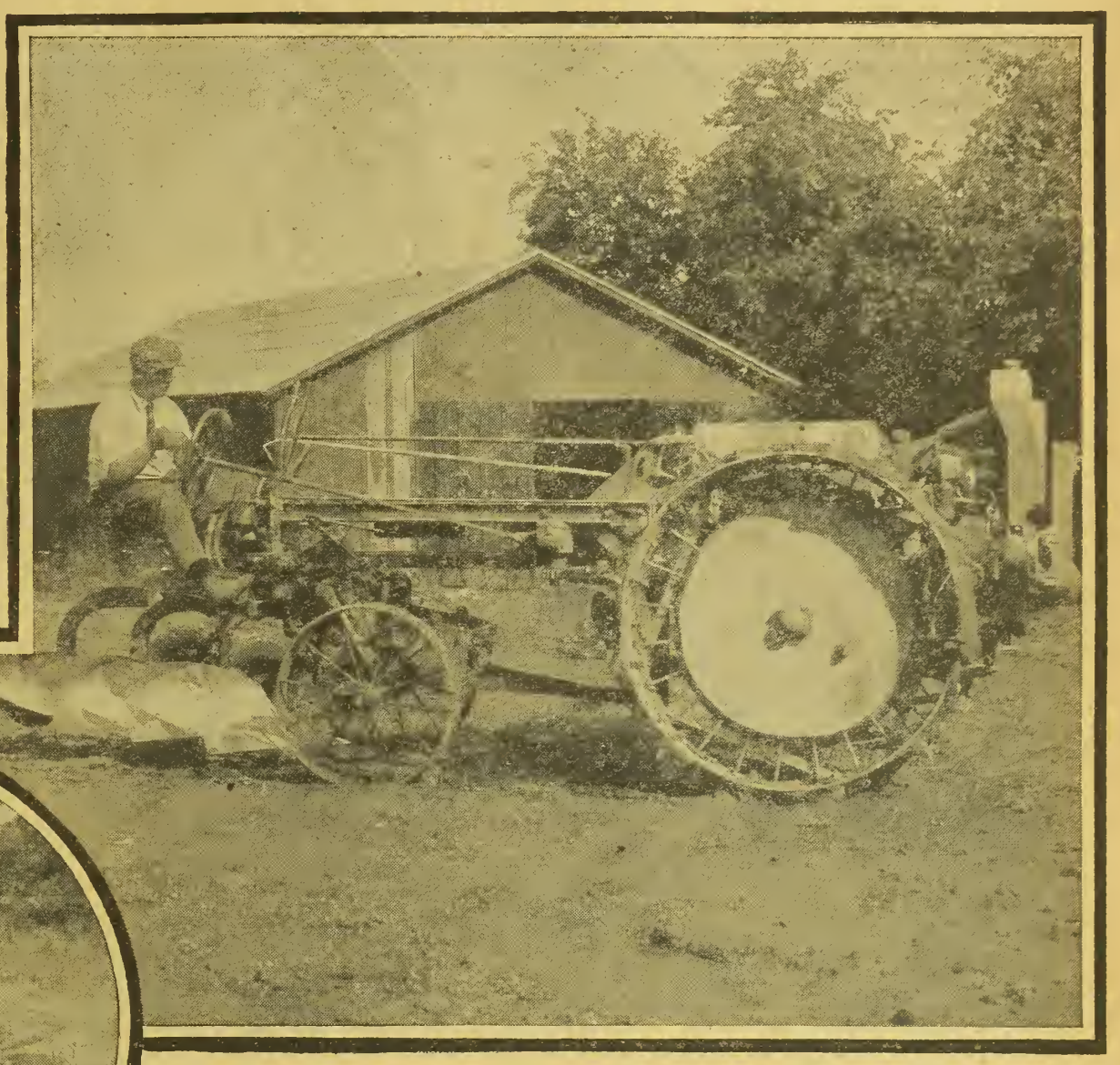

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The Farmer and Publicity.

The business of farming, like that of merchandising, needs publicity. Most city folks have false opinions about people and things on the farm. These opinions are formed and afterward strengthened by the reading of misleading and exaggerated accounts that find their way into newspapers concerning rural matters. Examples are not necessary; every farmer knows that his calling is often misrepresented, usuallly through ignorance of details and not through maliciousness. The city press may be well meaning toward the farmer, but it is not well informed. This is largely the fault of the farmer who has not insisted strongly enough on his right to fair play before the public.

One of the things that the American Farm Bureau Federation has in mind is a Department of Education, one duty of which will be the proper preparation and presentation for the press of material relating to agriculture. This is to be in no sense class propaganda, but solely an effort to give the public the truth about the farmer's attitude and relation to public questions.

There is no better way to do this than in the uncolored presentation of facts such as are developed in conventions and conferences of farmers. An example in this line was the meeting of the executive committee of the American Farm Bureau Federation at Denver recently. In open session some of America's keenest farmers debated problems that affect not only every rural dweller on this continent, but every urbanite as well. Men like James R. Howard of Iowa, S. L. Strivings of New York, Senator Gray Silver of West Virginia, Dr. Walker of California, who rank in brains and educational qualifications with the brightest talent in banking, statesmanship or merchandising, spent two days in Denver, publicly giving their views on the biggest problems confronting the people—food, clothing and transportation—and the Denver newspapers scarcely made the discovery that there was something going on besides Tramway strikes and the siege of Warsaw. The accounts were meager and unsatisfying to any one interested in rural problems and of no particular educational value to the city people who constitute the clientele of the dailies.

This is not said in any spirit of carping criticism, but merely to direct attention to a condition which the farmer should do his part to correct. He is not the only loser. The city consumer whose vision is bounded by paved streets and who looks to glaring headlines for his daily literature is just as much imposed upon as is the farmer by the famine of constructive news matter. His daily absorption of crime, scandal, war and moral pestilence stimulates his energy only in one direction. He lacks appreciation of the other class of happenings, because his taste is warped. The country weeklies are not guilty of this error. Most of them have long since recognized that the country town depends for its lifeblood upon the surrounding rural districts, hence the activities of the farmer and general agricultural news have a large place in the average weekly.

The proposed educational department of the American Farm Bureau Federation can do the nation and the daily press a distinct service if it tackles this problem at the foundation. The editors will not object to a program of this sort because those who take their profession seriously realize that discontent and political unrest are fanned to flame by over-emphasis of the seamy side of life and neglect of normal human activities of a constructive character. Any study of the relationship of rural to urban life and the causes for misunderstanding needs to take into account the disinclination of the daily press to give readers a clear understanding of national problems by an unbiased and complete presentation of facts. We do not believe that the majority of city newspaper readers are lightheaded or frivolous; they will welcome an opportunity to acquire knowledge that will make them keener judges of men and measures and give them a clearer insight into life's real problems. As it is now, the farmer has the advantage of his city cousin. There is a far greater proportion of thinkers among the farmers than among people of the cities. Farmers do not read as much as city people, but we venture the assertion that they are better fed, mentally, than city people whose chief mental sustenance is the daily record of riot and bloodshed. The American Farm Bureau Federation is delving beneath the surface of every problem that confronts agriculture. Nothing is more important than that of a better understanding by the city man of his farm brethren. At that point we must consider the kind of reading that is responsible for his oblique views and his darkened sense of the importance of agriculture to the well-being of all the people, and create in him a desire for better reading by furnishing material which wise editors will accept.

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Women and the Fairs.

To many people a county fair is just a day or two of exhibits, some interesting, and some to be passed by without a glance; some races, more or less exciting, pink drinks with fancy names and a bad after taste, crowds of neighbors and strangers, dust, the shouts of the "indestructible comb breaker" or a kewpie chance outfit and just a tiresome, hot good time.

If your interest consists of that, go anyway, you're needed; but you're not getting the most out of the fair for yourself. Just suppose your small Sam has a pig he has spent days scrubbing, oiling and brushing, which he enters with the elite of pigdom on the opening day of the fair; or suppose that Susy has sewed carefully all summer, and carefully pressed and pinned her apron and bag with the rest of the sewing club's aprons and bags on a big black background in the needlework room, or you yourself, as the manufacturer of the original, mouth watering, tongue melting chocolate cake, have sent in a marvelous example of the same to the cooked foods superintendents, where's your indifferent interest now? When you give personally to anything, you receive from it personally, too. You need the county fair for things it can teach and it needs you for ideas you can give to other people.

Now just a few suggestions with reference to making the most of the exhibit. Canned fruits and vegetables in uniform containers, all quarts or all pints, when several jars are to be exhibited as part of one entry, will always be given a preference by the judge over those sent in assorted sizes and all types of jars. It's the same with several glasses of jelly. They needn't be large containers, but they should all be alike. Have them labeled neatly, and all the labels the same distance from the bottom. Be sure they are in the best of condition and look as fine as you can make them.

Never send in cooked foods on any dish of which you are very choice, nor which you feel as if you could never lose. Paper plates with paper doilies are just as attractive for an exhibit as the oldest family china.

Sewing should always be clean and pressed. Any judge will discriminate against what appears to be a hasty and careless afterthought. Embroidered pieces and laces look much more attractive and command much more attention when the design is put over a background of colored paper or cloth. But be sure the color of the background harmonizes, and in the case of white things is as dainty as possible.

One last word: Don't watch the judge while she is placing the awards. Her work is hard enough at best; and if she's at all inclined to be human, she'll try to be perfectly fair; but she'll dislike you forever for standing or watching and perhaps whispering to your neighbor. Here is wishing your county fair splendid weather, and yourself all the first prizes you deserve!—E. D.

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Why of Our Wool Troubles.

The real cause of the world war, as everybody knows, lay much deeper than the murder of the Austrian duke, and the real cause of the crisis which has overtaken the wool growers is the pernicious and abominable practice of selling shoddy as virgin wool.

Shooting the Austrian grand duke merely climaxed and culminated a condition that had been fomenting for years, and the temporary cessation of buying in the cloth and clothing trade likewise merely culminated the "affect" of more than a billion pounds of virgin wool accumulating in the world's store houses, exclusive of the clip of 1920.

It is this accumulation of more than a billion pounds of unused virgin wool and not the mere temporary cessation of buying which has already caused a drop of 25 cents a pound, or more, in the price of virgin wool and which has made it impossible to market the 1920 clip, except at ruinous prices.

The world's need and demand for virgin wool is greater today than ever before; furthermore, less than one-third enough virgin wool is produced to meet the world's needs and demands. But, so long as shoddy is permitted to be sold as virgin wool, textile manufacturers will continue to use shoddy instead of virgin wool and virgin wool will continue to accumulate and the price of rags and shoddy will be forced up, while the price of virgin wool will be held down and, when some temporary unfavorable condition developes, virgin wool will be unmarketable, except at ruinous prices to the growers.

To adequately meet the needs and the people's demands for virgin wool, the United States would require more than twelve pounds per inhabitant of scoured virgin wool annually.

Last year, the United States used only approximately three pounds of scoured wool per inhabitant. The balance of the material was made up largely from shoddy, notwithstanding that there was at all times more than a billion pounds of virgin wool available. But, because permitting shoddy to be sold unidentified and to pass as virgin wool made it possible for textile manufacturers to make a greater profit by using shoddy than could be made by using virgin wool, the shoddy was used and the virgin wool was left unmanufactured in the world's storehouses, while the people were forced to wear clothes made from shoddy and to pay virgin wool prices for these clothes.—National Sheep and Wool Bureau of America.

✦ ✦ ✦

Save the Sire.

Too often we fail to appreciate the value of giving the sire good care. This animal, which is half the herd, should be the best we can obtain. A poor sire is a losing proposition, no matter if he is registered. If good and of the right backing we should endeavor to get as large an offspring as possible from him.

Allowing the sire to run with the herd is a wasteful practice. If he is good he should be used on more females instead of being allowed to wear himself out on a few head.

As an illustration, a good bull of mature age will serve a herd of 125 head if the breeding is done under limitation. He should be kept up in well lighted and ventilated quarters with access to a pen for exercise.

One service of the sire is sufficient and more simply tends to tear down his vitality. He should be kept in just good ordinary condition and not too fat in order to get best results. The feed should be good and substantial and should not be overbalanced one way or the other.

Good intelligent care of the sire will result in more efficiency in the breeding operations.—H. A. L.

Sanitation in Hog Lots.

One of the very best methods of disease control in hog raising is to keep the hog lots sanitary. There are various kinds of disinfectants on the market which are valuable for this purpose. They go a long way in helping to prevent diseases among hogs. The earthen floors are hard to keep sanitary. A very good remedy for this is air-slaked lime, which can be easily sprinkled over the surface of the ground or other floors about the buildings. It cleanses them of disease germs and is also a deodorizer.—H. A. L.

The Branding Iron

"Many a man has been surprised to be told that he saws his whiskers off," says a Colorado Agricultural College News note.

Not us, Crosman; you don't know our barber.

* * *

The Union County (New Mexico) Exchange Bulletin gives us a good slogan: "United We Stick; Divided We're Stuck."

* * *

At the Fair.

Calamity Ed's brother attended the state fair this year. His wife went with him. They saw everything that was to be seen, heard everything that was to be heard, smelled and tasted everything that was to be smelled and tasted (without charge). Four o'clock found Calamity's brother pretty tired. His wife wanted to go through the fancy work exhibit again, but he balked.

"Naw, my feet hurt, my eyes burn, an' my head aches. You go. I'll set down here an' rest an' wait f'r you," he said.

So he sat down on the steps of one of the buildings, leaned back against the wall, took off his new hat and held it in his lap, and was soon sound asleep.

When his wife returned he was still asleep, but in his hat was a dollar and forty-eight cents in nickels and pennies.—James Burns' Magazine.

* * *

Tenderloin—Once.

When the British colonized South Africa, the native Kaffirs had a splendid bunch of teeth but mighty little to exercise them on. The land was rich but the Kaffirs cultivated it only spasmodically. They were perfectly willing to walk behind a band but not behind a hoe. The British officials determined that on the development of frugality and economic independence of the natives depended the prosperity of the colony and after much cogitation decided that the Kaffirs must be encouraged to till the soil. To that end, the British government presented each Kaffir family with a yoke of oxen to plow the land. For a time, the plan worked excellently. The land was plowed and the crop put in. Then, however, the British authorities noted a prevalence of tenderloin steaks in Kaffir kraals, savory stews bubbled in native cook pots and the equatorial circumference of whole families was distended. The Kaffirs had eaten the oxen, confident that the British government would give each another yoke the next year. But they never got another ox. The native of South Africa are not the only ones who have eaten up the aids they possessed for attaining financial independence and future prosperity. Some of the natives of North America had a few bits of extra tenderloin when they sold and spent the Liberty Bonds they had acquired through saving and investment during the war. Those bonds are the best help possible to cultivate the fields of opportunity.

School Children Get Tickets To Colorado State Fair.

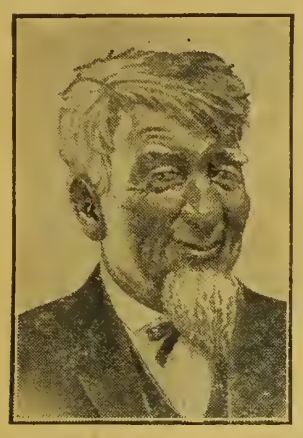
Pupils of all the schools of the state, public and private, are to be the guests of the Colorado State Fair at Pueblo, on Friday, September 24. State Fair Manager J. L. Beaman has written to county superintendents, asking for the number of teachers and the number of pupils in their county jurisdiction; immediately upon receipt of this information the tickets will be sent for distribution.

For the school children 135,000 tickets have been printed; the tickets for superintendents and teachers will be different from those for pupils. Mr. Beaman requests that the school officials be prompt with their replies so that the tickets may be sent at the earliest possible moment.

The United States government exhibit secured for the 1920 fair will be a wonderful educational feature which no one interested in the schools can afford to miss, while there will be a thousand other features at the fair of untold interest to both old and young.

Comment by Farmer Putnam

THE EDITOR ALLOWS HIM TO ATTEND THE FARM BUREAU EXECUTIVE COMMITTEE MEETING.



I FEEL like givin' the rebel yell. I'm plumb full of Farm Burro enthusiasm. The editor let me git in to the executive committee of the American Farm Burro Federation. He told me he would take me on condition that I didn't try to write a foolish article about them big farmers. He sez: "Putnam, our magazine wants to make a good impression on these big guns. They are the farm leaders of America; the brains of agriculture and they are dignified gentlemen and can't be lampooned, so fur heaven's sake when you write up this session don't git familiar with these men." I promised to do my best so what I'm a-goin' to say is all full of dignity and high soundin' phrases and long words and polite speech. What does he want me to say? Does he think I'm a-goin' to use circus language to describe them farmers and say, "Ladies and gents, permit me to call your attention to this magnificent aggregation of 60 h. p. human dynamos, fresh from the plowed fields of America's favored farm lands, the rarest collection of agrarian antiquities ever assembled under one tent"—No, I hain't a-goin' to disgrace myself and the magazine that way because them big men that runs the Farm Burro Federation is human like the rest of us.

Gosh, I was surprised when I seen old George Bishop settin' at the table among them big fellers I sez to one of the men:

"How come George Bishop to be at that table? The last time I seen George he was raisin' hogs on kafir corn and alfalfa down in Cordell, Okla."

"Why, they're all farmers," sez the man.

Well, you could a knocked me over with a feather when I found out that Howard and Scruggs and Bradfute and Leonard and Lee Walker and Gray Silver was all farmers—plain every day farmers. I never seen such a keen lot of men—sharp as a razor edge and quick thinkin' and positive speakin'. When they started off the meetin' one man wanted to know whether they was a-goin' by Denver time or railroad time.

"Farmer time or wristwatch time, eh?" sez Mr. Howard. "Well, we're in Rome, so we'll do as the Romans do."

They got down to business right away and I couldn't keep track of all the money they spent. They talked about hirin' a man to givin' the papers news about the Farm Burro and payin' him six or eight thousand dollars a year! Had a notion to put in a bid fur the job; I'd do it fur half price and guarantee satisfaction or money refunded. I heard the secretary, Mr. Gunnels, read a report of the railroad rate raise, which was handled fur the Burro by Cliff Thorn. One of the men told me Thorn was a Indian and his native name was Thorn-in-the-Side-of-the-Railroads. He made 'em shave off two hundred million a year on the rate raise, but at that it's still high enough to allow the officials to live respectable. The farmers is glad the roads kin git a little more money. They was gittin' desperit. Dan Willard was goin' around the country with the seat of his pants all shiny from settin' in hard bottom chairs and arguin' that the railroads was nearin' bankruptcy. He kin buy a new pair now.

I hope now that they're gittin' this money the U. P. will make a requisition fur a new spitbox fur the depo at Watkins. The sawdust is all caked in the old one with terbacco juice and contents is only fit fur fertilizer. Other improvements also is needed bad. I hope the Farm Burro will see to it that the money is well spent. But, easy come, easy go; I reckon it'll be the same old story—salaries raised all along from top to bottom; balance to go into the sinking fund, where it soon gits beyond its depth.

The next convention of the Federation goes to Indianapolis, which is now quite a town. Kin Hubbard's folks is from near thar, and Abe Martin will be at the convention next December. They was figgerin' on havin' a special wimmins program but some of the committee brought their wives to the Denver meetin' and them fellers spoke up manfully and sez:

"Let us not make the mistake of segregatin' the two sexes in this here good work. The wimmin has equal rights with the men; we could elect wimmin to fill all places on this here executive committee if we'd a mind to, because they is nuthin' in our constitution to prevent it."

(They didn't do it, however). The ladies liked the remark which didn't harm nobody. It's wonderful what good a little remark will do at the right time. SAYIN' the right thing at the right time is a art, and it often takes the place of DOIN' it.

They talked of havin' the farmers come to the Indianapolis meetin' regardless if they is members or not, but they didn't decide on it. I reckon they want to send a committee to Indianapolis to fust wake up the town and kind-a prepare 'em fur the shock when the united farmers descends upon 'em. It'll be a different parade from what went through Indiany and Ohio 25 years ago. It won't be no Coxey's army—nor Cox's army either. You all will remember Coxey that led a brigade of tattered, soreheaded and sorefooted farmers and laborers on toward Washington? Well, they is a different spirit nowadays among the farmers. They ain't sore; they're just determined and nuthin' kin stop 'em in their march toward a square deal. They used to ask it fur theirselves alone; now they want it fur everybody and that's the only thing that'll win any battle in the long run—equal rights to all and favors fur none.

None of them executive members ripped or snorted around lambasting the corporations, or big business; it warn't no school of oratory. But don't think fur a minut that they're a easy goin' bunch of idealists. They're cool as ice about the big problems, and they smile while they set aside thousands of dollars to tackle farm economics at bedrock. Mr. Howard kind-a pinches his forehead together in wrinkles and twists up his lips a little when he speaks. He don't talk with a drawl but every word comes out by itself like it was cast and stamped with a steel dye and every little word has a meanin' of its own and was fathered by a deep thought. He allus smiles a little with his eyes when he says things that count. He ain't no dynamic leader that gits a feller all stirred up on the inside and makes him want to go out in the jungle and drink gorilla blood. No, that ain't the type of none of them men. They're plain, clear headed, deep thinkin', constructive leaders that any farmer'd be proud to foller. They'll fight and fight fair, but it won't be no class war because equal rights is their slogan. I sez to Josephine, who was a-lookin' on:

"Josie, what do you think of them men? Shouldn't we be proud to belong to the Farm Burro?"

"Tom," she sez, "don't make gods of 'em in your article. You'd ought to talk to Mrs. Bishop, Mrs. Jamison, Mrs. Bradfute and Mrs. Burton, and git the other side of the story."

"Woman," I sez, "you're allus takin' the joy outen life."

"Tom," she sez, "keep your feet on the ground. Them men is human. They're clay the same as you, or their wives wouldn't have to foller 'em around over the country."

"You said a mouthful, Josie, we're all clay, and I'm so durn dry that I'm dusty"

Thos. Jefferson Putnam

Saving Sugar in Canning.

One-fifth to one-quarter less sugar can be used in making jelly and jams, experiments made by the household experts in the United States Department of Agriculture experimental kitchen indicate.

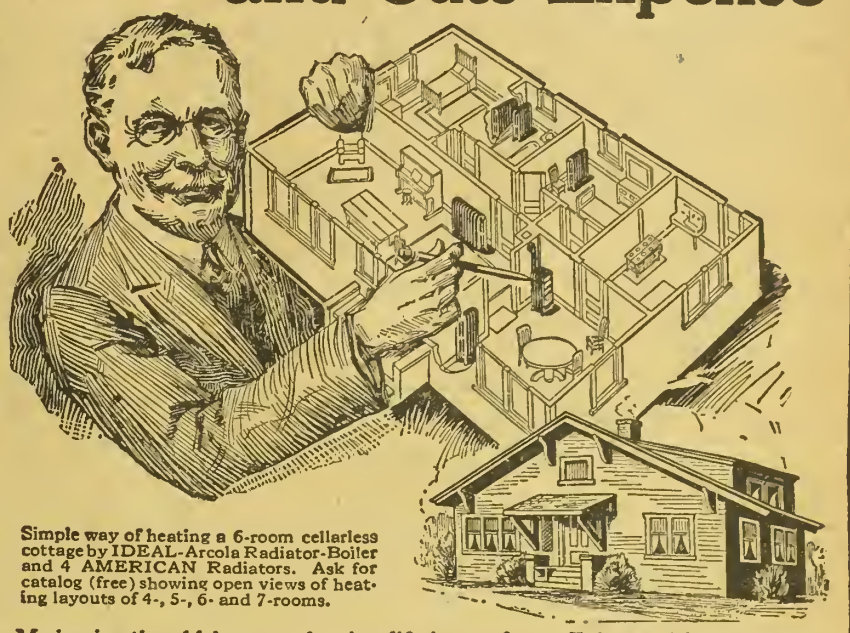
Another sugar-saving wrinkle tested by the experiment kitchen is to add one-quarter teaspoon of salt to each cup of fruit juice for jelly or pulp for jam, marmalade, and conserve. In the case of nonacid fruit this makes the absence of the full amount of sugar less noticeable. The salty taste will disappear after the product has stood for a few weeks, but the flavor will be much the richer for the addition of the salt. Salt was so used in England during the war, and the method suggested was based on reports of the process.

With fruits of pronounced flavor, or where lemon and orange peel or spices are used for flavoring those with mild flavor, various sirups take the place of part of the granulated sugar. Usually half and half is the proportion used in substitution.

"Breeds of livestock can not be improved without the constant use of good sires. A good sire so impresses his characteristics upon his offspring that they are more like him than like the common herd."—Missouri State Board of Agriculture.

If in need of advice, ask Western Farm Life Service Bureau.

This Heat Beats Winter and Cuts Expense



Simple way of heating a 6-room cellarless cottage by IDEAL-Arcola Radiator-Boiler and 4 AMERICAN Radiators. Ask for catalog (free) showing open views of heating layouts of 4-, 5-, 6- and 7-rooms.

Modernize the old home and enjoy life in comfort. This small house heating outfit is built on the same principle as the big plants for residences. The IDEAL-Arcola is inexpensive, safe, easy to run, clean, economical with fuel and will last and heat your home for generations. It will heat all rooms evenly no matter how hard the blizzard blows—never wears out or needs repairs.

IDEAL-Arcola Radiator-Boiler Farm Home Heating Outfits

Any dealer will furnish in sizes to suit rooms and climatic conditions.

For Soft Coal	No. 1-B	Size	IDEAL-Arcola	with	100	sq. ft.	of	Radiation	$142
	" 2-B	"	"	"	150	"	"	"	176
	" 3-B	"	"	"	200	"	"	"	213
	" 4-B	"	"	"	250	"	"	"	251
	" 5-B	"	"	"	300	"	"	"	290
For Hard Coal	No. 1-A	Size	IDEAL-Arcola	with	135	sq. ft.	of	Radiation	$163
	" 2-A	"	"	"	200	"	"	"	208
	" 3-A	"	"	"	265	"	"	"	251
	" 4-A	"	"	"	330	"	"	"	299
	" 5-A	"	"	"	400	"	"	"	349

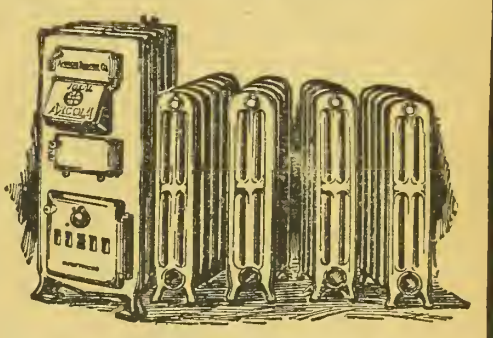
Prices include Expansion Tank and Drain Valve. Prices do not include labor, pipe and fittings used in installation and which are supplied by the local dealer at extra charge. Radiation is of regular 38-in. height 3-column AMERICAN Peerless, in sizes as needed to suit your rooms. Outfits shipped complete f. o. b. our nearest warehouse, at Boston, Providence, Worcester, Springfield (Mass.), Albany, New York, Philadelphia, Harrisburg, Pittsburgh, Baltimore, Washington, Richmond, Buffalo, Cincinnati, Indianapolis, Birmingham, Detroit, Chicago, Milwaukee, Minneapolis, St. Paul, Des Moines, or St. Louis.

Shipped complete for immediate installation

The beauty of the IDEAL-Arcola method is that no cellar is needed. Everything is on one floor. The Arcola is placed in any room that has a chimney connection. No running to cellar. Same water is used over and over again for years. No fire risk.

Buy now at present attractive prices for outfits complete!

IDEAL-Arcola outfits consist of the boiler and radiators to heat various size houses. Write us your requirements! Unlike stoves, there are no coal-gas leaks into the living-rooms. The IDEAL-Arcola delivers the soft, radiant warmth of hot water—not the dry burnt-out atmosphere of stove heating. There is no fire risk to building—no danger to children—fire lasts for hours! The Arcola burns hard or soft coal.



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Catalog showing open views of houses, with the IDEAL-Arcola Boiler in position will be mailed (free). Write today

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and through the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Taking Up Estrays.

What is the law in regard to taking up range horses and working them?—A man took up a 4-year-old colt, broke it to work, cut out his foretop and trimmed his mane. The horse is also sweeneyed and when inquiry was made he denied having a horse of this kind on the place. Later he said he had a right to work any unbranded horse regardless of who he belongs to.—R. N. S., Kit Carson, Colo.

According to the state law of Colorado, on the handling of estrays, it would be unlawful for a man to take any animal from the range or public highways and keep it without notifying the State Board of Stock Inspectors. Said notice, with the description of the animals must be sent in within five days after the animal is taken up. Unless he does this, he lays himself liable to a $500 fine for each and every offense. The State Board of Stock Inspectors then advertise the animal for a period of time, and in case the owner is not found, the animal is sold and the proceeds from the sale go into the Livestock Inspection fund. It is unlawful for a man to attempt to change the identity of an animal in any way. Such an offense lays him liable to a penitentiary sentence of not less than 1 year and not more than five years.

Needs Credit for Cows.

I would like to get some cows this fall and would like to know if I could join the Farm Loan Association? This would also benefit several of my neighbors who are honest and trying to get under the present high interest of the money they have to borrow.—I. W., Huerfano county, Colo.

Sorry to inform you that you would not be eligible to join a farm loan association under the Federal system. The law requires that loans be made only on first mortgages to owners, consequently you could not join until after you have proved up. At any rate, the system is temporarily tied up because of litigation in the Supreme Court instituted by the mortgage brokers. It will be several months before any further loans are made under any circumstances. Efforts are being made now to secure the passage of a law providing for personal rural credits which would take care of homesteaders who have not proved up. However, a year or two may elapse before the law is passed and by that time you will undoubtedly have secured your patent so that you can join a national farm loan association. We presume you are in touch with Mr. S. L. Owens, your county agent, who has headquarters at Walsenburg, and who is always glad to make suggestions along the lines of developing the new farms of the county. You are on the right track in trying to get hold of some dairy stock. The county agent may be able to put you in touch with some one who is in position to furnish the cows to be paid for out of returns from cream.

Alfalfa and Sweet Clover.

Would it be advisable to sow alfalfa about the first of September? If so, would it be O. K. to sow it light with rye? This is sandy loam. Would it be all right to sow white sweet clover with rye the first of August in heavy soil? Would the sweet clover make a heavy cutting next fall after the rye is cut in July and would it have to be reseeded for a crop the following year? These are both dry land places. Alfalfa does real well here after the first year, but have never tried sweet clover on the heavy soil.—E. C. K., Moffat county, Colo.

It is not advisable to sow either alfalfa or sweet clover with a nurse crop on dry lands. This has been tried time and again with the result, usually, of a crop of grain but no alfalfa. Of course, if your land is sub-irrigated, or subject to any special advantage in moisture you might succeed in getting a stand by using a nurse crop. As a rule, however, this practice is advised only in the irrigated sections. As to the time of sowing most of our alfalfa growers sow early in spring. If you want to try fall sowing, August 1 should be safe in your locality, as it is not apt to be visited by killing frost until after you get a good growth. September 1 would be too late for alfalfa. You might sow sweet clover as late as September 1 if you used the unhulled seed. It would not germinate during the fall, but would get a good early start in spring.

Perhaps the best guide regarding time of sowing alfalfa would be the practice of the older settlers in your own community. Altitudes and climatic conditions vary so greatly between sections of the state, that we do not feel safe in advising you. O. F. Davis, your county agent, with headquarters at Craig, can advise you. In seeding either of these crops early spring is the best time, as that gives you a chance for deep fall plowing, the conservation of winter moisture—and moisture is the important feature in getting a stand of either crop.

New Prairie Dog Killer.

Western Farm Life:

I am sending you my plan for killing prairie dogs. Take old burlap and cut strips to make a ball as large as your hand. Pour gasoline on ball and put ball in hole and push as far down as you can with a long stick, then cover hole with dirt. Mr. Dog will wake up in dog heaven, or some other place not known to us. Have tried this plan and know it will work and kill any dog and is not near so dangerous as the poison that is used for this purpose. Your paper is all right.—Anton Koblitz, Valdez, Colo.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Horse Has Fistula.

I have a horse which has fistula of long standing and would like to have some information through your veterinary department as to what course to pursue to cure him. We have no veterinary in this county.—J. E. H., Huerfano county, Colo.

It is very difficult to treat an old standing case of fistula of the withers successfully. It usually costs more than the horse is worth. The pus has usually burrowed extensively in the surrounding tissues and formed sinuses. These sinuses must be removed either with the knife or by sloughing before there is any possibility of healing. To succeed in these cases taxes the skill of the best veterinarians. At best it requires several months time and considerable expense to effect a cure, and most horses are not worth it. There is no specific cure, nothing that can be injected that will be of benefit. Unless you can get the horse to a competent veterinarian, it will be better to destroy him.—G. H. G.

Horse Has a Tumor.

My horse has a big lump as large as my hand on the point of the shoulder. It never broke or gave off any pus or ran any blood or water. It was caused by a kick or maybe a misfit collar. What is it and what is the remedy?—T. G. B., Utah.

The case described is probably a fungus infection of the deep structures of the shoulder. This fungus (Botryomyces) is very much like the one that causes "lumpy jaw" in cattle. There is slight tendency to formation of pus. The tumors are fibrous in nature, grow very slowly, and for some time cause very little inconvenience to the animal. They frequently grow on the end of the spermatic cord after castration. They frequently appear on the head of horses, sometimes on the back (sitfasts) shoulders, or even in the internal organs. The potassium iodide treatment which is so successful in actinomycosis is a failure in this disease. The only treatment is surgical. Open the tumor with a free incision to the bottom. If it contains no pus then complete extirpation should be undertaken at once. These tumors sometimes grow to the size of a water bucket and destroy the life of the animal.—G. H. G.

Mare Has Abscesses.

What ails my mare; she is three years old last spring. Last November a swelling started just under her chin, it then worked upward to the throat in about three or four days it looked ready to break, it was oozing through the skin and had a very strong odor. I took my knife and opened it and it ran a quart. I then put flaxseed meal poultice on it right on the throat where the throat latch buckles; in a few weeks it healed up, then some times it would swell up again just like it might break soon, and in a few days it would be well. Some people say it is distemper. Can you give me a cure for it?—J. W. M., Kiowa county, Colo.

The symptoms given do not indicate strangles, which is commonly called distemper. In this disease there is a discharge from the nose and the pus does not have an offensive odor. Neither do the swelling recur in the same place. On the other hand, if several animals are affected it certainly is infectious. The indications are that it is caused by a foreign body in the tissue. Ulcerated teeth might be responsible. Occurring in several animals it may be irregular strangles, but is most unusual. I am unable to even make a good guess in this instance. On general principles it will be well to open the abscesses as soon as they form and clean the cavity by injecting antiseptic solutions. I do not know how to advise you better in this instance.—G. H. G.

Necrobacillosis in Pigs.

We have eleven nice pigs farrowed in April and they grew fine and seemed healthy and were all right until about the first of July I noticed one had a hard lump on one hind leg below the joint (on the inside) and became lame and soon two or three more had them. Some of them have them on the front legs. When I went to feed them one seemed slower to get to the through and ran up and then backed off. I tried to feed from the pail, but it wouldn't drink and I noticed that its ears on the outer side were swollen some and almost purple about half way to its head. I gave it some native herb tablets and put it in a cool place and it died through the night. Kindly tell me what is the matter with them and the remedy.—G. W. H., Pueblo county, Colo.

Your pigs are undoubtedly affected with necrobacillosis. This disease in pigs is sometimes called "sore mouth" or canker, when it is confined largely to the mouth. In calves it is called calf diphtheria, in sheep "lip and leg ulcerations." The same germ, B Necrophorus, causes foot rot in cattle and sheep and occasionally affects the feet and legs of other animals. This disease in its various forms has no doubt cost the state more than has hog cholera, or any other one disease. You must have a general clean-up of the premises. Kill and burn the pigs that are now diseased. Keep the healthy ones in new clean quarters. Use disinfectants freely. There is no known biologic that can be used in its control. Examine the mouths of young ones frequently. If ulcers are found they should be burned deeply with lunar caustic. It will be well to dip the little pigs in a tub containing solution of potassium permanganate, one rounded teaspoonful to a gallon of water. If you are willing to pay the price in effort for doing all these things, and doing them well, you probably will be rewarded by saving some of your pigs and making the place safe for raising hogs in the future.—G. H. G.

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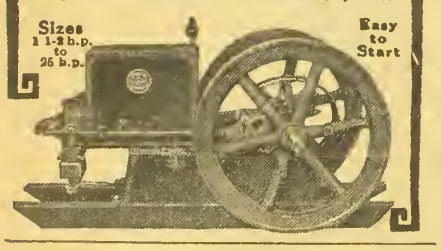

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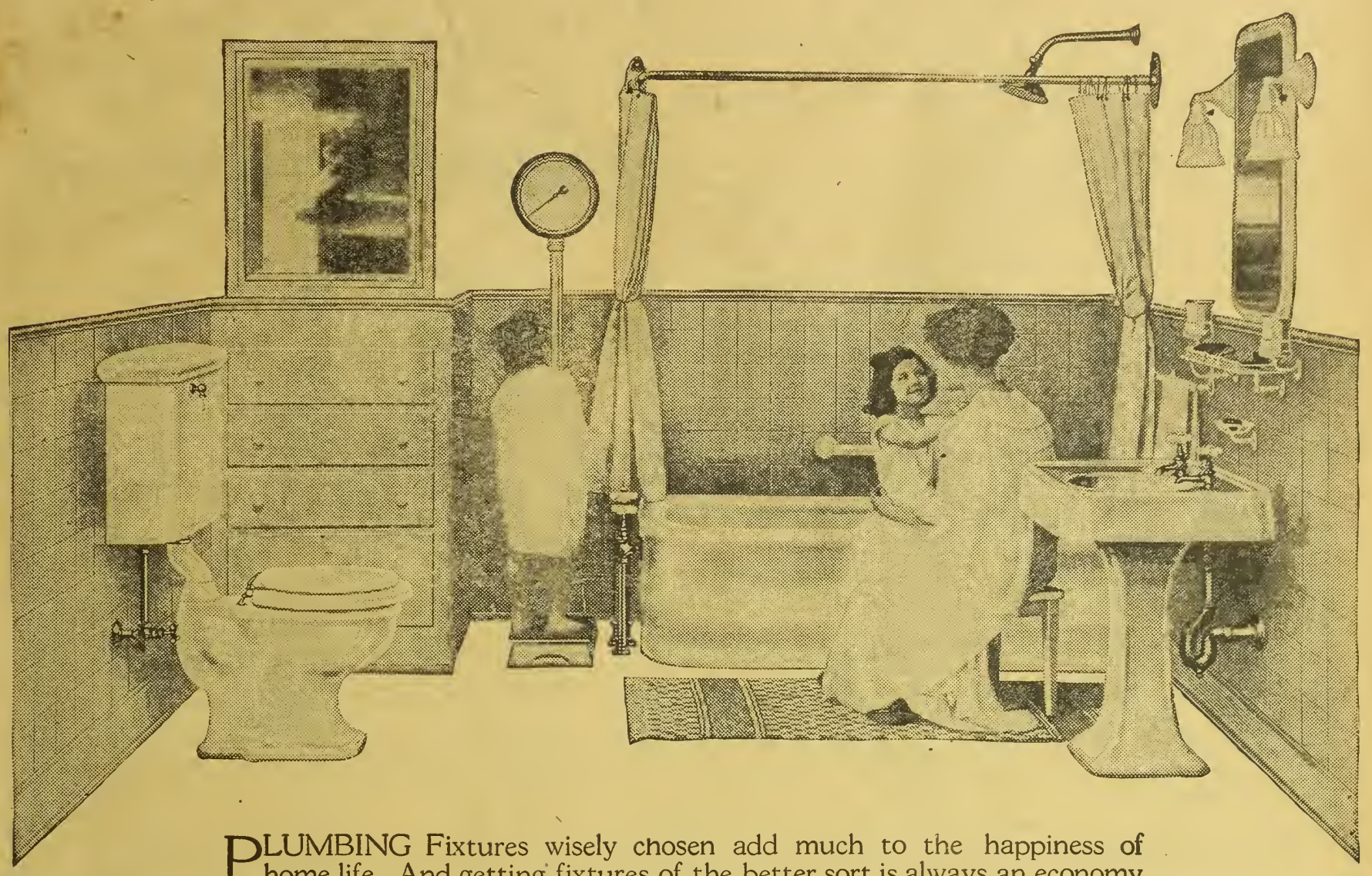

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State Holstein Breeders Picnic

ENJOYABLE SOCIAL EVENT AT PALMER LAKE.

H. A. LINDGREN.

LAST spring a dairymen's meeting was held in Denver at which time a number of the state Holstein breeders suggested a Holstein picnic for some time during the summer months. The idea was well received and a committee was unofficially named to carry out the plans.

Mr. W. S. Partridge, who has the Estemere place at Palmer Lake this season and who is a breeder of Holsteins at Holy, extended an invitation to hold the gathering on the lawn of the Estemere place. One would need to travel a long way to find a nicer place to hold a picnic than there. The grounds are well kept, good lawn and plenty of shade This was the meeting place on August 6, when some 200 Holstein breeders and their families congregated to enjoy the day.

Breeders came from all over the state and some from other states, to discuss their problems and to become acquainted with the other breeders. A sports program was in charge of Mr. W. H. Lauck, former county agent of El Paso county. There were races for the old and young, fat and lean, male and female, all of which assisted in making the crowd merry.

Following the sports all joined in one big spread of good things brought by the people who attended. There were sandwiches, chicken, pickles, cakes, meats, fruits, pies, ice cream and coffee, enough to satisfy many more than those who came.

After dinner, Mrs. Partridge led in community singing on the lawn. Mrs. R. G. Douglas of Rush, the able president of the Colorado Holstein Breeders' association, presided, and gave the address of welcome. She pleaded for the co-operation of the Holstein breeders of the state in making the association a greater success. Then Senator Agnes Riddle spoke on the value of purebred sires. Her address was characteristic and carried the usual amount of humor and sound logic. She spoke of the need for better sires in man as well as beast, and said if more attention had been given to this we would not have had the unrest we are now facing. She complimented State Dairy Commisioner Morton on the work done by his office for the furtherance of dairying in Colorado.

Prof. Morton followed with some pointers on cost of production of milk. His remarks carried a great deal of food for thought. He encouraged the dairymen to stay by the industry as nothing was to be gained by going out of business. The man who stays on is the one who makes money. He advised placing dairying on the acreage basis, in other words, to carry at least a few cows in relation to other industries on the farm.

Miss Gaiser, daughter of Lee Gaiser of Denver, delighted the audience with two splendid readings. Next in order was a barn dance. Mr. Partridge had prepared a room in the barn for dancing. A jazz orchestra was brought from Colorado Springs by Geo. Sinton. The dance lasted until 6 o'clock and was greatly enjoyed by all.

The picnic was a grand success, due largely to the manner in which all the Holstein people took hold of it and to the warm-hearted hosts, Mr. and Mrs. W. S. Partridge and daughter.

There is some talk of making this an annual affair, which no doubt will meet with general approval with the membership of the association. A great deal is to be gained by the breeders getting together in this way and talking with their co-workers about the development of dairying and their breed in the state.—H. A. L.

Picnic Notes.

Prof. W. H Olin, agricultural supervisor of the Denver & Rio Grande railroad, attended the picnic. He is a strong booster for more and better dairy cows along the D. & R. G. system.

The Kramer Bros. of Brighton attended the picnic. They are comparatively new breeders in Adams county but have some very good foundation Holsteins.

Joe Loesch of the Pahgre Valley ranch at Montrose enjoyed meeting the state breeders at the Holstein picnic. The Loesch Bros. own part interest in Sir Johanna Bess Segis, the bull that attracted so much attention at the Arden Farms, St. Paul, during the recent national sale.

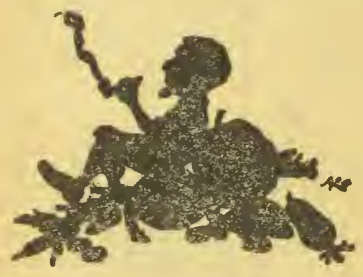
When it comes to holding anything in Colorado for the upbuilding of dairying, the Hall Bros. and their wives are always to be depended upon. They are certainly loyal boosters for more and better dairying in the state.

The breeders appreciated the courtesy of W. G Foster of Wallie Farms, who presented each person with an official badge, on which the individual's name was written.

Mrs. Benson, a well known New York state Holstein breeder, who was in Colorado on vacation, attended the picnic and made many friends.

Mr. and Mrs. M. E. Penrose helped make the picnic a success by giving the glad hand to all comers.

Col. G. M. Banks, the genial auctioneer, whose million-dollar voice is often herd at Holstein sales, donated the use of the voice for the day in calling the events, and did much toward keeping the crowd entertained.



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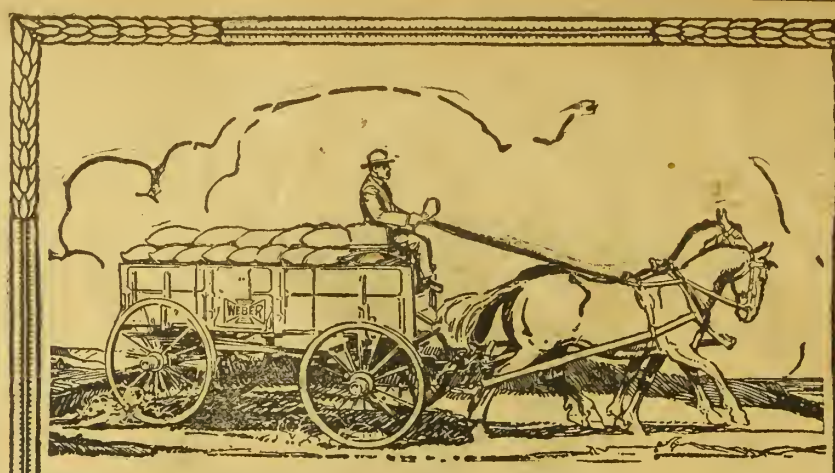

Wagon Satisfaction During Wagon Long-life

WITH many of your purchases you buy a question mark, and the question is this: "Can I expect this to give me good service for a good, long period?" When the Weber Wagon is your investment, a long history of satisfaction answers and cancels the question for you at once.

Weber has set high standards for seventy-five years and, as a part of the International Harvester line, it leads now in selection of materials, in construction, and in exclusive refinements.

For rough and ready hauling you cannot afford to buy a wagon which has not these famous Weber features:

International fifth-wheel—a strong, solid support between bolster and sandboard, saving wear and tear and breaking of king bolt, circle iron, and entire front gear. An exclusive feature which immediately became very popular.

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And Weber wagons are also leaders in the greatest of modern wagon improvements—they are made to follow the universal *56-inch tread*, like all automobiles and all modern wagons. They are made to fit into the twentieth century roads, to travel smoothly, without the old rough road strains on gears and wheels.

Make no mistake in your wagon buying. It is not easy to detect low standards under paint and varnish, or to see the pitfalls behind so-called low price. But easiest of all is this method of buying certain and complete wagon satisfaction—choose Weber. See the International dealer.

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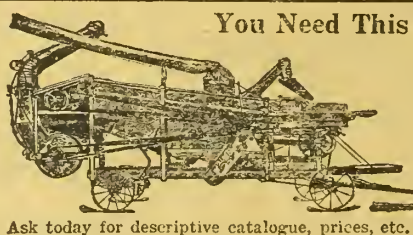

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Ask today for descriptive catalogue, prices, etc.
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Nash Livestock Sale.

Word has just been received from Allen Nash, a prominent livestock farmer at Montrose, Colo., regarding a livestock sale on his farm in September. This sale is advertised elsewhere in this issue. The writer has personal knowledge of the stock to be offered in this sale. The Holstein cows, most of which are high grade, have been imported from Wisconsin and Arizona. There are few herds anywhere that will show up so well in production. Mr. Nash has kept records on his herd and can tell their production by months. During the month of June this year the average milk production for his herd was 1,164 pounds. The average fat production was 43 pounds. In July the average milk production was 1,219 pounds per cow, and fat production 42 pounds.

His herd sire was purchased from the Pahgre Valley Farms of Montrose. He is a 25-pound son of Sir Ritje of Pinehurst, a bull who has sired a number of 30-pound daughters. This bull will be sold at the sale.

A very fine lot of Duroc Jersey hogs will also be sold. Mr. Nash has a practical type of hog that has been making him money for several years.—H. A. L.

Co-Operative Shipping Associations.

Co-operative livestock shipping associations are being organized at a rapid rate all over the country. This is one of the most practical marketing associations that has been formed. It brings results in a very short time and will save a great deal of money to the livestock industry, especially where the smaller owners are concerned. Colorado has a large number of them in operation and they are gradually being enlarged to take in more territory. Many of these are now made into county organizations. The county plan has many advantages. The main one is that a manager in a county can well afford to spend all of his time in the work which assures a better income. Where this is done the best of men can be obtained as the salary will amount to $2,500 to $3,000 per year.—H. A. L.

Lice on Hogs.

Crude oil or smudge oil as an agent for the destruction of hog lice is very effective. It can be applied with a brush directly to the hair or by means of hog oilers of various descriptions. Lice irritate the hog and result in an increased quantity of feed to put on gains. They are also carriers of disease. Several treatments at intervals of 12 to 14 days are necessary in order to rid hogs of this pest.—H. A. L.

Take A Vacation This Fall!

HERE are Thompson's ideas on farming.

"I've been watching my neighbors for many years. Some farmers 'dig in' the year around. They make money, but—

"Last fall when I got back from two weeks' shooting my neighbor, Hutchins, tried to get me riled because I'd been loafing.

"I didn't answer him. It wasn't any use, but I don't mind saying that Hutch is envious because we get more done and treat ourselves better than he does. We all get in a rut if we stick too close to our job. He never leaves the farm except to go to town.

"And you ought to to see the deer I brought back. I sent some venison over to Hutchins just for the fun of it."

Remington
for Shooting Right

Men like Mr. Thompson appreciate Remington High Power Autoloading and Slide Action Rifles. They have great respect for the unquestioned responsibility and experience behind all Remington products.

For more than 100 years it has been the practice of Remington to keep in advance in improvements and to keep faith with the sportsman and the dealer on the basis of actual performance behind all firearms and ammunition.

The first Remington was produced in the shop of a farmer-blacksmith in 1816. Not entirely on that account, but because of practical merit, Remington rifles have always held a strong position with folks on the farm.

Any one of the Remington dealers in your town will be glad to serve you. There are over 88,000 of them throughout the country.

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Dairying and Hog Raising

H. A. LINDGREN

All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, Western Farm Life, Denver, Colorado.

Pays to Feed Grain.

During the months of February, March, April, May and June, Mr. G. M. Dickson of La Junta, Colo., produced milk at an average feed cost of $1.40 per 100 pounds of milk. During the same period Mr. X. of the same place produced milk for an average feed cost of $1.97 per cwt. Why this large difference? Mr. Dickson fed grain and Mr. X. did not. Not only did Mr. Dickson's cows make cheaper milk, but they gave almost twice as much as Mr. X's. The grain feeder's herd averaged 4,275 pounds of milk for the five months and the non-grain feeder's herd only averaged 2,755 pounds per cow. Does grain feeding pay?

Non-Grain Feeder.

	Feed cost per 100 lbs. Milk.	Feed cost per Cow per Day.
February	$2.50	$0.40
March	2.11	0.40
April	2.48	.40
May	1.31	.333
June	1.47	.30
Average	$1.97	$ .366

Grain Feeder.

	Feed cost per 100 lbs. Milk.	Feed cost per Cow per Day.
February	$1.69	$0.50
March	1.90	.55
April	1.65	.49
May	1.13	.32
June	.64	.17
Average	$1.40	$ .40

This comparison shows that the grain fed herd produced milk at a saving of $0.57 per cwt.

As far as better individuals are concerned, Mr. X's herd averaged better than Mr. Dickson's, yet because of a lack of a balanced ration they did not do as well. The good cow must be backed up by correct feeding to "make good" and production records are the necessary means for locating the boarder.—A. A. Eastman, La Junta, Colo.

Co-Operation in Testing Work.

An arrangement has been made whereby breeders of the Western Slope may do yearly testing work under the supervision of the Colorado Agricultural College. Registry of merit and semi-official testing require the visit of a supervisor once each month. Where long distances are involved the expenses for supervisors has been great. Heretofore purebred breeders living on the Western Slope have hesitated to start yearly testing work on account of excessive costs, it being necessary to send a supervisor from the Agricultural College.

A representative of the state dairy commission, together with county agents from Montrose, Delta and Mesa counties, has arranged contracts between the experiment station and a number of purebred breeders in these counties whereby yearly testing can be done, the expenses being prorated among the breeders.

Breeders contracting for this work are Loesch Bros., Pahgre Valley ranch, Holsteins, Montrose; R. W. Romig, Guernseys, Montrose; H. H. Sanders, Holsteins, Olathe; C. C. Wortman, Holsteins, Olathe; Heddles Bros., Guernseys, Paonia; Artt Bros., Holsteins, Austin; Geo. La Grange, Jerseys, Grand Junction, and Louis Harms, Jerseys, Grand Junction.

It has been generally conceded that breeders on the Western Slope had some high class animals. Testing for yearly records under the supervision of the college will give the breeders an opportunity to obtain records on these animals.

J. L. Prottengeier of Montrose has been secured to start this work. Several herds have already been tested for August. Other breeders are becoming interested in this work and it is thought that when it is once established there will be sufficient testing work in these three counties to require the services of one man full time.

Roundworms in Pigs.

Investigations reported in a recent technical publication of the Bureau of Animal Industry, United States Department of Agriculture, disclosed additional evidence of the importance of keeping young pigs in clean pens that have not been contaminated by other swine.

A roundworm of pigs, known as Ascaris suum, is held responsible not only for many deaths among swine but for a large proportion of the runts among these animals. Development and perpetuation of the roundworms is fostered by badly drained and manure-covered hog lots, which are on this account dangerous to young pigs and not good for pigs of any age.

Eggs of the parasite may remain alive in soil for five years and even longer. Places occupied by pigs harboring the adult worms in their intestines will become badly infested with the eggs. Pigs farrowed and kept in such places are certain to pick up many of these eggs, and even suckling pigs are liable to swallow eggs present in dirt adhering to the teats of the sows.

Investigation by the bureau have proved that after the eggs have been swallowed and have hatched in the intestine the young worms do not immediately settle down, but penetrate the wall of the intestine and travel to the liver and the lungs. From the lungs they crawl up the windpipe and then down the esophagus and return to the intestine. Only after they have passed through the lungs do they establish themselves in the intestine and grow to maturity.

In passing through the lungs the young worms cause more or less damage to these organs. Pneumonia may result and the animal may die about a week or ten days after infection. Symptoms of this pneumonia among pigs are commonly known as "thumps." Not all cases of "thumps" come from this source, but the worms are frequently the cause. Young pigs are more susceptible than older pigs to infection and are also more likely to suffer severely from migration of the young worms through the lungs.

There is no treatment for the lung stage of the parasite. If the pig survives he may later be treated with worm remedies to remove the worms from the intestine. In such cases, however, it commonly happens that the animal has been so seriously injured by the worms during their migration through the lungs that even after their expulsion from the intestine the pig is unable to make up for the setback he has received, although he does better than if allowed to go untreated.

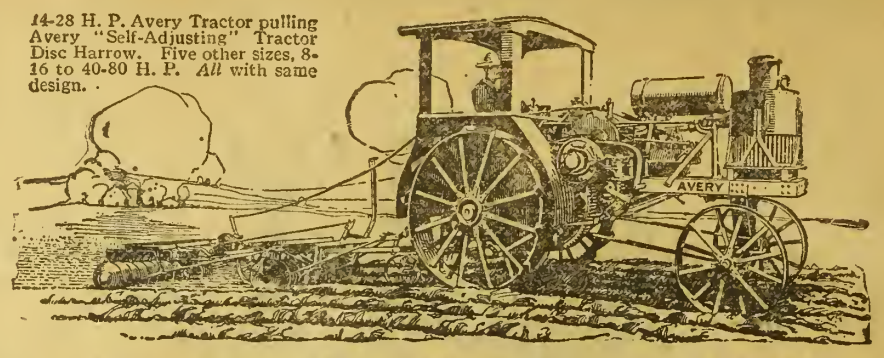
Checking Up Cream Tests.

Realizing the growing importance of the dairy industry to the farmers of Idaho and recognizing the crudeness and inaccuracy in the making of butterfat tests by local buyers, this Department has placed an inspector in the field to check up butterfat tests and to correct crude practices in the buying of dairy products. The department has the enforcement of the "Discrimination in the Purchase of Farm Products Act" and it is felt that the testing for butterfat by untrained men may be the source of much discrimination and loss to producers.

Nelson J. Smith, Chief Hay Inspector of the Department, a graduate chemist, formerly with Parke, Davis & Co., has spent several weeks checking up the Babcock tests of local shipping stations and has found a need for much educational work. Local cream buyers generally buy on a commission or very small salary and, in many cases, the men, together with inadequate equipment and quarters, make an accurate test almost impossible. And, in these particular cases, the services of an expert inspector will save much for the patrons.

Mr. Smith also carries a set of standard gram test weights, which enables him to make any necessary adjustment on the small balances, or to condemn them or the gram weights if they are found unfit for use. A butterfat sample of 9 grams is used in making the Babcock test, and, when it is considered that the return for 100 pounds or more is based on that 9 gram sample, the necessity for accuracy will readily be seen. Three 9 gram weights have been found to date which were short 420 miligrams, 100 mg. and 230 mg., respectively. The seriousness of these inaccurate weights may best be seen in the following quotation from Mr. Smith's report to the department:

"The buyers and testers seem well meaning and honest, but I find it the exception where any tester actually has acquainted himself with the detail of the Babcock test. The importance of correct balances can readily be appreciated when the butterfat content of large shipments of cream are estimated from the 9-gram test sample. A test weight which is 400 milligrams light will make a shortage of about 2 pounds of butterfat per 100 pounds of cream which averages 40 per cent butterfat, and, as the per cent of butterfat increases, the shortage is still larger."—Idaho Markets Bulletin.



14-28 H. P. Avery Tractor pulling Avery "Self-Adjusting" Tractor Disc Harrow. Five other sizes, 8-16 to 40-80 H. P. *All* with same design.

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Fall time is indeed *tractor* time—the time when the advantages of power farming are many—the time when an Avery will mean most to you in getting your work done in the right way. With an Avery *now*, you can get your fall plowing, discing, harrowing, seeding all finished double quick—also have your own power for threshing, silo filling, shelling corn, grinding feed, road work and other power jobs.

You may have said, "Some day I will have an Avery." Why wait till "some day" when having an Avery *right now* would mean so much to you in speeding up your work, getting it done in the right way, and insuring a big next year's crop?

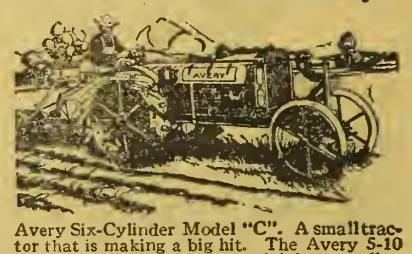
A Size for Any Farm

You can get an Avery in just the right size to fit your needs best. Also "Power-Lift" Moldboard or Disc Plows to fit any size Avery Tractor and "Self-Adjusting" Tractor Disc Harrows and "Power-Lift" Tractor Grain Drills. Also Motor Cultivators and Roller-Bearing Threshers and Silo Fillers.

When you get an Avery you put speed and certainty into your farm work. Six sizes of Avery Tractors have the **"Draft-Horse" Motor** and **"Direct-Drive" Transmission** and many other exclusive features.

Write for Catalog

Get your Avery now when you need its service most in getting a good crop started for next year. See your local Avery dealer or write us for catalog showing complete Avery line of Tractors, Tractor-Drawn or Tractor-Driven machinery.



Avery Six-Cylinder Model "C". A small tractor that is making a big hit. The Avery 5-10 H. P. is similar to this model but smaller.

Avery-ize your farm—"A Good Machine and a Square Deal."

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If you have used U. S. Products you KNOW that it "CAN'T BE BEAT" anywhere.

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TURN EASIEST
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The De Laval Separator Co.
New York Chicago San Francisco

Control Abortion

If your cows are dropping dead or immature calves, don't sacrifice them. Use our U. S. Abortion tablets. They will stop it.

THE U. S. LIVE STOCK REMEDY CO.
STOCK YARDS, DENVER.

CORN HARVESTER One man, one horse, one row. Self Gathering. Equal to a Corn Binder. Sold direct to Farmers for 22 yrs. Only $23 with fodder binder. Free Catalog showing pictures. PROCESS CORN HARVESTER CO., Salina, Kans.

Dairying With Goats.

Many of us have heard about the value of goats' milk in the children's diet and in the diet of invalids, but few have stopped to consider the practicability of goat dairying in the United States. Most folks who have never tasted it think that the goat's milk has a peculiar flavor. This is a wrong impression, as the flavor is very pleasing to the taste. It is a little sweeter and richer than cow's milk.

The writer had the opportunity recently of visiting the Geo. T. Cramton goat dairy in Denver, and to get an idea of what goat dairying really was and the advantages it has, in certain respects, over cow dairying.

Mr. Cramton has an ordinary two or three lot "farm" as is found in the outskirts of the city. He was working at a trade and bought a goat for milk supply for the family. He became interested in them and saw their possibilities and increased his herd until now he devotes his entire time to it.

Cramton Sanie, whose record is eight to nine quarts of milk a day.

He has animals of the Saanen breed from the valley by the same name in Switzerland. This breed is white in color and averages considerably larger than any of the other milk goat breeds. They eat the same feeds as a dairy cow and the same principle of feeding applies. The animals in this case are fed alfalfa hay and grain. Eight goats consume about the same amount as a 1,000-pound dairy cow.

In grain, Mr. Cramton feeds about 1 pound for each 4 pounds of milk produced. Barley and bran makes up the grain mixture.

The goat is a rather timid animal and does not graze on pasture without a herder. They will not stroll far away from their sheds when alone. They soon establish confidence in their herder and will be content if he is with them and will graze over more territory. In conformation the same general points are considered as in the case of the dairy cow. In production, we are surprised to learn the quantity of milk that a goat will produce. Mr. Cramton has ten does in milk and they bring him a return of $300 per month. He has all told about thirty-five head on hand at present. He figures that a goat that does not produce three quarts of milk a day is not worth keeping. He has one doe that gives 8 to 9 quarts a day, and another that gives 6 quarts. These goats are exceptional. He recently refused $1,000 for the heavier producer. She is known as Cramton's Saanie No. 6226.

Milk goats are registered in the Milk Goat Record association. Besides being of pure breeding a goat must produce two quarts of milk a day and to be admitted to the advanced registry must produce five quarts. Their lactation period is continuous and it is difficult to dry them up. They usually milk ten to eleven months and are then forced to go dry for a few weeks. The average offspring is 2½ per year. Saanie, the doe mentioned above, brought four kids this year. Good milking goats are in demand at $500 each.

The market for the milk is largely specialized. On account of its alkaline reaction it is especially suitable for babies and persons with weak stomachs. It is said that our army physicians returning from Europe are creating a demand for the milk here as they saw its value while they were working in those countries. No goat has ever been found affected with tuberculosis. They are believed to be immune from this disease. For these reasons the milk is bringing 50 cents a quart in Denver.

On the Cramton dairy the goats are milked twice a day. The milk is aerated and cooled immediately after being drawn. It is bottled and delivered to the children's hospitals or to private families.

There is absolutely no odor arising from this herd as one would expect. They are surprisingly clean in their habits. The practical thing about them is that it takes so little to feed them. This enables those who have small children to keep one or two goats even on a city lot. It is, of course, not practical for every farmer to go into the milk goat business, as there are comparatively few who can afford to pay the price for the breeding stock or for the milk. At any rate, it is interesting to know about them, as they will no doubt some time figure prominently in the dairy industry in the United States. —H. A. L.

Utah Farmers Build Silos.

As this article goes to press, the first silo in Moroni is just being completed. It is on the farm of Alfred Draper. Mr. Draper is one of these progressive farmers, and he is looking with grave concern to the future generations that will live on the farm he now occupies. For years he has gathered up manure from all over town wherever he could secure it, and applied it to his farm. He says his farm is getting better every year. Now the men won't let him have any more manure, so he is going to have more made on his own place. And so with the new silo he will be able to feed more stock and get more manure to apply to his land, so he can get more crops to feed more stock. So the thing keeps going in a circle. Mr. Draper is interested in milk stock. He says there is money in milking cows, and we believe him, too. If he likes this silo he will build another next year and make silage take the place of pasture, as he hasn't a pasture. This is a very practical thought and is being practiced everywhere as land values raise, for from four to six times as much food value can be taken from a given acreage in the form of corn silage as can be gotten by pasturing.

Other progressive men at Moroni who have silos under construction or will have within a few weeks, are: Ephraim Nelson, Ruben Ames, Daniel Anderson, Dan Olsen and Dr. W. P. Winters. J. L. Winters of Ft. Green is also building a silo. All of these silos are of the cement stave type.—Sanpete County (Utah) Farm Bureau News.

Mesa County Breeders Form An Organization.

Recently the livestock men of Mesa county met at Grand Junction and formed the Mesa County Purebred Breeders' Association, the object of which is: "To promote the welfare of the livestock men in Mesa county and to encourage the breeding of more purebred stock. The organization is composed of a very enthusiastic group of breeders and they have already succeeded in creating widespread interest among breeders of the county and, if their present plans are carried out it will result in a big boom for purebred stock of all kinds in the near future.

They are co-operating with the local fair association with the expectation of making the Intermountain Fair and Stock Show, September 28 to October 1, the biggest and best it has ever been, making both a larger premium list and a larger amount on each premium. At a recent meeting of the executive committee of the association preliminary plans were made for the holding of a combined stock and poultry show at Grand Junction in the early part of January and just previous to the Denver show. A number of breeders from outside Mesa county have already expressed a desire to exhibit if the show can be held at that time. The association will also put on an entertainment in the near future for the benefit of members and other interested livestock men, although they are not yet ready to announce the nature of the event.

The officers of the association are as follows: T. A. Butcher, Clifton, president; H. L. Rooks, Grand Junction, vice president; O. G. Clymer, Grand Junction, secretary-treasurer; County Agent L. P. McCann, assistant secretary. In addition to these the executive committee is composed of T. G. Twyman, H. E. Davidson, J. F. Schults, C. S. Saxton, all of Grand Junction, and W. H. Flint of Fruita.

For Caked Udders.

Following is a recipe for caked udders:

8 oz. of vaseline.

4 ox. of extract of poke root.

Mix together and apply as a salve twice daily. Bathe in hot water before letting calf suck. This is a tried recipe and surely fine.—Mrs. E. H. Miller in Holstein Friesian Register.

Ask Western Farm Life Service Bureau. Information free on all phases of farming.

Milking Shorthorn Records.

A report from Roy A. Cook of Independence, Ia., gives a list of the records made in April by the Milking Shorthorn cows and heifers of the country that are under the jurisdiction of the Milking Shorthorn association. Countess of Heggle 3rd, is leader of the mature cow class, giving 76 lbs. of milk her best day. Leader of the 4-year-olds is Rain Drop, owned by the Bonvue Farms of Golden, Colo. She made 1,228 lbs. of milk and 57 lbs. of butterfat during the month. Another cow, Lady Premier, from the same farm, made 1,048 lbs. of butterfat. Lucky Marian, owned by Joe M. Goetsfried of Littleton, Colo., produced 1,618 lbs. of milk during the month. Ury of Pine Valley, Colorado Springs, produced 1,137 lbs. of milk and 47 lbs. of butterfat, in her seventh month of lactation. Buena Vista Lass, owned by J. B. Benedict of Littleton, Colo., produced 1,041 lbs. of milk and 45 lbs. of butterfat. In the 2-year-old class Sally Wood 2nd, owned by Bonvue Farms, produced 697 lbs. of milk and 41 lbs. of butterfat. From the yearly record standpoint Snow Bird, a cow owned by the Pine Valley Dairy and Farms Company at Colorado Springs, produced 11,202 lbs. of milk and 404 lbs. of butterfat. Milking Shorthorn cows in Colorado are certainly giving a good account of themselves in the way they are producing. The same may be said of this breed being developed in other states.—H. A. L.

Lohry & Wailes Sell Herd.

One of the largest deals that has taken place in the history of the dairy business of this state was transacted on Saturday of last week when the Lohry & Wailes dairy herd consisting of 40 head purebred Holsteins, all registered, was purchased by Crowley & Letford and Whowell & Polley of Johnstown for the substantial figure of $14,000, being on an average of $350 per head for the herd. On account of being unable to obtain and hold competent help, Lohry & Wailes were nearly worked to death in an effort to properly care for their big herd, and rather than neglect them and thus reduce their productive ability, the owners decided to dispose of the major portion of their herd.

The herd as it was sold made up one of the most productive and highly bred herds in the state. This was clearly shown by records kept by the state agricultural college at Fort Collins, which showed that the twenty head milked averaged for the past four months over 40 pounds of butterfat. The average production for the herd for the year of 1919 was 466 pounds of butterfat.

We are glad to note that this excellent herd which is the result of many years of tireless effort in building up of quality, is to remain in the Johnstown district and will continue in the Johnstown Cow Testing Association. Half of the herd went to Crowley & Letford and will be taken to the Letford place farmed by S. P. Crowley, south of Milliken, the other half will be added to the already large herd owned by J. W. Whowell & Son, of which W. H. Polley has charge.—Johnstown Breeze.

Kafir Forage and Silage.

What is the best way to feed kafir to horses?—H. B., Adams county, Colo.

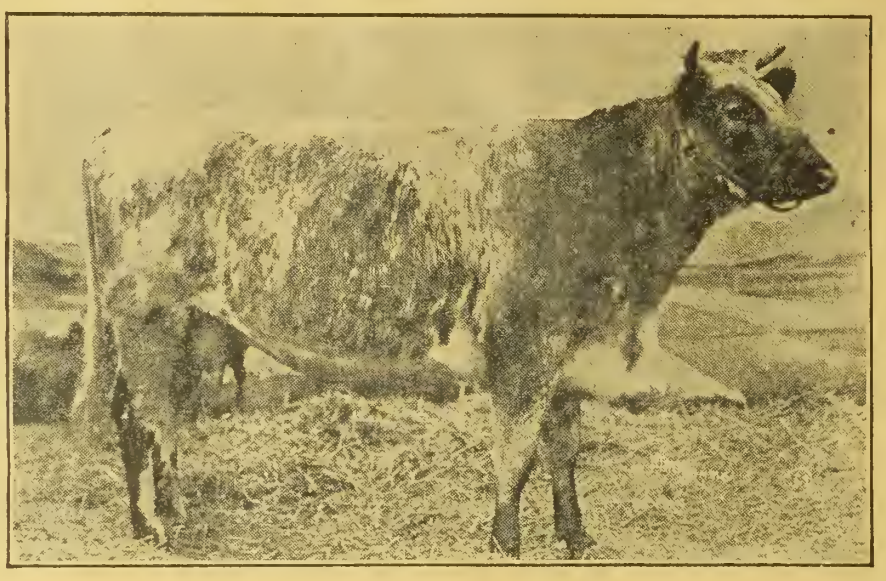
The best way to feed kafir to horses is to let it get ripe and then shock it up in bundles and feed the whole thing, stalks, heads and all. If you want to cut it for hay, when it is still green, it will be just about the same as sorghum cane and it can be fed that way without any risk of poison. The only danger from poison in kafir or any of the sorghum plants is when you turn the stock into the field to pasture this crop. If the crop has been stunted or burned by dry weather, or after cutting in the fall, if the stubble or second growth has been frosted, prussic acid develops and it will kill the stock if you turn them in to pasture.

In feeding kafir in the bundle you should feed some alfalfa or bran with it. Alfalfa and bran are rich in protein, and the kafir alone does not have enough protein. With this combination you can fatten stock or keep cows in good milk flow. If you have milk cows there is nothing better than silage for winter feeding. It takes the place of grass. You need some alfalfa or other protein feed with it to give good results. Corn or kafir both make good silage. Horses like silage as well as cows, but you have to be very careful that your silage is first class for horses, because they can't stand to eat anything that is moldy or spoiled. If you are feeding silage to work horses, they should have some grain with it, because silage alone does not give them enough nourishment.

Eradicating Morning Glory.

Can you tell me how to kill the wild morning glory? I have only a small patch at present, about 10 yards square, but have not been able to kill them.—G. W. O., Dolores county, Colo.

This pest is also known as bindweed. It starts from underground root stocks. It is difficult to eradicate and persistent effort is necessary in order to get rid of it. If it is just getting started you will not have very much trouble if you will keep cutting off all top growth a little beneath the surface of the ground. In this way you will finally succeed in starving the roots so that they will send up no more shoots. If the infested area has had this growth on for some time, it will be best not to attempt to grow crops on it, but simply keep cutting down the morning glory as fast as the growth appears above ground. In some cases this will eradicate the weed in one season, but sometimes it will require two years of this treatment. If the plants are growing in a cultivated field the crop should receive constant and thorough cultivation—say every seven to fourteen days. There is no easy road to success in handling the bindweed. Chemicals have been tried, but they do not thoroughly eradicate the weed.



ROSE CLAYWOOD No. 630862.

She was dropped in March, 1917, and has produced three heifer calves. The third calf was dropped this month. All three calves are in the Benedict herd at Wyldemere farm, Littleton, Colo. Her record was 40 pounds per day with second calf. Although bred at a very early age and constantly milked, this cow not yet 4 years old weighs over 1,600 pounds. She is an example of Shorthorn vigor and robust constitution. This cow was purchased in August, 1917, for $250. In less than three years she has produced over $1,000 worth of calves, a quantity of milk far in excess of her keep and original cost, and if she were sold for beef today she would bring a return in cash of more than half of the original investment. Her owners have been offered $1,800 for her, and her first heifer calf, dropped December 1, 1918, has been bred, so that next spring she will bring further income to the ranch in the form of her produce.

A Visit to Wyldemere Farm.

Littleton has all of a sudden taken a new lease on life due to some enterprising men who have discovered its potentialities as a purebred livestock center. The Commercial Club organized for the purpose of doing big things has promoted a little journey to the farms in that locality where the breeding of purebred stock is carried on.

Through this enterprising organization the limelight of facts was focused on the cattle breeding ranches and it was the good fortune of your field man to reap some of the benefits. He visited many farms and among them was Wyldemere farm, the vision of a man who has the creative instinct highly developed and is applying his energies to the upbuilding of an ideal in Milking Shorthorn cattle. Mr. Benedict is an enthusiast on anything that has a future in the livestock game. After many years as a hog man with Milking Shorthorns as a side line, he has gone plumb over to the cattle branch of the work. Formerly I knew his place by the hogs that grazed the alfalfa fields in numbers. Now one sees few, but their place is taken by the big red, white and roan cows that bring home the bacon just the same by the milk can route.

Mr. Benedict and I gossip often together and when I get him going on his favorite topic I only have to listen to be entertained on these hot afternoons.

"Yes," says he, "I sold out my hogs to go into the army, and when I came back to the farm and pulled things back to normal I saw I was raising some fine cows. We have one cow in her eleventh year giving over 1,500 pounds of milk in thirty days, and one day she went over 62 pounds. This cow was Lucky Marion and I was offered $500 for a bull calf from her. Senorita, another Colorado bred cow, is going at the rate of 1,200 pounds a month, and both are turning out the real stuff in calves. We have five test cows on the way to big records, but listen, our calves are pippins this year. I want you to see open yearlings with udders on them like cows with calves at their side, and a crackerjack of a herd bull we have too. He weighs over 1,600 pounds in his 2-year form. I'm not boasting. It's luck I believe, to get them all coming your way. Glad you dropped in—here is a picture of the grand champion cow Claywood Rose that won us lots of ribbons at the shows and gave us three heifers."—Lockwood, Fieldman.

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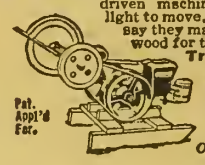

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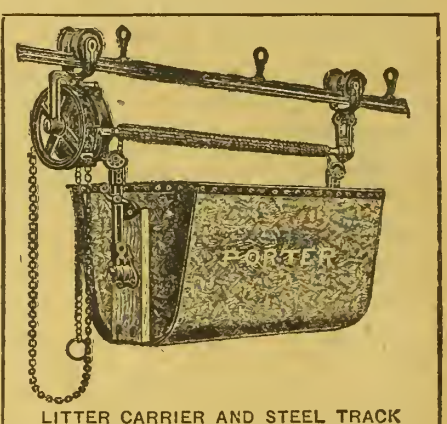

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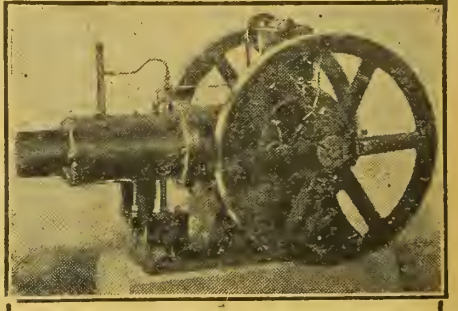

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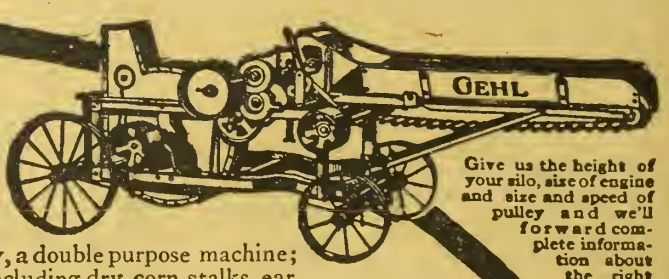

Cuts Ensilage--Grinds Alfalfa

Here is an example of farm economy, a double purpose machine; grinds any form of dry roughage including dry corn stalks, ear and all, alfalfa hay, sweet clover, velvet beans, soy beans, etc. All farm animals do much better on ground than on ordinary roughage, besides this they are able to clean it up without waste. Grinding releases all of the feed value contained in the plant and on account of the elimination of waste means

An Actual Saving in Feed of 20 to 50 Per Cent

The Gehl is a double purpose machine; its many years of use have demonstrated its superiority as a silo filler, now it leads again as a feed grinder. Its all steel frame, malleable knife head, separate control of cylinder and blower speeds and powerful self feeder, and positive safety device make it durable, safe and convenient to operate and extremely light running—any 8-16 tractor handles a Gehl 17.

Give us the height of your silo, size of engine and size and speed of pulley and we'll forward complete information about the right size of Gehl Cutter

Write for New Catalog and Sample of Meal

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Our new catalog gives complete information about the machine and some valuable ideas about dry feed handling.

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Western Office: 1734 15th St., Dept. 315
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Clark's Travel Letter.

Mr. Thomas Jefferson Putnam,
Salem, Colo.:

Dear Tom—It seems a long time since I wrote to you and I have been around quite a bit since. I went to Hugo several weeks ago and assisted in forming a county co-operative livestock shipping association. Last year 632 carloads of livestock were shipped from Lincoln county to Denver. If we can cause a saving of $1 a hundred to the farmers in the sale of this stock, it would mean a saving to the farmers of Lincoln county of $126,400. If we can get one-fourth of the stock the saving would be $31,600. I think that half of the stock will be shipped through the association and that the saving will be about $60,000 a year. That is not a large amount, but if the farmers will use this money for labor saving devices in the home there will be many a happy farmer's wife in Lincoln county next year.

While at Hugo I met O. S. Rayner, who was formerly connected with the college. He is working for a bank at Hugo and he told me all about his work. I certainly got enthusiastic when he told me and showed me how his bank is helping the farmers. It is a great piece of work. One poor fellow down there was about to give up hope and turn his farm over to the bank, but the bank said "No" and Rayner was sent out. The work on that farm was completely reorganized, the labor cut down and its acreage increased many times. I visited this farm with Mr. Rayner and feel sure that its owner will succeed if he continues as he is doing now. Mr. Rayner is helping other farmers along the same line and I will watch the outcome with a great deal of interest. I rather think this is the beginning of a new movement in Colorado and I expect to see many other banks do likewise before long.

After leaving Hugo I went to Colorado Springs and accompanied by Miss Snow, the home demonstration agent, held a meeting at Lytle, and another near Tructon. We met at the home of W. S. Burns at Lytle and R. F. Wyatt had his herd of Holstein cows there for demonstration purposes and we discussed the pro and con of good feeding and good breeding. Of course, I talked silos; I couldn't do otherwise under the circumstances. Our stock must be fed and we need not expect much from it until it is fed. Haven't you noticed lately how the farmers' cattle, gaunt and hungry, are roaming along bare roadsides, fighting flies and atoning for the sins of their wicked owners? We made a careful study of every animal in Mr. Wyatt's herd and I think by this time some of them have gone to join the angels. Mrs. Wyatt stood by her husband and as I talked she nudged him and kept saying, "I told you so." A good wife, Tom, is a great thing.

Mr. Burns has a pit silo and plans on putting in two more this year. I am going back to Lytle as soon as possible and we are going to have a real school; one that will make the heart throb with joy.

Mr. H. W. Hailey of Colorado Springs went with us to our second meeting near Tructon. He is a newspaper man but a farmer through and through and when you hurt the farmer you hurt him. I never saw conditions anywhere better than they are in El Paso county. There has been lots of rain, lagoons were everywhere, grazing was excellent and the crops could not be better. I have worked a good deal in El Paso county with former County Agent Lauck and I was pleasurably surprised to see how the farmers have prospered during the last four years. I think Mr. Lauck should be given credit for a great piece of work and everywhere we went he was missed and his absence regretted. As I traveled through El Paso county I could not help thinking, will the man appointed to succeed Lauck be able to carry forward the work as Mr. Lauck did? I most sincerely hope so. Who ever he is, he will find a big work to do.

We took dinner with Mr. and Mrs. Detrich, and it was a fine dinner. Such dinners cannot be had in the cities. You have to go to the country for them. Corn is the main crop and it yields from 30 to 40 bushels to the acre and El Paso county had the best corn I saw this year up to that time. Gardens were good everywhere and a great variety of stuff was being raised. The fine groves that are just starting, will add enchantment to that country soon and make it a thing of beauty and a joy forever.

Miss Snow took me to Monument one morning to see a pig. It was owned by a club member and it was doing poorly. A few questions as to its condition when received from the breeder revealed the fact that it had been dipped in kerosene oil for lice, but it is a fine pig and will win laurels if given a chance. I had a talk with the pig club members at Monument and they are determined to win at the fairs this fall. They had started making self feeders and other contrivances before I left them. You must get acquainted with Miss Snow, Tom. She is not very large, but she is certainly a goer and has the commendable quality of getting into the game with the farmers. If I were a bachelor farmer I would certainly be pretty when Miss Snow came around and I would require all kinds of home demonstrations, too.

The dry land farms most places where I have been are producing good crops and their owners are feeling very happy over the prospects, but they should look and play ahead a little for dry years will come again. Proper handling of the soil and good rotations should be practiced. I believe that if the soil is in good condition and well handled and plenty of water in the subsoil, good crops can be raised any year. There are crops in Colorado that have not had a bit of irrigation or rain, that are in good condition and if hail does not hurt them, will give big yields. Four years ago Cheese Brothers at Eastonville raised a big crop of wheat that got no moisture except what was in the soil, after the winter snow melted.

A few days after my trip to El Paso county I attended a Shorthorn tour in Elbert county with County Agent Aicher. You can't realize, Tom, what fine cattle are down there until you see them. We visited ten herds and every one seemed better than the last one. George Hixson of Simla and his whole family were there and you should have seen us eat chicken. Johnny Lennox of Colorado Springs, Fulton of the Stockman, and Lindgren of Western Farm Life ate dinner with the Hixson's. Lennox is a ravenous eater and tried to get the rest of us not to notice the large amount he was eating by telling stories.

I think Tom, I saw more good cattle that day than I ever saw on a similar trip. The pastures, the alfalfa, the gardens and the corn gave great promise. Mr. Aicher says that the annual rainfall is 16 to 22 inches, and that accounts for the splendid conditions we saw. It is the most promising dry land country I ever saw and I was surprised at the large amount of alfalfa growing along the creek bottom.

I returned yesterday from Morgan county. I was there helping to start the co-operative livestock shipping association and we sent out the first car yesterday. Earl J. Yates of York, Neb., is manager and a husky lad. I followed him last week, through fields over fences, along ditch banks, and well I know what he is, but he saw the farmer and got the stock. The managership of such an association is a job for a young man. The manager must be a hustler and Mr. Yates fills the bill. He is a farm raised boy, knows livestock and is a graduate of the University of Nebraska. Being a stranger in Morgan county, he has neither friend nor foe and the farmers have promised to support him. I think it is best to get a manager who is unacquainted with the farmers for this work.

The association had seventy members before it commenced work and the Farmers' Elevator there that had been buying livestock have discontinued buying and is turning all the livestock business to the association. The elevator will handle the farmers' grain and the shipping association will market the livestock. There is no overlapping, but greater efficiency. Yours truly,

R. W. CLARK.

I got the World War book and it is a good one. I cannot get along without your magazine. I am always anxious to see it come as it always brings some good things and so much information for us farmers.—N. B. Hern, Rincona New Mexico.

If in need of advice, ask Western Farm Life Service Bureau.

ESSEX MOTORS DETROIT U.S.A.

See How Essex Proved Economy

A Nation-Wide Demonstration
No Motorist Can Overlook

Connecticut — With 12 cars over Mohawk Trail and Hoosick Mountains and 12 over a coast route—many owner driven—216 miles average distance per car, 18.7 miles per gallon were shown. One car with 35,000 miles service averaged 21.2 miles per gallon.

Nebraska — A Hastings, Nebr., woman drove her Essex from Lincoln to Hastings, 109 miles, averaging 28 miles per gallon.

California — Four women drove from Los Angeles to San Francisco and return averaging 22.3 miles per gallon. A San Francisco Essex made the round trip, 846 miles, in 33 hours with 23 miles per gallon. Hood and radiator sealed.

San Antonio, Tex. — In a 166 mile run to Austin and return, Essex averaged 25.5 miles per gallon.

Sacramento, Calif. — Defeated 19 entries and took Tallac Cup for highest gasoline, oil and water mileage in Sacramento Dealers reliability run.

Baltimore, Md. — Essex sedan, on original tires with 15,000 miles service, traveled 221 miles over Maryland hills, averaging 23 miles per gallon.

Florida —On a measured gallon an Essex covered 23 miles and without change or adjustment of any kind showed speed of 68 miles per hour.

49 Cars Average 18.9 Miles Per Gallon — Records cover every kind of test at a speed of from 5 to 72 miles per hour.

Los Angeles, Calif.—To San Francisco over 828 mile route of steep grades and frequently far from water supplies Essex which had previously gone 28,000 miles and under U. S. Marine observation made trip sealed in high gear with sealed hood and sealed radiator. Average 22.8 miles per gal. gasoline.

Also Broke World's Dirt Track Record --- 1,261 Miles

Made at Dallas, Texas, by a Car That Had Already Gone 12,000 Miles

From the mere standpoint of gasoline mileage, Essex in its nation-wide tests showed a performance worthy of cars which possess that advantage as their principal quality.

Records were kept on 49 cars. They averaged 18.9 miles to the gallon.

But bear in mind this was not done by taking advantage of every device possible to increase gasoline mileage. Under conditions of that sort, Essex showed as high as 37 miles to the gallon. However, men don't drive that way. How obviously unfair it would be, therefore, to offer such carefully economized fuel mileage tests as typical of all Essex cars.

In the Essex tests, conditions and performances adverse to gasoline economy obtained.

These cars were being driven at speeds from 5 to 72 miles per hour. They were reeling off thousands of miles over all sorts of roads in inter-city runs that set new time marks. They were making new hill-climb, acceleration and endurance records.

Many were owner cars—owner driven. Women piloted some.

Some of the Essex cars used had already traveled upwards of 30,000 to 35,000 miles.

So you must not view Essex economy merely by its gasoline consumption. You must also consider its endurance and reliability.

If there were nothing more striking about the Essex than its gasoline mileage, it would be a worthy subject of our advertising. But important and impressive as that fact is, does not its other qualities take first rank in your consideration?

Essex Motors, Detroit, U. S. A.

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ESSEX MOTOR CARS — WATCH the ESSEX — ESSEX

Motor Trucks Save Time.

"What do you find to be the greatest advantage of owning a motor truck?"

Of 753 farm owners of motor trucks who were asked this question by the United States Department of Agriculture, 91 per cent said "saving time."

About 25 per cent of these men had found better markets since buying their trucks, but 50 per cent of them had not cut down the number of their work stock by as much as a single head, while less than one man in ten had cut down his stock more than two head.

The investigation in question was made during the past winter and spring. Farmers in the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, and Indiana, who have motor trucks for use on their own farms, were asked to report to the department the types and sizes of their farms, the use they make of their trucks, the cost of operating them, the advantages and disadvantages of trucks for farm use, and other related information.

A study of the reports of 753 of these farmers has just been completed by the Office of Farm Management and Farm Economics. The farms which these men operate are of all sizes and types, and the motor trucks are of all sizes, from one-half to five tons. The rated capacity of very few of the trucks is greater than two tons, however, and nearly half of them are of the one ton size.

Among the important facts revealed by the investigation may be mentioned the following:

Only 18 per cent of these farms are less than five miles from market and nearly one-fourth of them are twenty miles or more from market.

Ninety-five per cent of the farmers believe that their trucks will turn out to be profitable investments.

One-ton trucks are preferred by more men than prefer any other size. About half of the owners of one-half and three-fourths ton trucks prefer sizes larger than they now own.

In the opinions of these men the principal disadvantage of a motor truck is "poor roads."

As compared with horses and wagons, the trucks save from one-half to two-thirds of the time required for hauling materials to and from these farms.

These farmers have return loads for their trucks about one-fourth of the time.

A majority of them still use their horses for some road hauling.

On the majority of the farms all the hauling other than road hauling is done with horses and wagons.

About one-fourth of the men do some custom hauling with their trucks. The average amount received per year by those who do such work is $174.

On the average there are about eight weeks during the year when the roads are in such condition on account of mud, snow, etc., that these trucks cannot be used. The roads on which three-fourths of them usually travel are all or part dirt.

About one-fourth of the farmers have changed their markets for at least a part of their produce since purchasing trucks. For those who have changed markets, the average distance to the old market is 7 miles, and the average distance to the new market is 20 miles.

The owners estimate that, on the average, their trucks travel 3,820 miles per year and are used on 173 days per year.

The average life of the trucks is between 6½ and 7 years, and in most cases, depreciation is the largest single item of expense in connection with their operation.

Most of the owners of one-half and three-fourths ton trucks prefer pneumatic tires, the owners of one-ton trucks are about evenly divided in their preference, and most of the owners of trucks larger than one ton prefer solid tires.

Over two-thirds of the trucks had not been out of commission when needed for a single day during the year covered by the report, and nearly the same proportion of the owners stated that they had not lost any appreciable time on account of motor and tire trouble, breakage, etc., when using their trucks. However, about one truck in thirty had been out of commission ten days or more.

The average cost of operation of the half-ton trucks was about 8 cents per mile; of the ¾ ton trucks about 13 cents; of the 1-ton about 12 cents; of the 1¼ and 1½ ton about 19 cents, and of the 2 ton about 20 cents.

The average cost of hauling crops, including the value of the driver's time at 50 cents an hour, was about 50 cents per ton-mile with the ½ ton trucks; 34 cents with the ¾ ton; 26 cents with the 1 ton; 24 cents with the 1¼ and 1½ ton, and 18 cents with the 2 ton trucks.

About four-fifths of the men state that their trucks decrease their expense for hired help. On the average they estimate that this decrease amounts to $324 per year.

Over half of the 205 truck owners whose farms contain more than 120 crop acres own tractors. The number of work stock kept on the farms where both trucks and tractors are owned is only slightly less than the number kept on farms of corresponding size where only trucks are owned.

Farmer Builds Septic Tank.

Recently, under the auspices of the County Farm Bureau, a septic tank was built on the John H. Hove farm near Genesec. At the demonstration, Prof. J. C. Woolcy, head of the Agricultural Engineering Department of the university, explained to the group of farmers the various steps in the construction of the tank, and Prof. W. M. Gibbs, head of the Bacteriological Department, told of the bacteriological action that takes place.

Materials used in the construction of the tank are as follows:

3 yards sand @ $4	$12.00
21 sacks cement @ $1.05	22.05
Lumber for forms	6.00
Pipe for inlet and outlet of sewerage	10.00
	$50.05

The septic tank is a long step in advance of the ordinary cesspool. Any farmer of the state interested in building a septic tank should get in touch with the agricultural engineering department of the university and ask for plans and specifications. The request for this help can be best made through the farm bureau and county agent.—Idaho University News Letter.

Red Mites Invade Southern Idaho Wheat Fields.

(Continued from Page 7.)

pest will be a menace to wheat in future years. Knowing that it is distributed over hundreds of thousands of acres of the best wheat lands in Idaho; that, with weather conditions favorable to it, it is likely to do far more injury in future years and believing that injury from it can be prevented by rational farm practice, we make the following recommendations to the grain growers, especially on dry land:

(1) Plow stubble land this year as soon as possible after wheat is removed. Practice summer fallow or plant to cultivated crops for one summer before reseeding to wheat.

(2) If you feel you must reseed to wheat this fall, plow grain land as soon as possible after removal of crop this year and keep ground thoroughly cultivated as long as possible before seeding. This practice should insure the death of many mites by taking away green food on which they may exist.

(3) Burn or clean up weeds and grasses along fence rows and waste patches of ground. The mite has been found on several species of native grasses this year and it is not improbable that it will harbor over on them until another season.

Prospects of high prices for wheat have tempted the dry farmer to plant large acreages and trust to chance that a kind Providence would furnish the necessary moisture to mature crops on land which has already been cropped too continuously and on which no precaution has been taken to conserve moisture. Summer fallowing and spring cultivation are noteworthy by their absence in grain sections which are worst injured by mites. Far less injury would have occurred had there been enough moisture stored in the soil to replenish that taken by the mites. A strict adherence to proven dry-farm practice offers the best solution to the problem of how to avoid a recurrence of unnecessary losses in future years.

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are helping their husbands to prosper—are glad they encourged them to go where they could make a home of their own—save paying rent and reduce cost of living—where they could reach prosperity and independence by **buying on easy terms**

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—land similar to that which through many years has **yielded from 20 to 45 bushels of wheat to the acre.** Hundreds of farmers in Western Canada have raised crops in a single season worth more than the whole cost of their land. With such crops come prosperity, independence, good homes, and all the comforts and conveniences which make for happy living.

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are sources of income second only to grain growing and stock raising. Good climate, good neighbors, churches, schools, rural telephone, etc., give you the opportunities of a new land with the conveniences of old settled districts.

For illustrated literature, maps, description of farm opportunities in Manitoba, Saskatchewan, and Alberta, reduced railway rates, etc., write Department of Immigration, Ottawa, Can., or

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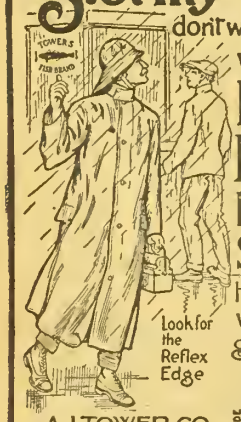

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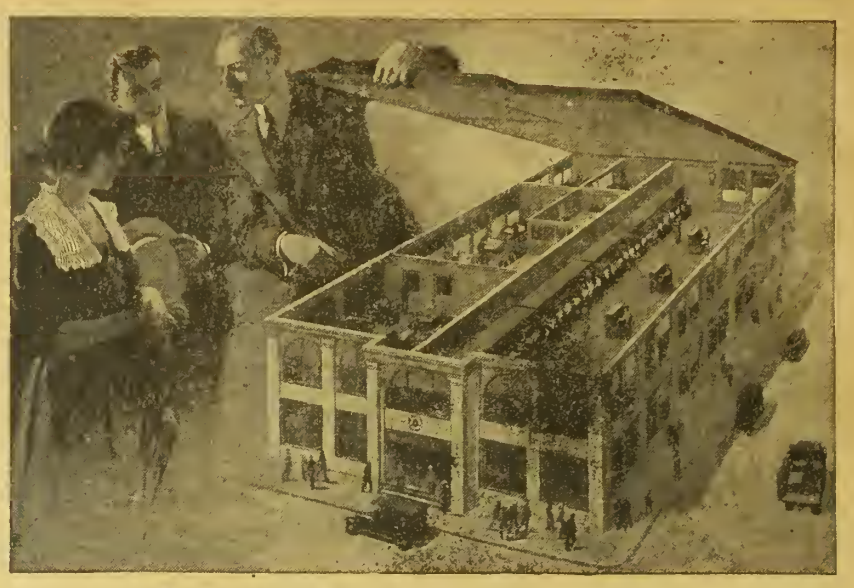

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We consider this an essential part of our stewardship in the operation of this public utility. It is due not only the 130,000 shareholders, but it is due the whole citizenship of the country.

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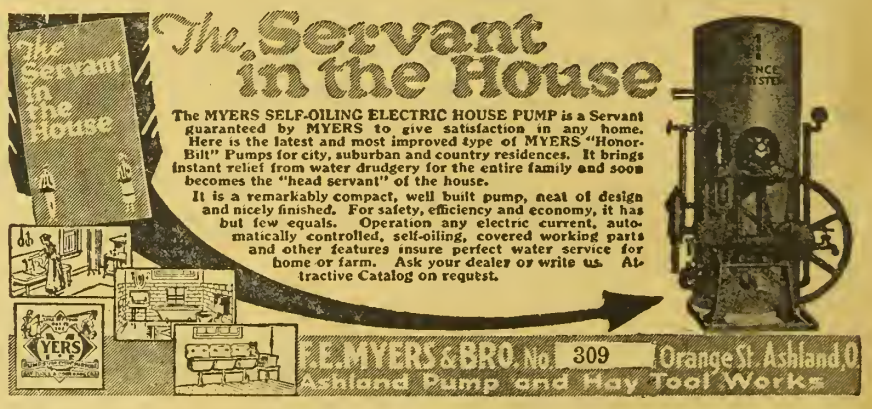

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A Mexican Bullfight.

WHITE EAGLE.

Not long ago I had my first sight of the national Mexican sport, a bullfight, at Tia Juna, Mexico. There was a large crowd on hand, about all of whom were tourists with the exception of the native Mexican population. The grandstand, seating 2,000, was jammed to capacity at "Precios: Sombra (shady seat) $2.50" American money, and "sol" (seat in the sun) for $2. Jose R. Alvarez, a short, thickset Mexican with huge black mustachios, was the acting manager.

Bullfights in Mexico were abolished by decree of the late President Carranza, but later on he granted to the governors of the different states permission to allow or prohibit the fights, as they saw fit. American interests were back of the fight I saw, Americans owning the bullring, and the bulls were American cattle.

The fight was scheduled for 1 p. m. I went to the arena an hour or more early to take a look at the bulls and was both surprised a nd disappointed.

Instead of seeing wild, fierce, long-horned, bloodshot-eyed bulls, I saw a bunch of very ordinary barnyard cattle, sleepily chewing their cuds, and thin and slab-sided with the exception of one big fellow, the bull the matador afterward killed; and he turned out to be an old pet that didn't at all desire to fight.

The exhibition began at 1:30 and lasted a couple of hours. A Mexican band played throughout the show, which was opened by a grand entree of the matador, Francisco I. Paquiro and his helpers, dressed in the regulation bullfight uniforms which displayed much red and green silk, velvet, etc. The procession was led by a Mexican boy with a long red cape about his shoulders mounted on an ancient looking horse, whose prominent ribs and hip bones plainly advertised the need of fodder. The boy proceeded to make up for the lack of fat and feed by thumping the ribs of his mount with a good-sized club and succeeded fairly well as he kept ahead of the procession that followed on foot around the arena in fair style. The chief matador then made his bow, his assistants took their places, the gate was opened and the first bull chased in.

As the bull passed through the gate Mexicans standing by jabbed short, sharp steel darts to which red, white and blue paper streamers were attached, into his shoulders and neck so as to anger him.

After this entering burst of speed caused by the sticking of the darts into him, the chief concern of the bulls seemed to be to find an exit from the arena. The bull rushed at the red capes that were flourished and flaunted in front of him, but not once did it appear that the men behind them were the objects of attack.

A little bull named Ophelia gave some demonstration of ferocity and of activity in which a slim young Mexican dressed and acting like Charlie Chaplin, starred. Ophelia and "Chaplin" did stunts that caused some cheering and hand clapping and brought a few coins clinking into the arena, but when their part of the program was over "Chaplin" demonstrated that Ophelia was a pet and well trained by walking up to him in true Chaplin style, grabbing him by the head and dragging him out of the arena.

The big bull that was killed charged the flaunting red capes, but more in play, it seemed, than dangerous anger. When the time came to dispatch him the matador, with a single thrust, ran nearly two feet of a long sword into him just back of his left shoulder, but missed the heart, as the big old fellow remained erect, trotting about anxiously seeking an exit, the sword sticking in him and blood dripping from his nostrils.

The sword was finally jerked out and the matador, whose face at the beginning of the fight was a swarthy yellow, was now a greasy black, his eyes bloodshot and white teeth bared, approached with a stout, keen bladed dagger to finish the bull. He approached cautiously in front of the bull, alert, braced and ready to spring aside should the beast charge, but the bull merely lowered his head and standing like the ox he was, awaited the slaughter.

Three times did the matador stab at the bull's neck at the base of the skull and each time he missed the vital point; each time the knife flew out of his hand to the ground, the bull remaining with lowered head, little streams of blood trickling from the wounds.

Finally the matador made the right thrust and the animal crumpled down in his tracks like a wet rag, his miseries over.

Then the matador turned and bowed to the spectators, a torrent of Spanish flowing from his lips and I had seen my first bullfight—and last.

When the bull fell some of the spectators sprang into the arena and cut pieces from his tail and dipped the steel darts with the red, white and blue paper streamers into his hot blood to carry away as souvenirs. I was in a butcher shop in Tia Juana that day. The meat was very lean and stringy. No knife or saw did I see like in American shops, but the butcher, a Mexican woman, chopped the steaks off with an axe.

Big Men of American Agriculture Seen in Action.

(Continued from Page 6.)

were made by the members, each adding to the store of information of those attending and each offering suggestions for agricultural advancement. The chief point dwelt on was need for the establishment by the Federation of a Bureau of Economics, manned by the highest grade talent in America. There seemed to be no difference of opinion on the point that production and marketing must go hand in hand; that the time for stressing production to the exclusion of marketing had gone by and that an educational program was, in the larger sense, one that meant bettering farming methods; more production per acre and adequate remuneration for capital and labor investment on the farm. Dr. W. H. Walker of California expressed the thought aptly when he said that the foundation of the work must be solid, one foot standing for education and the other for economics.

The second day's session was devoted to a discussion of tax problems, with Mr. McKenzie, of the New York State Farm Bureau, and Prof. T. S. Adams of Yale University, leading. Mr. McKenzie has sat at the conference of industrial interests in Washington, where an effort was made to secure repeal of the excess profits tax. His view was that though imperfect and, in some cases, unjust, the excess profits tax should be retained. He cited the experience of Great Britain and France as examples of successfully levying the highest tribute on wealth to pay the world's huge war debt. He made the statement that this tax is not being passed on to the consumer and that it was working out exactly as intended, namely, making those who reaped big war profits, pay the major share of the cost. He declared that taxes should be levied with three things in mind:

1. They should be paid from income and profit and not from capital.

2. All the people should make some contribution to taxes, such as through a levy on luxuries, the tariff, etc., but not more than 25 per cent should come from these sources.

3. Taxes should be levied so as to tend to the diffusion of wealth and not toward its concentration.

On some essential points he was in agreement with Prof. Adams, but the latter does not defend the excess profits tax. Prof. Adams is the official adviser of the Treasury department on taxation problems. In line with the policy of the Federation to hear both sides of every problem he was invited to go into the subject quite fully. His able presentation of the fundamentals of taxation was heard with intense interest and a lively discussion followed, many questions being asked and answered. Rural credits was touched on only briefly for lack of time. Prof. Adams said there was an unquestionable need for better financing of the farmer for short time personal loans and that legislation was now pending which he hoped might meet the need. He was of the opinion that the European co-operative societies were quite successfully caring for the farmers and that some adaptation of these systems to agricultural needs in the United States would prove beneficial.

"Mother nature is not interested in money and she holds the senior partnership in the cattle breeding business —great herds of beef cattle have been builded on slender means and under obvious handicaps."—Breeders' Gazette.

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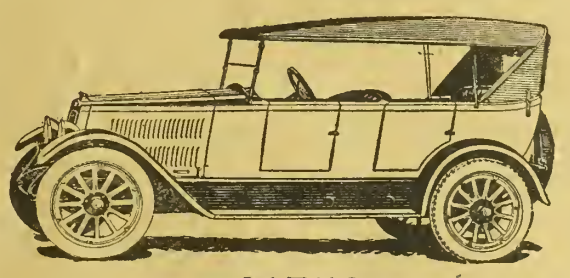

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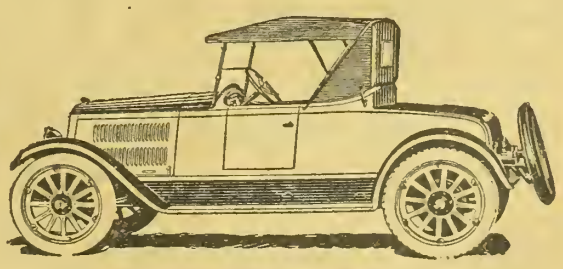

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Uncle Sam's Hired Men.

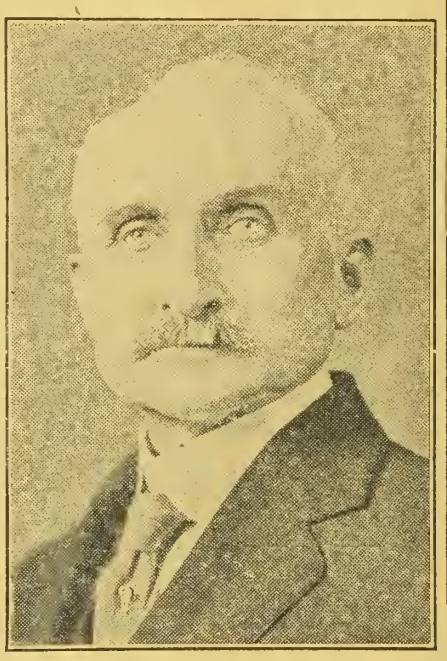
This is one of a series of articles published by Western Farm Life in co-operation with the United States Department of Agriculture to acquaint our readers with the personnel of the department and show them the type of men who are making possible the splendid service rendered the farmers of America. The present article deals with Dr. William A. Taylor, Chief of the Bureau of Plant Industry.—Editor.

The club itself, together with its high-sounding name — Pathological Seminar—has become but little more than a memory, except in the minds of the handful of men who in the early days of the United States Department of Agriculture met at one another's home in Washington to discuss various questions connected with their work. They were all young men, at the outset of their careers—a group destined to produce some of the foremost leaders in their respective lines of work.

Among the men who foregathered at these informal talks was a quiet, thoughtful, painstaking young fellow, fresh from the fruit country of Michigan. He brought to the discussions not only the theoretical knowledge gained from a course at the Michigan Agricultural College, but the actual practical experience in fruit growing obtained on a real fruit farm where he spent most of his youth. He was a good listener, and soon gained among his companions that confidence usually given to quiet men of his type. His comments, when he made them, were always well thought out and aptly put, a characteristic that has marked his utterances ever since.

This man was Dr. William A. Taylor, who was to become one of the department's most efficient administrative officers, Chief of the Bureau of Plant Industry, and a man recognized throughout the country as one of the highest authorities on the growing, storage, shipment and handling of fruits. He is known as a very thorough investigator, one that carefully weighs all essential factors before arriving at a decision.

While Dr. Taylor came to the department shortly after graduation from col-



Dr. William A. Taylor, Chief Bureau of Plant Industry, U. S. Department of Agriculture.

lege, he brought with him a great store of practical farming knowledge gained as a boy, which has stood him in good stead upon many occasions in making his bureau of actual, first-hand aid not only to the farmers of the country but to the people generally.

One very striking instance of this is revealed in the part played by the group of workers of which he had charge in coming to the aid of the orange shippers and the railways, who for a long time were at odds over the heavy deterioration of oranges during transit. The loss averaged about 20 per cent of the fruit shipped, due chiefly to blue-mold. The railways and the shippers appealed to the Department of Agriculture. It was found that many slight abrasions were made in the fruit in picking and handling it. At the suggestion of department specialists the sharp points on the instruments used in cutting the fruit from the trees were filed down; the oranges were cut close without stems, and workers who handled the fruit were provided with gloves. By these measures the loss was cut down from 20 to 2 per cent. At that time the orange crop was valued at about $30,000,000 a year.

Among the important accomplishments of the bureau under Dr. Taylor's direction, is its work to improve methods of handling, transportation and storage of fruits, vegetables and other agricultural products. It demonstrated the importance of precooling fruit before shipment and the necessity of shipping in ventilated cars. Its specialists worked out improvements in the construction of refrigerator cars to insure the necessary ventilation. This not only greatly reduced the cost of transportation, but also greatly lessened losses of fruit and vegetables in transit.

The bureau has done noble work in the breeding and distribution of superior varieties of cotton. These have been established in commercial cultivation in different parts of the cotton-producing areas to which they are specifically adapted. The most important varieties bred and distributed are the Lone Star, Trice, Acala, Columbia, Durango, Meade and Pima. The value of this work can be realized when it is known that the present annual production of these varieties is estimated at between $200,000,000 and $300,000,000.

The Lone Star cotton belongs to the Texas big-boll type, with Triumph and Rowden, but has superior fiber and is now grown largely in the chief producing regions of Texas and adjacent states, probably to the extent of at least 1,000,000 bales. On this basis the advantage to farmers in substituting Lone Star for competing varieties may be estimated from $10,000,000 to $20,000,000 a year.

The Pima cotton is the basis of the new Egyptian cotton industry of Arizona and California, in irrigated districts that grew no cotton only a few years ago. In the Salt River valley alone the Pima crop of last year, valued at $20,000,000, returned nearly twice the cost of all the reclamation works of the valley, including the Roosevelt dam.

Among the new varieties of grain introduced and developed in this country by the bureau is the famous durum wheat. This achievement met with rapid success, and durum wheat is now grown on a large scale. The 1918 crop was estimated at slightly less than $100,000,000. Not only this, but an entirely new industry for this country, the manufacture of macaroni, for which this wheat is particularly suitable, was established.

These are only a few examples of what Dr. Taylor and the highly efficient organization of which he is the administrative head is accomplishing for the producers, and consequently for the consumers of the country.

The password of the bureau is "science for service." The bureau stands ready at all times to place the knowledge and labors of its highly skilled specialists at the disposal of any individual or group of citizens who seek advice upon any subject connected with plant industry—and this covers a very wide field, indeed. It incluudes investigations of the causes, prevention and treatment of diseases of plants, including fruit, ornamental, shade and forest trees; the introduction of new varieties of plants; the improvement and utilization of grazing lands; use of irrigated lands; soil fertility; and the improvement and production of cereals. Many others could be mentioned, for the work touches plant life in all its relations to agriculture.

Under Dr. Taylor's direction, there are approximately 2,103 employes, 868

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of whom are located in Washington, D. C., and 1,235 engaged in the work of the bureau outside of that city.

Dr. Taylor was born at Chelsea, Mich., June 23, 1863. He was graduated from the Michigan Agricultural College in 1888 with the degree of B. S., receiving his doctor's degree from that institution in 1913. Before entering the government service he managed a fruit farm and nursery in Michigan. He entered the Department of Agriculture as an assistant pomologist in 1891, and served successively as assistant chief of the Division of Pomology, pomologist in charge of Field Investigations, and as assistant chief of the bureau until his appointment as chief in March, 1913.—W. J. Maddox.

Feeding Sunflower Silage.

In a previous issue a review was given of the Montana bulletin No. 131 on "Growing and Feeding Sunflowers," this considered chiefly the growing experiments and the tests of feeding reported in the bulletin. In the following there is a digest of the experiments made in feeding sunflower silage to dairy cattle. These experiments indicated that more mature plants make a silage with a higher nutritive value. However, the station is not yet prepared to say at what stage of maturity sunflowers should be cut, in order to meet all requirements of feeding and comply with the limitations of plant growth under Montana conditions. The comparisons given in the bulletin are made with immature corn, which is necessary, as practically all corn grown in the higher altitudes of that state has to be ensiled before it is matured. The bulletin is clear on the question of the advantage of sunflowers over corn for silage in the higher mountain valleys.

The tests made in feeding sunflower silage to dairy cattle established the fact that dairy cows would eat sunflower silage readily, that there was no diminution of milk flow and no apparent change in the odor and the flavor of milk from cows when fed on this forage.(Two lots of cows were fed, each lot containing seven cows as nearly equal as possible in breed, age, weight, condition, period of lactation, pregnancy, milk production and fatness. Lot 1 received grain and clover hay and Lot 2 grain, clover hay and sunflower silage. The grain was a mixture of oats, 5 parts; malt sprouts, 2 parts, and bran, 3 parts. The clover was choice alsike. At the end of 28 days the lots were reversed in the feeding program. This was done in order to eliminate variations due to individuality among the cows. The summary presents data obtained from both lots while on the same particular feeds. The figures show that the fourteen cows while receiving the ration of grain and clover hay gained on the average of 5 pounds more per head in 28 days than while they received the ration containing the sunflower ensilage. The grain ration was the same throughout the entire experiment and an average daily feed of 34 pounds of sunflower silage effected a daily saving of 89 pounds of hay per cow. There was a slight increase in production while the cows were receiving the sunflower silage. This increase was too small to be of significance except as an indication that there was no reduction in milk or butterfat production when the sunflower silage was fed.

The data presented indicated that under the conditions of this experiment one pound of alsike clover hay is equal to 3¾ pounds of sunflower silage, or on the basis of average composition as given above 0.94 pounds of dry substance of sunflower silage was equivalent to 1 pound of dry substance of choice alsike clover hay.

In the 1917 and 1918 experiments silage was from sunflowers that were approximately 30 per cent in bloom. They were harvested in between the 13th and 20th of September, and yielded 24 tons per acre, having received limited subirrigation only. In this experiment the sunflower silage was compared with choice alsike clover hay. Two lots of eight cows each were used. In this experiment 2.62 pounds of sunflower silage were not quite equal to 1 pound of alfalfa hay. The results show that the cows in Lot 1 gained 5.3 pounds more in live weight and produced 0.84 pounds more milk per cow daily. The butterfat produced was approximately the same. Allowing for the difference in gains in live weight and milk produced it was found that 2.83 pounds of sunflower silage was equal in feeding value to 1 pound of good alfalfa hay. Under the conditions of this experiment the lot receiving alfalfa only ate on the average of 26.65 pounds of alfalfa hay and the lot receiving sunflower silage on the average of 10.93 pounds alfalfa hay and 14.26 pounds of sunflower silage. Thus 15.72 pounds of alfalfa hay was replaced by 41.26 pounds of sunflower silage a ratio of 1 pound of hay to 2.63 pounds of silage. In another experiment comparing sunflower silage made from early cut and late cut produced slightly more milk and butterfat per cow, while the early cut showed a larger average gain in live weight during the 28 days of the test. This greater gain in live weight, however, might be due to the fact that slightly more grain and hay were fed with the early cut silage.

The bulletin also brings out that green sunflowers were used successfully as a soiling feed for dairy cows in the late summer as a supplement to pasture and also as the only green feed fed. The green sunflowers and green corn were compared as supplements to pastures during the latter part of the grazing season. Both were run through a feed cutter and chopped into 1 inch lengths. Only 5 per cent of the sunflowers were in bloom and the corn was in the silk stage. The cows ate the green sunflowers, readily consuming from 40 to 90 pounds per head daily, kept up their milk flow and did well on the feed, showing that there was practically no difference between the sunflowers and the corn.

In the tests for beef cattle no records were kept of weights and gains on the calves, but they appeared to do well on it. Two-year-old steers were fed a limited ration of sunflower silage for a period of 30 days with satisfactory results. Mature purebred beef cows were given sunflower silage as the morning feed and hay as the evening feed with good results. It was found that calves should not be put on heavy feed of silage too rapidly. If fed too heavily it has a tendency to have them go off feed. No difficulty of this kind was experienced with mature stock.

Breeding ewes were fed during the winter of 1917 and 1918 to determine the value of sunflower silage in replacing a part of the hay. Purebred Rambouillet and Shropshires were used in this test. The results indicated that for use before lambing 2.5 pounds of sunflower silage was equivalent to 1 pound of good alfalfa hay. The silage was also fed after lambing, but the results were not clear-cut enough to justify detailed mention. No unfavorable results were obtained from feeding the silage to breeding ewes either before, during or after lambing.

The tests made for comparison with alfalfa hay in the ration for brood sows was only of a preliminary nature. In addition to these two feeds a small amount of skim milk was fed. It was found that the brood sows would eat sunflower silage readily. During a part of the feeding period they ate 4 pounds per head daily in addition to a small amount of skim milk and the grain required to maintain the dry sows. The silage was first fed about two months before the farrowing season began and it was fed through the farrowing season and for a period of about four weeks thereafter with no unfavorable results. The station reports that, "While roughage of this character does not replace a very large part of the grain of the ration, it serves an excellent purpose in keeping the sows in splendid condition, being as satisfactory in this respect as alfalfa hay. In this trial it appeared that 2.5 pounds of silage were at least equivalent in feeding value to 1 pound of hay."

The Montana Station finds that good silage can be made from Mammoth Russian sunflowers, from the time they begin to bloom until the seeds begin to harden; that the stage of growth that will produce the maximum weight of the most palatable and digestible silage has not yet been determined. Apparently there is a greater loss of juices when the crop is harvested in the immature stage. The more mature plants seem to give the best feeding results.

Poison the Squirrels.

L. M. Lucas of Portland, Colo., has had trouble raising corn on account of the squirrels taking it up. As soon as the corn came through the ground the squirrels would start up a row and dig it all up. Mr. Lucas replanted the corn and killed most of the squirrels by poisoning them.

This is the method of poison that he used: Take one pint of water and dissolve one-eighth of an ounce of strychnine in it. Pour this over one gallon of corn. Then add twenty or thirty drops of oil of anise and stir the mixture up well. Stir it often till it is dry, so the corn will be poisoned evenly. Melt a cup of sugar and pour over the corn. This makes the corn sugar coated and helps to attract the squirrels. To poison wheat do the same as with corn, only use a pint and a half of water instead of a pint.

Put the poisoned grain near the squirrel dens as much as possible, as the only thing against this method is that birds are killed by eating it. This is also a very good way to kill prairie dogs and gophers.—H. L. Lucas.

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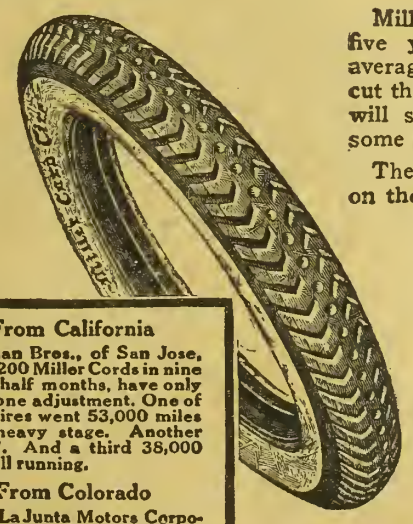

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Fall Work on the Dry Farm.

E. R. PARSONS.

Winter wheat and rye are about the only crops planted at this time of the year. August and September are the best months for winter wheat. If it gets a good start before the end of September it winters much better than that which comes up later. There is no crop superior to rye for fall pasture. It does not bloat and often stays green in our mild winters up to the holidays. There is nothing better for weanling calves. We all know that green feed promotes growth in young stock. The experts now claim to have discovered the reason. They say that it is because of the vitamines, which are present in the necessary quantities in all green stuff, but not so numerous or efficacious in dry feed. Therefore when calves are deprived of their milk, which is also full of vitamines, the green pasture is the best bridge over the weaning period.

While on the subject of vitamines it might be interesting to note that yeast produces them in abundance. Some people are taking half a cake to a cake a day to correct indigestion and tone up the system, and there seems no reason to suppose that it could not be used on chickens and stock to promote vigor and growth in any that would seem to require it.

The rye pasture is easily made. The seed can be run in by the cultivator between the corn rows as soon as the ears appear, and can often be used by October as soon as the plants are well established. Another way is to disk it in with the seeder in one operation on the corn stubble as soon as the silage has been taken off.

After the zero weather has stopped the growth, it does not usually sprout again until March, but will make green feed before the grass comes. If the stock are taken off about May 1 a cutting of hay can usually be obtained in June or July.

If the season is favorable the pasture can be plowed about the last of April and planted to corn in May or June for silage; but if grain is wanted this will not work out satisfactorily in a dry year, because the rye takes a large percentage of the moisture from the soil. In seeding either rye or winter wheat it is always advisable to plant deep, so that if it starts, a dry spell will not destroy it in the sprout.

The last of August or first of September is a good time to commence keeping an open eye for the best ears of corn for next year's seed. At high altitudes a most important quality is earliness. In going through the field an easy way to mark the earliest and most matured ears for future reference is to break or cut off the tassel and then at husking time the ears of these palnts can casily be distinguished from the others.

When the fall crops are in, the farmer usually turns his attention to plowing; for land plowed at this time of the year is the best of all for spring planting, not only on account of the amount of moisture it accumulates, but because the weathering of the soil by the elements breaks the granules and develops fresh mineral matter for the soil solution.

Plowing with the lister is becoming more popular every year wherever the soil blows or the snow piles up in drifts. With this implement every other furrow only is plowed, the earth from the furrows being thrown upon the middles. This leaves a series of ridges with hollows between them sometimes two feet deep, which catch snow in every blizzard. The first snow of the season settles in the bottom of the furrow which, on account of its depth, is much warmer than the surface and prevents the bottom from freezing. Therefore, whenever a warm spell comes along and some of the snow melts, it is quickly absorbed through the bottom of the furrow into the subsoil, and no moisture is lost.

On level land after the surface has become frozen, the snow that melts a little in the middle of the day, cannot become absorbed by the soil, and freezes again at night, losing water by evaporation during the process, which is kept up until finally it has all disappeared into the atmosphere. A listed field is the best snow trap there is and, also when the winter is dry and windy, the best insurance against soil blowing. In the spring of the year the middles can be plowed out with the lister and the whole field leveled for planting. Some do not plow out the middles in the spring, but leave them until the fall plowing again begins, when the furrows of the last year become the middles of this. This practice saves some time and labor and although it may do fairly well for small grain, the unbroken middles are too solid for the best results from corn, potatoes, beans and all crops which demand a less compacted seed bed. In the fall the land is often dry and difficult to plow, but dry plowing even when full of clods, is better than no plowing, for if worked at the right moment in the spring of the year, soon after precipitation, the clods will fall to pieces at the touch of the harrow. When the soil is in a half dry condition the disk plow often works better than the moldboard, but in general farming should not be used to the exclusion of the latter. Disking the surface with a disk harrow before plowing with a moldboard lessens the number of clods.

Land intended for orchard planting should always be prepared in the fall by plowing as deeply as possible and then plowing out a dead furrow where each row of trees is to be planted. The holes also can be dug and will catch much snow before spring, and if the dead furrows fill up, the water at thawing time will drain into the tree holes, providing a good reserve for the first year. The garden patch also does better for being plowed in the fal. It should be fertilized with old corral dirt or leaf mold, both of which are better than fresh manure from the stables. These can be spread on the surface and plowed under as deeply as possible. The most successful dry farm garden that we know of is plowed twelve inches deep. There is much less wilting in the hot weather when the garden is deeply worked. Where there are no watering facilities and water is sometimes packed by hand, the plants should not be allowed any until absolutely necessary, for if watered early in the season the roots will not go down, and the hot weather will get them unless you stand over them with a watering pot.

All land plowed in the fall should be mulched in the spring by disking or harrowing as soon as the frost is out of the ground.

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Alfalfa White Spot.

The attention of the Colorado Agricultural College has been called recently to the appearance of white leaves in alfalfa fields. At a little distance, the alfalfa looks as if it had been "hit with a fire." A number of fields have been examined. So far, it has been found that of the fields examined, they were affected by what is known as "white spot," or "alfalfa white" spot. This trouble is caused by an excessive concentration of certain salts, especiallly sulfates, in the soil. It is likely to appear frequently at the first irrigation after a very dry year such as Colorado experienced in 1919.

Alfalfa may be killed by the trouble if it is severe enough, according to Professor Alvin Kezer of the Colorado Experiment Station. But it is likely that the appearance will disappear after the first cutting, because usually the irrigation for the first cutting will lower the concentration of the injurious substances so that they will not cause the trouble.

The condition is purely a soil trouble. There is no cure for it except good drainage and proper irrigation. It is most likely to occur after prolonged dry spells where the evaporation has been heavy, which will cause the injurious substance to concentrate in the surface soil. It is a question of amount of the injurious substance. The injury is produced by physical action rather than chemical action.—C. A. C. News Notes.

Barley Disease Is Prevalent.

Reports received by the Colorado Agricultural College indicate that a serious disease of barley is becoming very prevalent in Colorado.

This disease is known as Barley Stripe and is caused by a fungus which lives over the winter on the seed. The plants may be affected at any stage of their growth from the young seedling to the almost mature plant. Affected leaves show yellowish to straw colored longitudinal stripes. The stems are also usually affected. The tissues in the stripe soon die frequently resulting in the lengthwise splitting of the plants. Later the stripes commonly have brown margins. At or just following heading time entire affected plants may die and following a shower or heavy dew, may become dark ashy gray from the abundance of spores produced over the surface. Often as high as 25 per cent of the plants in a field may be killed by this disease.

There is no remedy for this disease after the seeds have been planted, but experiments have shown that the disease may be largely prevented by treating the seed with formaldehyde solution of one pint to forty gallons. The seed should be soaked in this solution for two hours and then allowed to dry. The seed should be planted as soon as sufficiently dry to pass through the drill.

Specimens of diseased plants should be sent to A. K. Peitersen of the Colorado Agricultural College for identification.

"A few poor cows may do a little permanent harm to a dairy herd, but a poor sire will do untold damage.—One thousand pounds of milk per year is a conservative estimate of the improvement of the daughter's production to credit of a good sire."—Prof. W. J. Frazor, University of Illinois.

Growing Wheat at a Loss.

The cost of producing wheat of the 1919 crop was as low as $1 a bushel on just two farms out of 481 included in a cost of production study just completed by the United States Department of Agriculture. On 20 farms it was $5 or over. The bulk of the farms produced wheat at a cost somewhat less than midway between these two extremes. The average cost per bushel for all farms was $2.15. At such a price half the farmers in question would have lost money on their wheat.

Fourteen representative districts in the wheat belt were visited by the field men of the Office of Farm Management in making this investigation. Nine winter wheat areas were surveyed in Kansas, Nebraska, and Missouri, and five spring wheat areas in Minnesota, North Dakota and South Dakota. For winter wheat 284 records were taken, for spring wheat 197.

In the winter wheat area costs ranged from $1 a bushel for two farms to $8.20 on one farm. The average cost was $1.87. If the price received had been $1.87, more than half of these winter wheat growers would have produced wheat at a loss.

In the spring wheat areas the average cost was much higher—$2.65—the range running from $1.10 for one farm to $5 or over for 17 farms. If the price received had equalled the average cost, between 50 and 55 per cent of these spring wheat growers woud have failed to break even.

Yields averaged 14.9 bushels per acre for the winter wheat farms, and 8.4 bushels for the spring wheat farms, and the cost per acre $27.80 for winter wheat, as against $22.40 for spring wheat.

Department specialists, in cost of production studies, point out in this connection that, for the farms covered in this investigation, the so-called "necessary price"—that is, the price necessary to give the producer a fair degree of certainty of making a profit—would be found at a level considerably above that of the average cost of production. For example, to allow a profit on 80 per cent of the wheat produced on the farms covered by this study, the price would have to be about $2.60, as compared with an average cost of $2.15. At a price covering the average cost plus 10 per cent, 75 per cent of the crop would be covered, but 40 per cent of the growers would still fail to break even.

Inoculation for Legumes.

Inoculation enables legumes to make a good growth on poor soil by taking nitrogen from the air. It also enables the plants to take up larger amounts of potash and phosphorus and to give larger yields, says W. A. Albrecht of the University of Missouri College of Agriculture. By this practice the total crop is increased and its percentage of protein becomes higher, with a resulting higher feeding value.

Besides larger yields, and a higher protein content in the crop, inoculation causes greater root growth. This with the nodules included gives the root system also a high total nitrogen content; and since the root system remains in the soil legumes do not exhaust the soil nitrogen as rapidly as other crops. The legume, by taking nitrogen from the air, is a soil enricher and when plowed under serves as a nitrogen fertilizer. How much nitrogen a single crop of legumes plowed under will add to an acre of soil varies widely, and figures varying from 20 to 150 pounds have been given. It is generally believed that about three-fourths of the nitrogen in the roots and tops of leguminous plants, grown on average soil, may come from the air. Regardless of what this amount may be, the fact remains that properly inoculated legumes use the nitrogen of the atmosphere without depleting the nitrogen in the soil, while in the absence of the bacteria they may drain the soil of its nitrogen the same as any other crop.

That inoculation alone will not make clover or alfalfa has been proved conclusively in Harrison county. If the soil is poor in lime these legumes will not grow satisfactorily. A farmer near Eagleville had a field, one-half sown to alfalfa and the other half to sweet clover. Both were seeded last year and neither the clover nor the alfalfa were thriving. A number of the neighbors who had reported similar experiences were called in and a meeting held by the county agent to determine the trouble. A glance at the field showed stalks of both alfalfa and clover to be tall and dark green while a large majority of them were only half as tall and were yellow in color. The county agent took up a number of the yellow stalks and found no sign of inoculation present. The tall green stalks were in every instance found well inoculated. This in spite of the fact that the farmer had inoculated both the clover and alfalfa before seeding last fall. Since his methods of inoculation were in accordance with those given by the University of Missouri College of Agriculture, the trouble seemed to rest elsewhere. Soil samples were taken and tested. Every sample showed the soil to be extremely sour. The conclusion was readily made that the acidity of the soil had been the limiting factor. The farmers in this community are now planning to secure ground limestone by the carload to use on the alfalfa land.

Fall Irrigation Advised.

This is a subject that does not appeal to farmers who own good water rights and can supply water to their growing crops whenever those crops require it, but, nevertheless, there are times out of the crop growing season when water can be applied to good advantage and with phenomenal results.

There were many ditches on the Platte and its tributary valleys that were built after the direct waters of those streams were all appropriated, and the only water they had was what could be secured in winter and early spring with occasionally a short run from a summer flood or freshet.

The alfalfa fields were irrigated in early fall and early spring, or when there was no danger of covering them with ice and winter killing the alfafa, and the balance of the runs were put on stubble and other lands. On lands underlaid with a good, stiff or impervious subsoil, crop results were very satisfactory, but on light soils, or soils underlaid with gravel, results were not as good, as a few weeks of hot, dry weather in July or August burned out parts of those crops.

Results from good lands under this system were so noticeable in eastern Colorado that a crop survey was taken of the lands under the Springdale ditch in the Sterling district in 1912, against lands under one of the old ditches that had practically all the water they could use through the irrigating season, and the results of this survey were that lands under the Springdale ditch turned off more crop per acre than those under the old ditch with direct irrigation. There were several reasons for those results, and the most important one was fall plowing, which, if properly handled, will turn off from 20 to 40 per cent more crop than spring plowing. Results from fall irrigation of alfalfa were similar.

I am informed that in Longmont, Loveland and Fort Collins districts there are seasons that late water is not available for irrigation, but when it is, why not use it?

Indications are that there will be an abundance of water this fall, so why not be prepared by stacking grain as quickly as possible and disking the stubble ground, then if the time is not available for plowing, at least irrigate it. In irrigating fall plowed land do not make the mistake of trying to irrigate this land as plowed, or you will give up the job in disgust.

Spring tooth the land across the plowing, then with from 5 to 7 ditchers attached to beet cultivator, ditch the field for best water runs, and you will have no trouble irrigating it, but will find it simpler than flooding grain.

If this irrigation is done early, and the season is dry, it may be necessary to spring tooth as soon as the surface dries sufficiently, so that the moisture may be conserved over winter, but if applied late, or just before freezing weather sets in, leave it in this condition, working it down as early as possible after spring thaw.

Fall plowing handled in this manner will make an ideal seed bed and a 100 per cent stand of grain or beets will be the result.

Fall plowing and irrigation thoroughly settles the land, and winter's freezing and thawing puts it in a condition that no spring plowing can be put in.

Fall irrigated alfalfa also shows marked growth over alfalfa that has gone through a dry fall and winter, and is much easier to keep moist in a following season.

Tenants on one-year leases will not do this fall work unless well paid for it, so why not incorporate this in the lease? An incoming tenant ought to be glad to pay for such work, as it gives him a start with his spring work that it is otherwise impossible to have, coming on a new farm in February or March, and without it he is badly handicapped in trying to grow maximum crops.

If you have never practiced fall irrigation, try it this fall, and if your experience is as we expect, we will be delighted to have some information from you for this paper next season.—R. M. Barr, Agricultural Superintendent of Longmont Sugar Factory, in "Through the Leaves."

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Putting in a water system to supply your home and your stock deserves careful consideration. A mistake is serious and expensive. A convenience that doesn't work right, that has to be tinkered with, is an *inconvenience.*

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Leader

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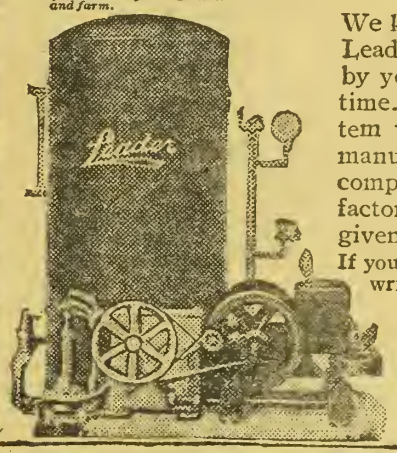

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Progress of Homesteaders.

In the new part of Las Animas county represented by the dry land section, evidences of progress are on every hand.

First there are windmills in sight almost anywhere one may stop—sometimes as many as a dozen from one location. Every windmill represents a good well, and consequently the foundation of a home. More wells are being drilled just as fast as a machine can be secured.

Second, the dairy cow of good type is seen on more and more farms each month. More people all the time are coming to feel that the dairy cow can take care of the family expenses and save them from the inevitable grocery bills which otherwise would pile up. The income from the cow is no small affair. It is safe to say that in this new section at least $500 per day is being paid for cream. Trinidad does not get much of this cream, largely for the reason that a good road is not yet secured to this eastern country. By the time it gets to Trinidad in warm weather it is boiling out of the cans. This would not be the case if it could be delivered into market the same day it is purchased at the various stations along the way.

This good road through is the only element lacking in a tremendous increase in production of cream as well as eggs. People are now selling their eggs at 25 cents per dozen, whereas if good market conditions could be secured the eggs would bring nearer the market price and would get into market in a fresh condition.

Third—The wheat crop in this great part of the county is again good. Although a portion of it blew out during the spring, what remained has had a good season and is making a splendid crop. Headers and binders are being purchased in large numbers and the harvest is now in full blast. When the agent was down last week the wheat was then ready to cut in some communities and it was seen that it would all be ready in a few days.

Fourth—Row Crops. The row crops are rather late, but nevertheless good, and with a continued good season will come out all right. There is a larger acreage than has before been planted in these crops. Notwithstanding the slump in the acreage of beans, there is an especially large acreage in beans here. New sod has been broken as the farmers realize that beans are the safest and surest sod crop that they can raise. We have no way at the present time of knowing what the bean acreage is, but we believe it not very much different from that of last year. The amount of farm machinery being sold to take care of these row crops is also very large. These are being supplied from La Junta, Lamar, Las Animas, Branson and Trinchera, as well as from Trinidad. About 25 to 30 carloads of machinery each year is being sold to take care of this great feed crop.

One who has not visited this eastern empire has no idea of the bigness of the problem. We may say to the Trinidad people that La Junta is absolutely alive to the situation and is putting forth strenuous efforts and a considerable amount of money to improve the roads into La Junta simply for business reasons. They want the trade from this section and they are going after it strong.—County Agent C. E. Smith in Trinidad Chronicle-News.

The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Lullaby.

Rockaby, lullaby, bees in the clover!
Crooning so drowsily, crying so low,
Rockaby, lullaby, dear little rover!
Down into wonderland,
Down to the under-land,
Go, now go!
Down into wonderland go.

Rockaby, lullaby, rain on the clover,
(Tears on the eyelids that waver and weep!)
Rockaby, lullaby—bending it over!
Down on the mother-world,
Down on the other world,
Sleep, oh sleep!
Down on the mother-world sleep.

Rockaby, lullaby, dew on the clover,
Dew on the eyes that will sparkle at dawn!
Rockaby, lullaby, dear little rover!
Into the stilly world,
Into the lily world,
Gone, now gone!
Into the lily world gone.
—Josiah Gilbert Holian.

Only One.

Hundreds of stars in the pretty sky;
Hundreds of shells on the shore together;
Hundreds of birds that go singing by;
Hundreds of bees in the sunny weather.

Hundreds of dewdrops to greet the dawn;
Hundreds of lambs in the purple clover;
Hundreds of butterflies on the lawn;
But only one mother the wide world over.
—George Cooper.

What Mary Wants.

Dear Sarah:

Lo, the thrifty housewife that you are! Seventy quarts of beans, and when I stop to consider the hours it takes to shell peas, and cut asparagus and blanch greens, I dare not stop to contemplate the other foods you have upon your shelves. But it was well to give me a midseason report. If you had waited until you had imprisoned all the corn, carrots, kohlrabi, beets, tomatoes, green peppers, peaches, pimentos, grapes, plums, watermelons—oh, I can't think of any more, which you have in your garden or there might be in the store, I should cease to remember all the good you have done and begin lecturing you on paying far too much attention to the inner man and also raising the price of glass.

I wish my shelves could groan as fruitfully and toothsomely; but I have canned all there has been time for and the totals are nothing like yours. And I can't blame it on wee Sarah. Her inside workin's run as smoothly as our perfect motor, since I've added the orange juice, and she is a cherub. But crops are heavy and there's one more man than usual to cook for, and he's very, very deep when it comes to filling him with food, but quite guileless otherwise. I think it's largely because of him that nothing in the garden has gone to waste, anyway.

In spite of crops and hired men, we took a week and went to Estes Park, and oh, my dear, but it was worth it! Those tall, still trees, the music of the little stream that hurried past our camp, the beauty of the mountains silhouetted against a luminous sky at twilight, are living in our souls as a source of peace that we can't lose soon. And beside all that John found out in encouraging the Ford to make all the hills, what was the matter with the tractor on the turns, and I learned how to make a new kind of pancakes. Next year we're going to take two weeks and go to Mesa Verde and then we'll go into a trance for the rest of the year. Think what it will save!

Now sewing and school are looming large on our horizon and I've another idea running loose. This is the reason, I hate to put sewing carefully away in a closet when a whole raft of company drops in and the dining room, which is incidentally my sewing room, has to be cleared. It always gets mixed with the extra table leaves on the cedar mop or something. And in looking at the basket I fixed for all wee Sarah's needs, the idea hit me, why not a sewing box, big enough to camouflage as a very wide seat, pockets inside for patterns and a big space for folded sewing which had to be chucked in a hurry?

I'm going to make it from a box 30 inches high and 46 inches long, and divide it in two compartments, a small one at one end 15 inches wide, which will have tapes tacked all around, back of which patterns can be slipped, and the rest of the length for the big compartment which will just be for unfinished garments. The small space will also hold my skirt marker, the tape measure, beeswax, tracing wheels and all the other things too big for sewing machine drawers. Of course, the top will be padded with an old quilt, the whole box covered with cretonne and put on casters. There you are, and how does it sound?

The clock says 4:30, I'm frying chicken for supper and the fire isn't started. Do stop canning long enough to come over before school starts.

Lovingly, MARY.

"Betty Bees" Popular.

"'Betty' has recently come from New Hampshire where she has been a great boon in helping the women make more of their own clothes, thus assisting them to reduce the high cost of living.

"Groups of Connecticut women who have been taking up clothing as a part of their Farm Bureau program have also become interested in making this type of dress form. Nowadays 'Betty Bees' are very popular, the women taking turns assisting each other to make these dress forms.

"To make such a form, a high-necked undervest is first put on the woman for whom the form is to be made. Then strips of gummed craft paper about one inch wide are pasted diagonally onto the vest, starting from the shoulders and working to the center on both sides and on the back. The paper is also pasted diagonally on the hips, meeting at the center of front and back. The strips overlap each other about half an inch. When back and front are completed a second layer of strips is pasted over the first one; this time the strips are placed as nearly straight as possible. When second layer is complete cut down the back to remove and paste together with another strip.

"If the form is varnished or shellaced, it will be stiffer and wear longer. It can also be put on a standard so that the skirt may be hung on it.

"Why not have a 'Betty Bee' in your community? They cost about one dollar and will make your home sewing much easier. Apply to your local Farm Bureau and the Home Demonstration Agent will be glad to assist the women in your community to make such dress forms."

The above was copied from a New Hampshire Farm Bureau record and sounds rather distant and difficult. But it isn't. The writer was very skeptical of these paper dress forms until an opportunity came not long ago not only to see one, but to help make one in the state extension office in Laramie, Wyo. But don't begin making one just from the above directions. Have some one who has seen it done help you. It is just as simple as it sounds, but "pasting paper diagonally" and making it fit is somewhat of an art. There are to be numerous demonstrations in various sections of Colorado and Wyoming. Find out where one is being held and attend. After watching or helping you'll very quickly get the "hang" of it.

They are by far the most practical, surest fit and most easily made of any of the home made dress forms seen so far. They are not flimsy but perfectly hard, like molded papiermache forms on which one sees corset models in stores, and the measurements can be checked up so absolutely that they can't be for anyone but just the one on whom they are made. It takes about an hour and fifteen minutes for two amateurs to make one on a third victim, but she does not have to stand still all that time. For the first time a home-made dress form really looks practical to the skeptic writing this.—E. D.

This Is From a Man.

Being an old-timer in the northwest, west and southwest, and deeply interested in article by E. L. Johnston in your paper of June 15, I beg to offer what I can on the subject.

I believe the causes of the dissatisfaction are chiefly two—first, economic; second, social, and the remedies for the same, namely economic and social. The economic factor is the hardest to endure and the hardest to remedy. There is plenty in this nation for all, but terrible the inequality of distribution!

Another thing very hard to understand and there seems little remedy. Mr. Johnston is right when he says, "The wife, being the more temperamental of the two, has shown the strain more." It seems that usually women have more to suffer and they suffer the same things more. For these reasons we men should be more sympathetic and considerate. From the farm comes the family living, therefore farm buildings and equipment come first. The woman must drudge on in a poor house with little and poor equipment. To illustrate: Often the well is nearer the barn than the house and water is carried; or even if the well is near the house, if only a few dollars could be spared, a small tank, a few lengths of ¾-inch pipe and one faucet in the house would not cost much in dollars, but would pay big in human energy conserved, a brighter face on the wife and a happier, better home. This suggests many things wherein a little money would pay big in other things besides dollars. But often the calamity is—no money! The wife should fully understand all the business. The two should work in the closest sympathy and harmony.

Social? Well, let me tell an experience in Dakota when I was a boy. It seems a calamity to carry city conventions into the country. In Proverbs 27: 17 and 19, it is written: "Iron sharpens iron; so a man sharpens the countenance of his friend. As in water, face answers to face, so the heart of man to man." A woman should go to see her neighbors often and go to town with her husband at every opportunity.

I knew two families who, for a number of years, had been living on adjoining homesteads. Not one member of either had ever been in the house of the other. Why? Quarrel? No. Then why? And echo answers "Why?" But about the same it was for miles around.

A young man came and got a job as hired man on a farm. He went from house to house on Sundays talking Sunday school. Called a meeting. People he had not heard of came in wagon loads for miles. They organized, sent for a preacher and in a very short time out of it grew a church and other organizations. They began visiting each other. A new spirit quickly grew up in the neighborhood. One incident will illustrate the great and far-reaching change. A cow had decided she owned every field into which she could break. Everybody knows how much trouble one unsanctified old cow can make. After the new order began she went visiting

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one day. A man caught her in his field and instead of starting the usual fuss, he led her home, saying in a neighborly manner, "She wandered over our way, thought maybe you would be looking for her. No great rush of work at our house today, didn't hurt me any to bring her over."

That one incident became the beginning of real friendship between those two families. It was noteworthy that her owner never let her get away again. Thus it was everywhere. The people found themselves and each other.

Rather nervy for a young upstart, whose entire earthly possessions could be carried in a bundle under one arm, to get a wage job on a farm, then proceed to teach the countryside how to be neighborly! Well, I am not a prophet, but how would it do to try a little missionary work in your vicinity, Mr. Johnston?

Having finished the above, I've been thinking. Don't know that it will do any harm to tell you I am the chap who started that Sunday school. Nineteen years of age at the time, I hoped only to organize a little Bible class among a few people near by. What was my surprise when wagon loads of people came for ten miles, carried in wagon seats to sit on and filled the house to its fullest capacity.

Those people were hungry for sociability; hungry for social relationships with somebody; hungry for sympathetic ears to which to tell their troubles; hungry for surcease from the endless economic struggle; hungry for some brightness mid the keen disappointments and deprivations of frontier life; hungry for an excuse to break away from old conventionalities, get together and organize a real neighborhood of real neighborliness among real neighbors.

I think I begin now to understand. I was just a voice, who accidently spoke the right word in the right place in the midst of a situation I little understood and started something. I little knew what. Then it was better for me to drop and let them work out their own ideals in their own way.

No, I am not a "Skypilot," just a Christian. Never did anything wonderful, never made much of a "howling success" of anything, pegging away on a little farm here, getting by after a fashion. I believe I will get by on the right side on the last day. Along these lines will the solution of many problems be found.—F. H. C., Arizona.

Our Fashion Service.

All patterns 12 cents each. Address Western Farm Life, Pattern Department, 1518 Court Place, Denver, Colo.

Read This Before Ordering: Patterns ordered through this magazine are mailed promptly from the factory at Brooklyn, N. Y., and arrive in 10 to 12 days from time order reaches Western Farm Life. Be sure to specify size and number of patterns. Write your name and postoffice address plainly to avoid delay. These patterns are handled at cost, as a service to our women readers. The price of 12 cents includes postage.

3123. A Dainty Frock.—Cut in sizes 4, 6, 8 and 10 years. White batiste with lace and insertion, or linen with embroidery would be effective. Silk, crepe, taffeta, satin, voile and poplin are also attractive for this style. It will require 4 yards of 27-inch material for a 10-year size.

3141. A Simple Dress—Cut in sizes 2, 4, 6 and 8 years, and will require 2⅝ yards of 27-inch material for a 4-year size. As here shown, natural shantung was selected with embroidery in red, and bright red buttons for trimming. Gingham, percale, voile, china silk, challie, repp and velvet would be good for this design.

3307. A Pretty Frock for Slender Figures—It is cut in sizes 16, 18 and 20 years. Figured challie, printed voile, foulard, taffeta, lawn, organdie, gabardine and sateen are nice for this model. The sleeve may be finished in elbow or wrist length. Width of skirt at lower edge is 1⅞ yard.

3306. An Attractive Dress—Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 6 yards of 36-inch material. The width of the skirt at the lower edge is 2 yards with plaits extended. Black taffeta, braided or embroidered, also linen, serge, tricolette or duvetyn could be used for this model.

3293. Comfortable House Dress—Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 5⅝ yard of 36-inch material. The width of the dress at lower edge is 2 yards. Percale, gingham, lawn, sateen, flannel and albatross could be used for this style.

3122. Simple Apron Model—Cut in sizes 32, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. One could develop this in white drill, linen or lawn, with tape binding in white or colors. It is good also for gingham, lawn, percale, chambrey, sateen and alpaca.

3304. Two Popular Models—Cut in sizes 32, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A medium size requires 3 yards for No. 1, and 1⅞ yards for No. 2, of 30-inch material. Satin, silk, duvetyn, faille, embroideries, batiste and lace may be used for these models.

3285. A Simple Set of Hat and Apron—Cut in sizes 1, 2, 3, 4 and 5 years. A 4-year size will require 2⅜ yards of 27-inch material for the apron and 1 yard for the hat. Apron and hat may be made of the same material. Cretonne, linen, drill, gingham, chambrey, percale and shantung could be used. The apron may serve as a dress, and be worn with bloomers.

Fall and Winter Catalogue.

Send 15 cents in silver or stamps for our up-to-date **Fall and Winter 1920-1921 Catalogue,** containing over 500 designs of ladies', misses' and childrens' patterns. A concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various simple stitches), all valuable to the home dressmaker. Catalogue price 15 cents; all patterns 12 cents each.

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FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

SEND FOR NEW FARM, RANCH LIST, 100 bargains. A. J. Simonson, Cooper Bldg., Denver, Colo.

IF YOU WANT TO SELL OR EXCHANGE YOUR property, write me. John J. Black, 33d St., Chippewa Falls, Wisc.

WANTED—TO HEAR FROM OWNER OF GOOD farm for sale. State case price, full description. D. F. Bush, Minneapolis, Minn.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description and cash price. Morris M. Perkins, Columbia, Mo.

1,100 ACRES IMPROVED ALFALFA, WHEAT and corn land; 100 acres under ditch, reservoir on place; good terms. Owner, Box 212, Deer Trail, Colo.

REAL ESTATE WANTED—SELL YOUR PROPerty quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., Dept 11, Lincoln, Nebr.

OWING TO CHANGE OF OCCUPATION, I WILL sell my ranch and full blood Angus cattle and Percheron horses, or any portion of them. Address G. F. Lucore, Arriba, Colo.

FINE IRRIGATED RANCH NEAR DENVER—1,000 acres, 600 acres irrigated, best of water right; 225 acres in alfalfa; four sets of improvements. Priced $100,000, one-third cash. C. K. Davies & Son, 434 Foster Bld., Denver, Colo.

FOR SALE—STOCK FEEDING PLACE, 320 acres, two miles to stockyards, every acre cultivated; 150 acres alfalfa; $30,000 water right; $15,000 worth of improvements. Price $200 per acre. Terms. The Todd-Mulbar Inv. Co., 301-05 Cooper Bldg., Denver, Colo.

WRITE FOR FACTS ABOUT WYOMING LANDS; complete, authentic information on agriculture, dairying and live stock opportunities in irrigated and non-irrigated districts. Low priced, reasonable terms; good roads, schools and markets. Wyoming Immigration Commission, 324 Capitol Building, Cheyenne, Wyo.

LIVESTOCK RANCH IN ARAPAHOE COUNTY, Colo., sub-dividing the famous old cattle ranch, Bo-Peep Meadows, about 4,000 acres in tracts. No. 1—1,240 acres, 100 acres sweet clover, 40 acres native hay, 60 acres now in alfalfa, 100 acres fine corn, balance good pasture; plenty of timber for shade and protection, watered by spring well, and windmill and all nicely fenced. A completely equipped ranch for dairy or pure-bred livestock. Good line of ranch improvements including water system. Located two miles from Deer Trail, on U. P. R. R. Price $45.00 per acre and exceptional good terms. C. K. Davies & Son, 434 Foster Building, Denver, Colo

RANCH BARGAINS—172 ACRES MOUNTAIN ranch, good four-room house, large garage, barn for four head of horses, cow barn for seven head, good chicken house, other necessary outbuildings; 50 acres in hay, 12 acres oats and barley, some timber on the place, plenty of grazing land. On main road and mail route. Price $5,750; $3,000 down, terms on balance. Immediate possession.

You, and not I, will be the loser if you do not call in or write me before buying. I am selling farm properties exclusively of all kinds and descriptions and I have an exceedingly large number of exclusive listings of mountain ranches, stock ranches, irrigated and non-irrigated, improved and unimproved, and choice garden tracts and country homes, well located with excellent water rights, choicest of soil, priced right, and remember, you are dealing with one who knows land and land values. I am selling my properties on their own merits. You will find them just as represented. Call in, phone or write for particulars or appointments.

I have some very fine properties in the city of Denver to trade for farm property, both large and small, and city property for farm property.

See Charles, with Ehrenkrook, Phone Main 8104, 308 Ideal Building, Denver, Colo.

DAIRY FOR RENT.

GOOD OPPORTUNITY FOR MAN WITH SMALL capital. Dairy can be handled separate from farm. Equipment for twenty-five cows, plenty of silage, beet pulp, beet tops, and alfalfa hay delivered at barn. Within four miles of the Lamar plant of the Helvetia Milk Condensing Company. A milk route goes by the front gate. For further particulars write L. M. Sweitzer, Secretary of the Prowers County Dairy Breeders' Association, Lamar, Colo.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FALL RYE SEED, ABSOLUTELY PURE, 3½ cents per pound. A. J. Simonson, Cooper Building, Denver, Colo.

GUARANTEED SEEDS—HIGH GERMINATING alfalfa, $12 bu.; Red Clover, $25; Sweet Clover, $15; Timothy, $5; Rye, $2.25; Sugar, $18 cwt. Bonds accepted. Meier Seed Co., Russell, Kansas.

KANRED WHEAT FOR SALE—THIS WHEAT has been certified and was grown from seed obtained from the Kansas experiment station at Fort Hays last year. Price $3.00 per bushel F. O. B. Nunn, Colo. Hart Bros, Nunn, Colo.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WRITE FOR DELIVERED PRICES ON CEDAR posts. Pay after unloading. J. B. Overton, Sagle, Idaho.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FIREMEN, BRAKEMEN, $225-$250 MONTHLY; all railroads, everywhere; experience unnecessary. Railway Association, Desk No. 6, Brooklyn, N. Y.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

WANTED—YOUNG MAN TO WORK WITH COLlege dairy herd. State wages and recommendations in first letter. Address Box 3-C, Western Farm Life, Denver, Colo.

BIG MONEY AND FAST SALES—EVERY OWNer buys Gold Initials for his auto. You charge $1.50, make $1.35. Ten orders a day easy. Write for particulars and free samples. American Monogram Co., Dept. 114, Glen Ridge, N. J.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HONEY.

DELICIOUS NEW HONEY, 10-POUND PAILS $2.50; 60-pound cans, $13.00. You will find this honey pure, clean and nice. A. A. Lyons, Fort Collins, Colo.

"THEBESTO" ROCKY MOUNTAIN HONEY, light colored, thick, fine flavored; per can, five pounds net, postpaid, anywhere west of Ohio river, $1.50. Send remittance with order. The Colorado Honey Producers' Association, Denver, Colo.

SACKS.

SACKS FOR ALL PURPOSES—COLO. WOOD Box Mfg. Co., 11th and Market Sts., Denver.

100,000 SACKS FOR SALE, SECOND-HAND. Western Sack & Burlap Co., 2727 W. Colfax ave., Denver, Colo.

FRUIT BOXES.

FRUIT BOXES FOR ALL PURPOSES—COLOrado Wood Box Mfg. Co., 11th and Market Sts., Denver.

PATENTS.

PATENTS—BOOKLET FREE. HIGHEST REFERences. Best results. Promptness assured. Send model or drawing for examination and opinion. Watson E. Coleman, Patent Attorney, 624 F st., Washington, D. C.

Profitable Farm Poultry

W. E. VAPLON.

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, Western Farm Life, Denver, Colorado.

Egg Laying Contests.

When is the farmer going to have his inning in this egg laying contest business? We can't pick up an agricultural paper these days without seeing something about egg laying contests, but there is mighty little in what we read that is of any real benefit to the farmer and precious little to benefit the commercial poultryman. There was a time when the information derived from these contests was very welcome and valuable, but when they demonstrated how many eggs a hen was capable of laying in a given time, how many pounds of feed she ate in a year, and what mixture of feeds she liked best, which agreed best with her and with the egg basket, then, it seems to us, it was time to try something else for a while. Instead, we have a ceaseless repetition of six hens in a pen, fed anything and everything regardless of cost, kept under very artificial conditions under expert management, again regardless of cost, proving or disproving all that has gone before in the thousand and one other egg laying contests.

The farmer and commercial poultryman are not particularly interested in knowing what one hen will do under extreme, abnormal or artificial conditions, but would like to know:

How many pounds of feed needed to feed 100 or 1,000 hens under such conditions as he can furnish.

How many eggs he may expect under those conditions.

The mortality in that flock.

The age at which his pullets will pay their way.

How to balance the feeds he can profitably grow or procure.

A more practical but effective method to give them the information now given through the trapnest; to say nothing about hatching, marketing and other problems.

Still, we like to read the reports and we have before us these figures taken from a recent report: During seven months, beginning November 1, 1919, 270 pullets laid 113 eggs each. This doesn't mean that they will continue this gait during the following five months, for even contest fowls haven't yet the knack of perpetual motion. We see no particular reason why the same number of pullets in one flock instead of six in a pen, on the farm, properly hatched and raised, should not do as well or better; suppose they had, then the farmer might expect some such result as the following:

11 eggs each in July.
8 eggs each in August.
8 eggs each in September.
6 eggs each in October, which would be a total of 146 for the year.

The pullets in the contest will probably do better than that, but even so will not make a big score.

Fifty years ago hens in similar contests did better than this, which may mean much or nothing; such facts are good to chew on, however. But if the farmer can go into winter with 200 or 300 pullets, give them good care and reap the same number of eggs from his labors, the fact that six hens somewhere else are laying twice as many need not bother him much. At least his profits will not show so unfavorably. In fact, we are willing to gamble that his profits (net), will be greater than those of the fellow running the contest.

The cost of production in all the contests we have known anything about has always seemed excessive, but lose sight of that one little factor in the production of eggs and the business will surely go into the hands of a receiver, soon or late. Down with the cost of production is as important as up with production, though we are inclined to believe, as we see wasteful and careless methods so generally practiced by poultrymen, that cost of production is given less consideration by them than by almost any other business men.—W. E. V.

Silage for Chickens.

How can a half barrel be made into a silo for chicken silage? Is there anything to do more than putting weights on top of cover? Do young sunflowers make good silage?—H. M., Weld county, Colo.

The quality of silage depends upon whether it is packed evenly and tightly. If you can weight the mass sufficiently it should keep fairly well. Cut your sunflowers into short lengths, say ¾ inch pieces, and pack down as firmly as possible, so as to make the mass air-tight. Silage keeps best by reason of its own weight, so you will see that it is rather a difficult problem to make it in a small container and expect success. It makes good chicken feed for winter and takes the place of green feed in the ration. The Russian sunflowers which are used for silage are usually cut when fairly well in blossom. If cut when green the silage is very watery and has little food value. You should be careful, also, not to wait too long, because then the stalks become dry and woody.

Fowls Have Throat Obstruction.

I have some Black Minorca chickens and some of them have something the matter with their throat. Several times during the day they make a very loud sound like they are trying to cough up something. Please tell me what this is and what to do for it. Is it contagious?—C. W. C., Morgan county, Colo.

Editor Poultry Department:

The condition of your fowls may be caused by an obstruction in the throat, a crop-bound condition, or a cold; probably there is nothing to worry about. Examine the mouth and throat. If there are no ulcers or other evidence of colds or roup, and no foreign substance or long grass to be seen, and if the crop is not badly distended and the matter in the crop seems to be soft and yielding to the touch, forget it and the chances are that the trouble will disappear. If the trouble continues and many become affected, take a bad case to a veterinarian for examination.—W. E. V.

An elderly woman, exceedingly hard of hearing, lived near the river. One afternoon a warship fired a salute of ten guns. The woman, alone in her little house, waited until the booming ceased. Then she smoothed her dress, brushed her hair back in a quaint manner and said sweetly, "Come in."

BARRELS AND KEGS.

BARRELS AND KEGS FOR ALL PURPOSES—Colorado Wood Box Mfg. Co., 11th and Market Sts., Denver.

CHICKEN COOPS.

TURKEY AND CHICKEN COOPS—COLORADO Wood Box Mfg. Co., 11th and Market Sts., Denver, Colo.

TANNING.

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

HATS CLEANED.

OLD HATS MADE NEW. S. M. BELWOOD, 1542 Court place, Denver.

VIOLINS.

VIOLINS WITH COMPLETE OUTFITS FOR SALE on easy monthly payments; five days free trial. Write Miss Bertha Mardiss, Shawnee, Kans.

INVENTIONS.

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

BUTTER WRAPPERS.

BUTTER WRAPPERS—FINEST PARCHMENT, pound size, neatly printed, guaranteed. By mail promptly at 100, 60c; 250, $1.25; 500, $2.00; 1,000, $3.75; postage prepaid. Home Specialty Co., Middleton, Idaho.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

AUTO AND TRACTOR SCHOOLS.

THE DENVER Y. M. C. A. AUTOMOTIVE School guarantees satisfaction in teaching these well-paying trades: Auto and Tractor construction and repair, oxy-acetylene welding, vulcanizing (including truck pneumatics), and after Sept. 1, storage battery building. Day and night; School backed and supervised by Denver automobile industry. 600 students last year. Our object is service, not money-making. We charge less and give more personal attention. If you are mechanically inclined, write for descriptive booklet.

TRACTOR AND FARM IMPLEMENTS.

FOR SALE—CASE THRESHING OUTFIT, RUNning order, complete. Address, Albert Frey, Weldona, Colo.

POWER HAY PRESS AND 12-25 AVERY TRACtor; both guaranteed excellent working order; $900; real bargain. Owner, 2015 East 12th avenue, Denver, Colo.

FOR SALE—36" BIDWELL BEAN THRESHER, used only two seasons; good condition, $450. Universal Bean Harvesters, new, $25.00 each. G. T. Huston, Strasburg, Colo.

FOR SALE—CLEVELAND TRACTOR, TOGETHer with Canton four-bottom 26" disc plow for $1,050.00; a real buy at two-thirds the price of new. Terms considered. Tractor near Gunnison. For information call or write 1449 Court Place, Denver, Colo.

Out Among the Breeders.

On the livestock pages of this issue is an announcement of the big Dissolution Sale on October 5th at the Western Holstein Farm, 5½ miles from Denver. This is the Hall Brothers' farm and will give the breeders a chance for some fancy and outstanding animals. The Hall Brothers' breeding is too well known to need description here. Read the ad.

There will be a big sale of Milking Shorthorns at the Wyldemere Farm at Littleton, Colo., during October Watch the livestock pages of Western Farm Life for the announcements of the date. Mr. J. B. Benedict, owner of Wyldmere, promises a real sale, and a chance to pick up some excellent individuals of the Milking Shorthorn breed.

The Divide Herd

Young Bulls

We are now offering at very reasonable prices some good Shorthorn bulls suitable for small herds. Fall calves and a few yearlings priced for quick sale. Full particulars on application.

THE ALLEN CATTLE CO.,
SHORTHORN BREEDERS,
Colorado Springs, Colorado

Polled Herefords

Beau Donald, Polled Plato and Success blood constitute our herd.

SMITH LIVESTOCK CO.,
Chivington, Colo.

FOR SALE—ENTIRE HERD OF
Registered Shorthorns

Bred right. Many of them closely related to the cow "Western Ascalon" that sold at the National Sale for $5,500. These cattle will be priced right. Must sell because of failing health. Call or write. W. B. & E. M. DOWNS, ROUTE 1, YUMA, COLO.

REGISTERED BIG TYPE DUROC JERSEY HOGS

Am offering some good Spring Gilts and Boars. Also some good fall gilts. Write for prices and breeding.

August F. Borgmann,
R. F. D. 4. LONGMONT, COLO.

Bargains in Bred Sows

20 yearling sows bred to farrow in August and September, priced to sell. All bred to our prize winning Crusader, winner at the Denver show. Shipped on approval and guaranteed.

"Daly's Durocs," Cambridge, Nebr.

COL. H. C. JENNINGS.
Purebred Livestock
AUCTIONEER
Also conduct Sales of Real Estate.
534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

GREAT BARGAINS—REGISTERED HEREFORDS; DURHAMS (called Shorthorns), and ABERDEEN ANGUS; ages 1, 2, 3 and 4 years old. Prices $125 per head and up. Also Percheron and Belgian Horses from 1 to 6 years old. Prices $125 and up. Write for circular. One head or car lots. Breeding Guarantees with each.
ILLINOIS HORSE & CATTLE CO.,
Good Block, Des Moines, Iowa.

FOR SALE.
Sons of Sir Johanna Bess Segis
who combines in the closest degree the blood of **King Segis Pontiac Count** and **Piebe Laura Ollie Homestead King.** Send for their story.
PAHGRE VALLEY RANCH,
MONTROSE, COLO.

H. C. DENNIS, Auctioneer
FORT MORGAN, COLORADO
Registered Shorthorn and Jersey Cattle
Real Estate Sales Conducted. I can sell your real estate if it can be sold.
Wire at my expense for dates.
Phone: Res. Morgan 155J; Office Morgan 15

Straight and Polled Shorthorn Cattle

Valentine's Last X12316 452005 at head of beef herd. Claywood White 427350at head of milk type.

STATE INDUSTRIAL SCHOOL
Golden, Colorado

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.
C. F. Burke, Mgr. Pueblo, Colo.

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

BEAU ASTER

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER
Holyoke, Colo.

DICKENS SHORTHORNS

Get Into the Purebred Game

I have twenty head of five to seven months old calves that I will sell at a close price of $50 to $100—and good ones at that.

Also yearling heifers and bulls, cows and calves.

Write me. I need the money.

W. A. DICKENS,
Longmont, Colorado.

WHO NEEDS A PERFECT INDIVIDUAL TO HEAD THEIR HERD?

Son of a 23.23 lb. 3-year-old heifer—an unusually good yearly producer—by a son of our $5,000 bull—out of the 30-lb. cow who produced the great show cow and State Champion Junior 3-year-old Lilu Segis Pontiac, 34.25 lbs. butter in 7 days.

He is about one-half white, and a beauty. Ready for light service. The first check for $350 takes him.

SANBORN MEADOWS,
MRS. R. G. DOUGLAS. RUSH, COLO.

Glendale Stock Farm

Irvindale Rowdy
Grand Champion
Belgian Stallion
Chicago, 1917,
Denver, 1918
and 1919

Breeders of
BELGIAN HORSES
and
POLLED HEREFORD CATTLE

Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.

Glenrose Farm Herd

REGISTERED DUROC JERSEY HOGS.

Bred Gilts and Weaned Pigs. Also a few good boars for sale. All big-boned.

R. C. VAN SCOY & SON,
Highland Station, Route 5 Denver, Colo

REGISTERED JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.
H. J. VAUGHN, KIRK, COLO.

Dispersal Sale---September 17, 1920

I will offer my entire herd consisting of

12 Head of High Grade Holstein Cows

Peggy, fresh May 3, 1920. Record to Aug. 1, 1920, 4,413 pounds Milk, 136.45 pounds Fat.

All have been tested and have monthly and yearly records. My herd bull, Pahgre Cactus America De Kol No. 215591; dam's record 25.40 lbs. butter in seven days, 540 lbs. butter in 10 months at 10 years old. Sire's dam, 28 lbs. butter in seven days, 780 lbs. butter in one year. He is a sure breeder and gets 75 per cent heifer calves.

Also nine head of registered Duroc-Jersey Hogs.

One herd boar, Orion's Colonel No. 262801, by Orion's Pal, he by Pal Orion out of Lady Colonel 1st. She by Crow's Lady.

Two 2-year-old Durocs, tracing to Burke's Good Enuff.

Four Spring Gilts, extra good.

Two Spring Boars.

Also Farm Machinery and Horses.

ALLEN C. NASH, Owner, Montrose, Colo.

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
JOHNSTOWN, COLO.

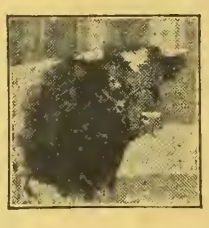
JAMES PONTIAC DEKOL ORMSBY

Edbrooke Durocs - Green Acre Farm

Registered Duroc Jerseys.

My Herd Boars Are Defenders of Col. Breeding.
Green Acre Defender 166505. Edbrooke's Defender 165263
The Biggest of the Big Type.
My Sows Were Prize Winners Denver 1920.
The Better Your Stock, The Better Your Returns.

H. W. J. Edbrooke, Prop., 6th & Wadsworth, Denver



CHICAGO'S HIGH RECORD

Yearling Shorthorn Steers sold July 20 at the Chicago yards at $17.25 per cwt., the high price of the year. These Nebraska yearlings weighed 1,076 lbs. and sold for **$185.61 each.** July 22, 28 Shorthorn yearlings averaging 891 lbs., bred and fed in Illinois, sold for $17 per cwt., and averaging $147.90 per head.

Last year 134 Shorthorn cows in Canada made milk records from 7,000 to 17,723 lbs., 31 from 10,000 lbs. up. It pays to grow Shorthorns.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION.
13 Dexter Park Avenue Chicago, Illinois

MILK RECORDS

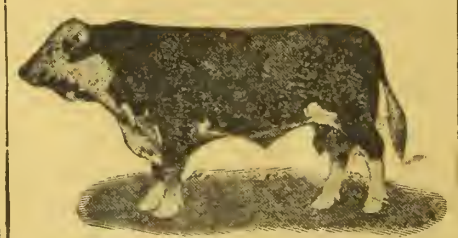
Do Not Replace Straight Bates Shorthorn Blood

FOR

Straight Bates Shorthorns are the "foundation source' of the Milking Shorthorns of England and America.

The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY
GREELEY, COLO.



Verdun Fairfax, 547803.
FOR IMMEDIATE SALE.
Six young bulls of Fairfax breeding, $300 to $500. Two choice herd bulls, and Fairfax Heifers. Also few choice heifer calves. All stock disease free, and guaranteed.
Prompt Attention to Inquiries.
SNEFFELS LAND & CATTLE CO.
RIDGWAY, COLO.

MILKING SHORTHORNS.
All Cows Officially Tested. 125 in Herd.
Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.
THE BONVUE FARMS CO.,
Stockyards, Denver, Colo.

Wallie Farm Reg. Holsteins

State Milk Record

Established by Mystic Polkadot Lottie, junior 2-year-old, 540.4 lbs. milk in seven days. Best day's milk 83.6 lbs. Fourteen other excellent A. R. O. cows developed recently. All records made without fitting or forcing.

A number of wonderful records will unquestionably be made on these cows at next freshening. Take advantage of this fact by buying a Wallie Farm bull calf now. A few 2-year-old heifers for sale.

Herd Sire KING JOHANNA SEGIS PONTIAC
"His sisters have broken over 100 world's records."

W. G. Foster, Owner, 4800 So. Penn.
Phone Englewood 122, Denver.

World's Milk and Butter Records

And Great Show Ring Winnings Galore Are Represented in the Blood of This Great Sale

At Hall Brothers, Proprietors Western Holstein Farm, 5½ Miles Southwest of Denver, Colo., on the Morrison Road.

Mark the Date
October 5th

Mark the Date
October 5th

150 Head

150 Head

We are disposing of this great Registered Herd of Holstein-Friesian Cattle at public auction to divide our money and settle our partnership in this great breeding and producing herd. The herd represents in blood lines the blood of Sarcastic Lad, Pontiac Korndyke, Hengerveld De Kol, and is built on the families of the Johannas, the Colanthas, and the Ormsbys, and stands today as one of the great herds of the breed. Being healthy, of large size, refined, and uniform in conformation and showing great production and qualifications of show ring winnings, are the characteristics of the animals of this herd, and their official records and show ring winnings stand high in the record office of the National Holstein-Friesian Cattle Association.

Seldom is such a herd comprised of the blood of this herd and carrying the great characteristics of producing and breeding ability ever offered to the public in open market, and there are animals in this herd that could not be duplicated by private treaty anywhere in the United States for thousands of dollars. We engaged in the dairy business here in Denver, Colo., as young men with mighty little money. Our business has grown to large holdings of various propositions. The establishment of this high-class Registered Herd was started about thirteen years ago, and was established upon the leading blood of the day. We were familiar with the livestock business, for we were raised in it, and knew the value of good Blood in livestock. In a way we both regret the disposing of this great herd of Holstein-Friesians, as it has been a means of great profit and a source of satisfaction and personal pleasure, but our responsibilities are increasing and our holdings growing, and we feel that this partnership breeding proposition should be dissolved—hence the dispersion sale.

In response to our decision we are offering to the breeding public one of America's great Registered Holstein-Friesian herds of Cows, Bulls and Heifers.

October 5, 1920 *HALL BROS.* Owners and Breeders. **October 5, 1920**

Everything high-class and on the square at this sale! Come if you want really high-class Holsteins. Report at the Oxford Hotel near the Union Depot for information regarding how to get to the farm.

T. B. Regulations same as prevailed at National Sale at St. Paul last June.

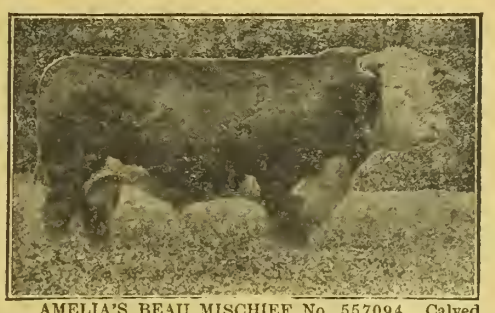
CATALOGUES READY!
LUNCH AT NOON!
SALE 9 o'CLOCK SHARP!

CARLOS W. HALL, in charge of Sale.
W. H. MOTT, Herington, Kas., Assistant.
COL. G. M. BANKS, Denver, Colo. Auctioneer

Campion's Majestic Sunbeam and Beau Mischief Herefords

MAJESTIC SUNBEAM No. 364681. Calved February 25, 1911. Sire—Majestic the 24th No. 293221. Dam—Armour Sunbeam No. 85081. Majestic Sunbeam, grandson Imp. Majestic, one of the best and biggest boned Hereford bulls ever imported to this country.

BRUMMEL MAJESTIC No. 628435. Calved March 20, 1917. Sire—Majestic Sunbeam No. 364681. Dam—Don Amelia 2nd No. 135871. 56¼ per cent Anxiety, 31¼ per cent Imp. North Pole, Lord Wilton Grove the Third. 12½ per cent Imp. Majestic.



AMELIA'S BEAU MISCHIEF No. 557094. Calved April 27, 1916. Sire—Beau Mischief the 15th. Dam—Don Amelia 2nd No. 135871. Ninety per cent Anxiety blood. Secretary Kinzer says its almost impossible to write a better pedigree.

Sunbeam Farm,
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I Wish to Announce

To the public that I have formed a partnership with Col. Ord L. Leachman, formerly of California, who is well posted on pedigrees and has made a specialty of purebred sales, having handled 60 per cent of all purebred sales held in California last year. And we have opened an office at 207 Live Stock Exchange Building, Union Stock Yards, Denver, and are now ready to handle your auction sales. As to my ability I refer you to anyone for whom I have worked in the past twenty years in Colorado. Call us by phone or write us for dates. Be satisfied, as we can satisfy you.

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Union Stock Yards, Denver
Phone York 7933W.

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Denver, 1919.
Have for sale 20 Heifers, 10 to 15 months old.
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We have a few splendid bull calves, most of them by the great Majesty's Feather Lad; and we need the room, so prices are right. Out of Duroc boars, but have a couple of bred gilts to go.

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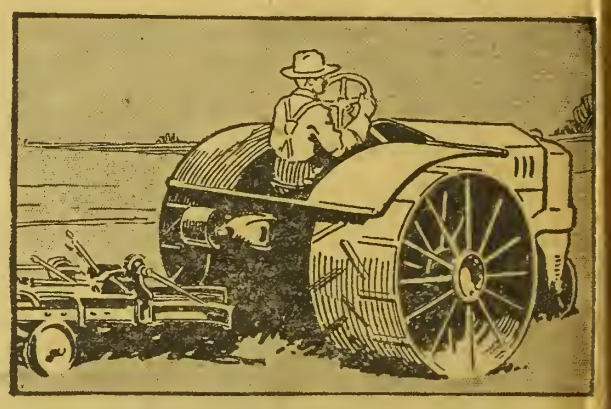
"I have been on the farm since leaving your school, but training has helped me very much. It has saved me much time and money and helped me overhaul my own cars, tractors and gas engines. I think your training is of great value to a farmer, especially the up-to-date farmer who may have an auto, tractor, truck, or gas or electric motor."

Another student, Emanuel Trautman, writes: "I am glad I took the training in your school for it sure helped me in lots of ways. I have been foreman of four different shops, but now I am tractor farming. I have two tractors—one a Flour City and the other a Waterloo Boy. I have a car or two to overhaul every rainy day, which makes me good money besides farming. I work at such jobs when I am not needed in the field, and have to turn down three-fourths of the work which comes to me because I don't have time for it. I thank you for your splendid treatment of me."



Driving a Tractor or Truck — Thousands of new Tractors or Trucks are being purchased, many of them by men who must hire some one to drive and care for them. They are expensive machines and owners can't afford to trust them to inexperienced operators. It pays to hire trained mechanical experts and pay them good salaries. We have many calls for men to fill such positions.

Good Jobs Everywhere at Good Salaries, If You Want One

If you decide you don't want to stay on the farm, a few weeks at the Lincoln Auto & Tractor School fits you to take a good job anywhere, at a good salary.

There is no trade, no profession, no business, in which you can so quickly equip yourself to earn a large income as in that of Automotive Expert.

Read what these young men say—all graduates of this school:

Arthur W. Stiller, Oklahoma City, Okla., wrote: "I am driving a truck for Swift & Company. I am proud of my Lincoln schooling."

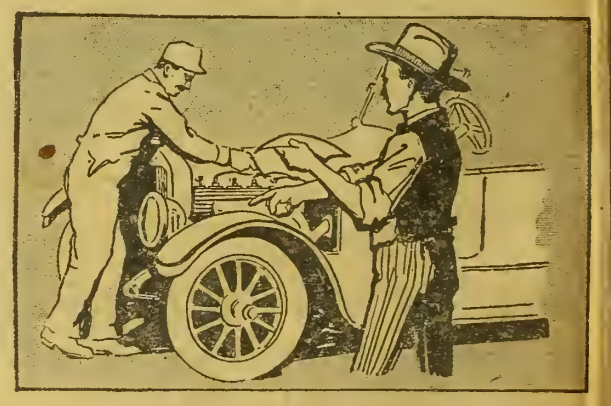
Ralph Moore, Aurora, Neb., wrote: "I was in your school six weeks. Am working for the Hampton Auto Co., Hampton, Neb., and doing fine."

Chas. F. Klug, Oak Harbor, Ohio, wrote: "After finishing your course, I started repairing army trucks at the Erie Proving Grounds. Started as auto mechanic helper and after a few weeks was promoted to first class mechanic. Getting $39 per week now and expect to get into the civil service commission soon. When I left the school I said I was going to Boss the Job, and I am. Have a few auto mechanic helpers under me now that have had more experience than I. I'll say your school helped me."

Gustav Potthoff, Bancroft, Iowa, wrote: "The week after graduating from your school I got a job at the Lincoln Oldsmobile Co., but soon after came to the Brancroft Auto Co. Get $35 a week and a stall for my car. The Bancroft has the Ford Service and I do nearly all the overhauling, motor and transmission work."

Wm. E. Cochran, Ft. Morgan, Colo., wrote: It is just four years since I graduated. I had no difficulty in stepping into a good paying position and worked as garage mechanic for two years. Since that time I have been Service Manager of the largest garage in Fort. Morgan."

Floyd A. Cady, Shawnee, Wyo., wrote: "Your course of training more than doubled my wages and I have no trouble in finding a job. A man could spend years at practical automobile and tractor work and not learn as much as you teach in eight weeks.



Repair Expert or Garage Manager — The big Garages and Service Stations absolutely must have high grade trained mechanics. Much of the actual work can be done by ordinary mechanics, if there is some trained mechanic in charge to superintend the jobs and tell the workmen what to do. We train you to hold these Expert Mechanic or Manager jobs. They always pay good salaries for such men.

GO INTO BUSINESS FOR YOURSELF

Just as these Lincoln Students Have Done

If you don't want to work on the farm, or work for someone else, we train you to start an Auto, Tractor or Truck Agency and Repair Shop. There are good openings everywhere for young men who know their business.

The money that can be made by the selling and repair of Automobiles, Tractors and Trucks is so big that it sounds almost unbelievable. Right now is a wonderful time to start such a business.

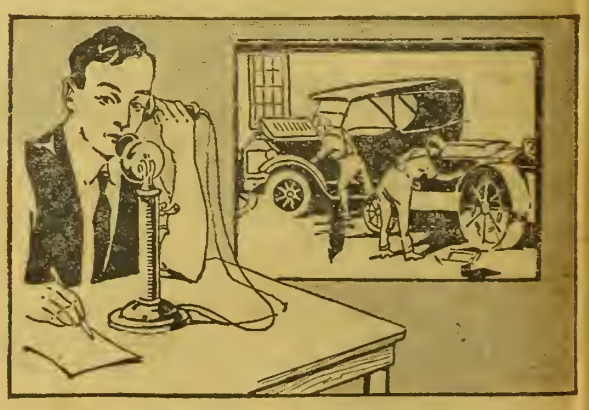
Thousands of towns are not yet supplied with proper local establishments to care for this business. Millions of automobiles are in use, and enormous numbers of tractors and trucks are being sold to people who do not understand how to properly care for them. Tractors and trucks cost too much money for their operation and repair to be entrusted to inexperienced men. Get started and you can clean up a nice fortune in the next five years. Read what these Lincoln Auto & Tractor School graduates say:

Harve Tucker, Redington, Neb., wrote: "I am earning more than twice as much money as I could have done without this training, and am just now starting a garage of my own in Myton, Utah. I heartily recommend the Lincoln school to ex-service men."

Tony Everwien, Tea, S. D., wrote: "The Lincoln Auto & Tractor School is the best I have ever attended. My brother and I are going to build a garage, 50 x 60 feet."

Thomas Wickham, Rawlins, Wyo., wrote: "The training I received at your school has made more money for me than all my other schooling. My brother and I are going to start a garage for ourselves."

Walter C. Brandt, Garland, Neb., wrote: "As soon as I got out of your school I went to work in a garage and sure do like the work for at your school a person gets a very clear understanding of the actual work. Now I have got a garage of my own and sure think it is easy after a person gets a clear understanding from the beginning. I think your school is the very best."



Start a Business of Your Own—When you finish this course you're competent to run an Auto, Tractor and Truck Agency and Repair Station of your own. Many of our students have started in business for themselves after leaving school and are doing fine.

Every Father Should Send His Son

One of the best things you can do for that boy of yours is to send him here to take this mechanical training. It gives him something that he can't spend or dissipate, and that will take care of him and his family if he ever needs it.

If you have an automobile, truck, tractor or engine, it will be easily worth the cost in one year, by the better condition in which he will keep your machinery and the repair bills he will save you.

Personal Instruction by Shop Experts

The Lincoln Auto & Tractor School teaches you by actual shop practice under the guidance of experts. We teach you everything—automobile, tractor, truck, stationary engine, electric farm lighting plant, electric starter, acetylene welding. It makes no difference how little you know to start, in a few weeks you can become an expert. **We not only teach you how to do the work yourself,** but we equip you to superintend the big jobs—fitting you to be a Mechanical Executive. Our classes are small and you learn by individual instruction. Lincoln is an ideal city in which to learn—just the right size, with expenses much less than in large cities.

LIVE UP TO EVERY STATEMENT

Geo. Carlson, Blair, Neb., one of our graduates writes:

"The Lincoln Auto & Tractor School is a wonderful institution. In fact it is hard to realize the great opportunity that this school affords in a period of 8 weeks. The experience and knowledge gained is of great value to any one. The method of instruction used at the Lincoln Auto & Tractor School is different and makes the work interesting and especially easy to understand. I can say that the men in charge of the school live up to every statement they make and every student will be given a square deal."

Remember the big jobs today are in the field of Motor Mechanics and the $10,000 a year jobs of tomorrow are within the reach of the motor experts of today. You can't make a mistake in learning this fascinating and profitable business. Better get started at once.

The man who hesitates loses out. It's the man who decides and acts that wins. Fill out and send the coupon for Book of Information.

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Gentlemen: I want to know how you make men independent for life. Send me the book. Am really interested.

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Lincoln Auto & Tractor School

"The School that Teaches You to Boss the Job"

2423 O Street, Lincoln, Neb.

(17)

IN

WESTERN Farm Life

Vol. XXII. *Denver, Colorado, September 15, 1920.* *Semi-Monthly*

FATHER SAYS: A STITCH IN TIME SAVES BUYING A NEW BRIDLE.

Firestone

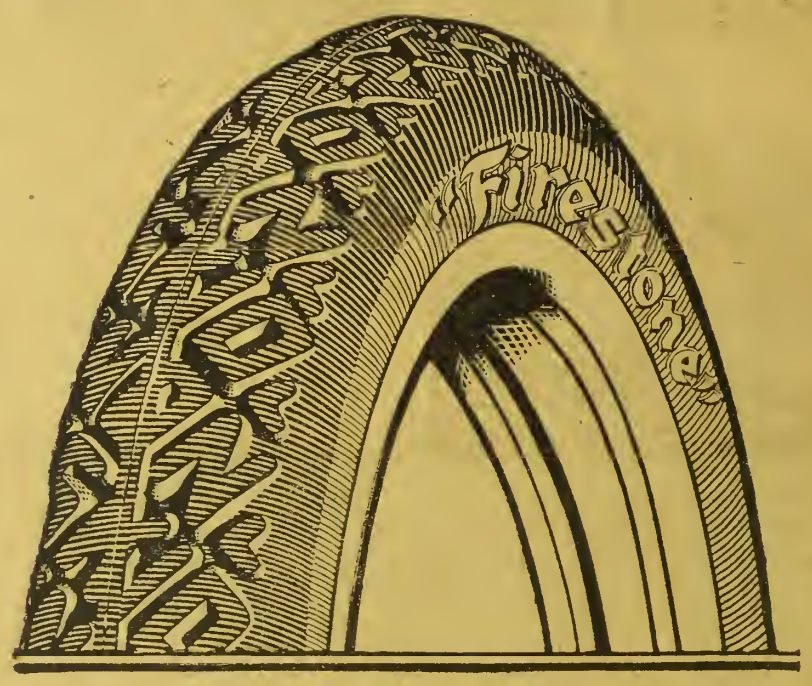
EXTRAVAGANCE has gone by the board. Thrift is in the air. Men are buying where the value is.

The Firestone thrifty 3½ is leading the small-tire field today. Because it is built on real thrift methods from start to finish.

Firestone experts on the spot in the raw material markets of the world are able to get first choice of quality at quantity purchase prices.

Firestone men have worked out the way to produce this tire by concentrated methods —no waste material, no waste motion, no waste space.

And Firestone volume output, through thousands of dealers, permits selling at a close margin. The user gets the benefit. Try this Firestone thrifty 3½.

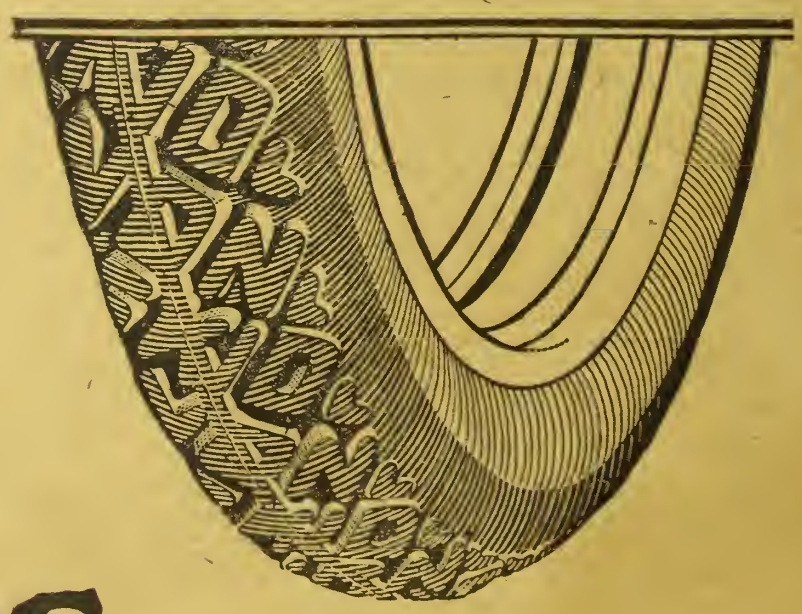


30x3½

(non skid)

$22.50

Gray Tube $3.75
Red Tube $4.50



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Largest Circulation of Any Farm Magazine in the West

WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Published Semi-Monthly by The Farm Life Publishing Co., Denver, Colo. 1518 Court Place.

Entered at the Denver Postoffice as Second Class Matter

VOLUME XXII. DENVER, COLORADO, SEPTEMBER 15, 1920. Number 18.

Beet Top Silage Cuts Cost of Meat Production

TRENCH SILOS ARE ECONOMICAL AND EASY TO CONSTRUCT

BEET tops preserved in trench silos provide a profitable feed and an economical method of handling this important by-product of the sugar industry. A recent government bulletin by James W. Jones, Agriculturist in Sugar Plant Investigations for the U. S. Department of Agriculture, declares that siloing has been found the most profitable practice of handling the tops. It is pointed out that silage stimulates the appetite of the animals and causes them to eat a larger volume of feed than they would consume otherwise. When fed with alfalfa or some other legume and supplemented with grain, siloed tops form practically a balanced ration.

The accumulated salts found in the crowns of the beet constitute the chief reason for cutting it off and leaving it on the field instead of shipping it to the factory. These salts seriously interfere with crystallization in the recovery of sugar. The salts, however, are not deleterious in feeding, although they have a cathartic property and may cause scours. This cathartic property is largely corrected in the fermentation process in the silo. The bulletin points out that a study of sheep or cattle in the feed lot where beet top silage is properly fed shows no unusual number of cases of scouring.

While beet tops may be kept in a perpendicular silo or in the ordinary pit silo, it is not necessary to use this expensive type of preservation. The usual practice now followed is to dig a trench with a team and scraper, making the dimensions in accordance with the quantity of the material that is to be siloed. Long, deep pits are preferred to the broad, shallow type. The trench is made so that the team and wagon can be driven through the silo from end to end with a gradual incline at both ends to facilitate entering and leaving.

As in making any other silage, packing is essential. In some instances beet growers drive a tractor over the tops in the silo. This packs the mass thoroughly. Sometimes a boy on a horse riding repeatedly over the tops serves the purpose.

After the mass of tops has been well packed and the silo is ready to be closed provision must be made to seal it as nearly air tight as possible. Fine, chaffy straw spread over the top to a depth of 8 or 10 inches is effective. Sometimes a thin layer of straw is spread with 8 to 12 inches of earth on top of the straw. Another method is to seal by covering with beet pulp to a depth of a foot or more. Some feeders have found it beneficial to store their pulp by piling it on top of the siloed tops. The fermenting of the beet tops generates a gaseous heat which aids in ripening the pulp and improving its feeding qualities. This also keeps the pulp from freezing in cold weather.

In taking out the ensiled tops a hay knife is commonly used, which will cut the cured silage. The operation is performed in the same manner as cutting through a rick of hay. The period for proper fermentation of the silage is four to six weeks.

The bulletin calls attention to the importance of gathering the tops and crowns free from dirt; shaking with an ordinary fork is advised while the tops are still fresh. They are placed in small piles and can remain in the field for two weeks without danger of heating, unless the piles are made too large. A flat top rack on a low wheeled wagon or an ordinary dump type of beet rack is the usual and convenient way for hauling the tops from the field to the silo.

While many farmers drive their loads through the silo for dumping and scattering, this practice is not quite so good as to drive the wagon alongside the silo and forking off the tops into the silo. In the latter way much less dirt will get in. Even spreading will facilitate regular settling of the silage. Five pounds of salt spread with each ton of green tops improves the quality of the silage. In some sections the practice is to spread straw with alternate layers of beet top, but there is little to recommend this unless the tops are put in while still quite fresh.

It is, however, advisable to put a layer of straw on the bottom and sides of the trench silo, which aids in eliminating dirt from the silage.

The bulletin continues as follows with examples showing profitable use made of beet top silage:

Profitable Gains Reported.

A sugar company in Colorado owns and operates several thousand acres of land tributary to its sugar factories, feeding regularly several thousand head of cattle. One lot of 135 steers made an average gain of 2.3 pounds per head daily in a period of 115 days, counting the shrinkage in buying on the Denver market and on the outshipment to the Kansas City market. This company found the following ration per steer per day to be good: 25 pounds of beet top silage, 60 pounds of beet pulp, 10 pounds of alfalfa hay, 4 pounds of beet molasses, and 3 pounds of cottonseed cake. Accurate records of the operations showed a labor cost of 70 cents per ton for hauling the tops and filling the silo. This company calculates that cured silage was produced at the rate of 35 per cent of the weight of the marketed beets and that a heavy crop of beets will yield from 5 to 6 tons of silage per acre of beets. A 10-ton crop of beets has yielded 3½ tons of cured silage per acre. In estimating siloing capacity (the earth silo type) about 38 cubic feet for each ton of beet tops is calculated, allowing a settling of 12 inches for a well-packed silo 5 feet in depth. The following analysis of beet top silage, comparing it with the standard analysis of corn silage, was made at the company's laboratory:

Comparative Analyses of Beet-Top and Corn Ensilage.

Constituents—	Beet-top silage*	Corn silage†
Moisture	64.36	68.50
‡Ash	9.25	1.51
Crude Protein	2.87	3.12
Crude fat	.44	.80
Crude fiber	5.46	6.53
Nitrogen-free extract	17.62	20.54

*It is possible that silage produced from beet tops grown in other localities might show a higher or a lower feeding value.

†The analysis here given for corn silage is considerably higher than the generally accepted standard analysis for this product.

‡Dirt gathered with the tops makes a high ash content.

Nearly Equal to Alfalfa.

A firm of extensive feeders in the northern Colorado district, after an experience of several years, say:

"We believe one ton of tops properly siloed is worth almost, if not altogether, as much as a ton of alfalfa hay for feeding to cattle. Any farmer, regardless of the size of his beet field, can cheaply make a pit, save all of his tops, and feed them at any time, as there is no limit to the time that they will keep. We have been very successful in getting good gains on our cattle since we started feeding them in this way."

The average beet grower concludes that two tons of good beet-top silage is worth one ton of good alfalfa hay. Very few men who have fed the silage think that it has a value less than 50 per cent of the value of hay. Those who consider the value as great as the estimate above quoted probably reach conclusions that are not entirely based upon the intrinsic value of the silage. There are two collateral values in the silage that are not shown in the laboratory analyses, namely, (1) the succulent character of the feed, which stimulates an appetite in the animals and causes them to consume greater quantities than where dry, cured feeds only are used; and (2) the beet-top silage when fed with alfalfa hay helps to balance the ration and causes the animal to utilize better all the feed consumed.

Extensive Feeding Tests.

A firm of extensive beet growers in Idaho feeds several thousand sheep and grows from 75 to 150 acres of beets each year. For two successive seasons they have made and fed about 500 tons of beet-top silage. They recently made the following statement:

"We did not keep check on all of our feeding all winter, but we weighed the feed to some of the herds of sheep long enough to satisfy ourselves that a ton of beet-top silage is worth as much as a ton of hay. We have also proved to our own satisfaction that beet-top silage for fattening sheep and cattle is cheaper and will fatten quicker than grain or corn. We think that the tops, if gathered immediately after being cut off, will weigh half as much as the beets."

It should be noted that the above statement is based upon observation rather than upon actual test by weight, but it shows what value the growers place upon beet-top silage ued as a stock feed. The growers referred to above find that by feeding three pounds of beet-top silage per head per day they can reduce the hay requirements for sheep more than half.

After an experience of two seasons with beet-top silage a successful Idaho feeder offers the following suggestions:

"The beets should be topped from windrows or piles and the tops gathered immediately, free from dirt, and placed in small piles or hauled directly to the silo. Pack firmly in the silo. If the silo is located on sandy soil, build a concrete retaining wall for each side. It is important to eliminate the dirt. Three pounds of beet-top silage per head per day were fed for a period of forty days to 800 head of sheep, about one-half ewes and one-half lambs, which made a gain of 4 pounds per head more than sheep of like quality that were fed entirely on beet pulp and hay. The silage comes out warm, even in mid-winter, and is greatly relished by the sheep."

This feeder made 125 tons of silage from 25 acres of beets. It cost him about $1 per ton to gather and silo the tops.

As against the very few adverse experiences which have been reported, the following statement taken from the Farm Bureau News, the official organ of the Sevier County (Utah) Farm Bureau, is offered:

"Without an exception, every man who siloed beet tops last year reports excellent results and savings from the feed that it furnished. Most of the farmers reporting rate the value of the silage at about two tons of silage equal to one ton of the best alfalfa hay. One or two men say that it is nearly equal in feeding value to alfalfa hay."

In the Weber County (Utah) Farm Bureau News, Mr. James G. Widdison, Jr., says:

"About the first of January I opened the silo and found that the tops had kept perfectly. The cows relished them as much as they did the fresh tops, and they did much better when fed only a limited amount than when allowed to run at will on the tops in the field. The milk produced was also of good quality and had no disagreeable flavor that is sometimes complained of when cows are fed beet pulp. I have no accurate information as to feed value in pounds, but would say that a ton a week fed to six cows would enable them to do nicely on the hay that one cow would eat if fed hay only. I find it also a convenient and valuable feed for pigs."

Wild Sunflowers Poor Silage.

Wild sunflowers, fed alone, are not a good silage crop, according to J. B. Fitch of the dairy department of the Kansas State Agricultural College.

Last fall a stand of wild sunflowers yielding four tons an acre was found within hauling distance of the college. About ten tons were put into a silo between layers of corn silage.

A feeding trial was arranged, in which five cows were fed wild sunflower silage, alfalfa hay and a grain mixture consisting of four parts of corn chop, two parts bran and one part oil meal. The cows had previously received corn silage in addition to the hay and grain. When changed to the sunflower silage they ate very sparingly of it from the start and did not become accustomed to it, as we had expected. The cows decreased in milk production and lost in body weight. At the beginning of the experiment the cows averaged 1,108 pounds in weight and were producing on an average of 12.1 pounds of milk each. After a 24-day trial the cows averaged 1,042 pounds in body weight and were producing 8.7 pounds of milk each. This is a loss of 66 pounds per head in body weight and a decrease of 3.4 pounds of milk daily. In the absence of corn silage the cows were changed to cane silage, and in the same period of time gained 25 pounds per head, and all but one cow increased in milk production. One cow's production had declined so low that it failed to return with the change of feed.

"As the result of this feeding trial we have not considered wild sunflowers, fed alone, a satisfactory crop for silage," Mr. Fitch says. "We are not interested in wild sunflowers for silage when other crops can be raised for silage, but in many sections of the state wild sunflowers are abundant when other crops fail, and if they can be made into a food for cattle by putting them into a silo, many of our farmers in Kansas and other states of the southwest will be greatly benefited."

The above confirms the experience of farmers in the mountain states who made similar trials. It does not pay to fool with wild sunflowers. Russian sunflowers are a different matter; these make an excellent silage crop in higher altitudes where corn is not a safe crop. —Editor.

How Hall Brothers Built Up Their Holstein Herd

FOUNDATION TRACES TO FOREMOST ANIMALS OF BLACK AND WHITE

H. A. LINDGREN.

Dutchland Hengerveld Ascalon, Colorado's greatest dairy cow, dam of Western Ascalon.

IT is always of interest to dairymen to learn of the old established herds and what they have meant to the particular breed in the state. Hall Bros. of the Western Holstein Farms, five and one-half miles from Denver on the Morrison road, are well known to western dairymen. Situated as it is in an irrigated section near market the farm has proven a very profitable business under the management of Carlos and Storrs Hall.

The farm consists of 147 acres of high class land. A careful rotation system is carried on, in which it is the aim to keep about 80 acres in alfalfa. The remainder is sown to small grains and corn for ensilage. Twenty years ago the brothers purchased this property and established the dairy herd of grade cows with very little capital. The business grew and prospered until they realized that Colorado's advantages as a dairy state offered a good market for registered breeding stock. So they set out in 1908 to purchase their first registered Holstein bull. Having used grade Holsteins naturally they inclined toward that breed. They purchased at that time Sir Colantha Lass 45670, from W. J. Gilbert of Wisconsin. His dam was Colantha's 4th Lass, who was also the dam of the world record cow at that time, Colantha 4th Johanna. The grandsire of Sir Colantha's Lass, sire of Colantha 4th, was grand champion at the St. Louis exposition. The sire of this bull was Sir Fayne Concordia.

Sir Colantha Lass not only traced to the best blood lines of the day but was also a great show bull. He was grand champion bull in Colorado for several years and in 1910 was shown at the National Dairy Show, winning second in the 3-year-old class. One of the big things in his pedigree is the fact that he sired the heifer Western Ascalon, who brought $5,500 in the Colorado consignment to the National sale in St. Paul last June. This bull is the foundation breeding of the herd.

The first registered cows were brought into the herd in 1909, one year after the purchase of the bull. In buying these animals good breeding and type were carefully considered. Among the cows that have proven themselves in this herd are Day Beauty's 4th, purchased from M. E. Penrose of Denver, who was the state fair winner in milk and butter and economy test at Pueblo in 1914. Another cow well known to all the Holstein breeders is Dutchland Hengerveld Ascalon 120775, a wonderful producer with a record of 1,263 pounds of butter from 26,485 pounds of milk in a year. This cow has produced calves that have brought close to $10,000. She is still hale and hearty and is now on the farm and will drop a calf the coming winter. She is the dam of the $5,500 heifer Western Ascalon, who herself produced 15,000 pounds of milk in six months and was grand champion at the National Western stock show in 1917. Another calf from the cow is now herd sire on the farm of C. W. Curtis & Sons of Sedalia, Colo. This bull, Western Sir Koopman, is a persistent winner at shows, being twice grand champion and four times junior and reserve champion.

Western Ascalon Colantha Boy 116247, another son of the Dutchland Hengerveld Ascalon, was used as a sire in the Hall Bros.' herd for some time. He also was a typy individual and gave a good account of himself in the show ring. He recently died, much to the loss of the firm.

The foundation in this herd is bred closely along the same lines being linked with the breeding represented in Sarcastic Lad and the breeding of Dutchland Hengerveld Ascalon, who traces to Pontiac Korndyke and Hengerveld De Kol. Hall Bros. have done considerable testing work and many of their cows have A. R. O. records.

One of the especially attractive animals on the farm is a 10 months old bull out of the $5,500 heifer Western Ascalon. He is of exceptional conformation and carries the best of prize winning ancestry. His immediate ancestry have won six championships in the show ring. This bull, bred in the purple, will be one of the offerings in the sale. He has the right to a berth as herd sire in any herd in the country.

This old established partnership is soon to be dissolved and the herd will be sold at auction on October 5. It is to be regretted that a manufacturing plant of high class Holsteins is to be broken up. However, it affords an opportunity for other breeders to get animals that will help them to improve their own herds.

Carlos Hall, the senior member of the firm, stated that the business has been a success and that money has been made from it, considering it from the beginning. This success has been due largely to the persistent effort, close attention to the details of the business and careful selection of the herd. Close co-operation between the brothers has had much to do with it. And the brothers have not been alone in making the business win, as their wives have always been on the job keeping up their end and adding encouragement as only women can do.

It requires a great deal of labor to keep this farm going. During the time of the visit to the farm there were twenty people employed. Hay was being stored in the gigantic barn on the place. This building is 160 feet long and 60 feet wide. The hay is stored inside which does away with a great deal of labor of handling during the winter months. They are good feeders and the

Sir Colantha Lass, sire of Western Ascalon, and himself grand champion for ten years.

cows show the result of good care. Silage and hay, together with grain, composes their ration for the milking cows. The calves are given free run to a feeding rack in which hay is kept stored at all times. They are hardy and show good growth for their ages.

This enterprise shows what can be done in the dairy business. Starting as they did with a herd of grade cows some forty in number, they sold milk to the Denver city trade. At first their product was handled direct to the consumer. They gradually worked into a plan of a distributing agency through which they are still working.

Carlos Hall states that there has never been a bull castrated on the farm but that all have been good enough to be sold as breeding stock. The prices received have been very satisfactory.

Some three years ago Hall Bros. disposed of all of their grades and since then their time has been given exclusively to the raising of registered stock. Their sale at that time was one of the best held in the west; they disposed of 113 head of grades at an average of $227. The conditions in Colorado are very favorable to the carrying on of the dairy business. The feeds grown are such as are suitable for the production of milk. These feeds together with good cows makes the business one of the surest of any of our agricultural industries. The sale on this farm will offer an excellent opportunity for dairymen and breeders of getting the quality of cows that will make good.

Dairying Pays With Good Cows and Proper Feed

LESSONS DEVELOPED IN STUDY OF MILK PRODUCTION COSTS

H. A. LINDGREN.

PROF. F. A. Pearson of the Dairy Husbandry Department, University of Illinois, prepared some interesting data which was presented in an article in the May Journal of Dairy Science. The figures contained in this report have been gathered from eighteen farms. It shows the variation in the cost of milk production by months and while the costs may not be the same with our present feed prices it, nevertheless, brings out some interesting facts in comparison of one month with another.

The cow cost of milk production involves only the maintenance of the bulls and milking stock. The cost of rearing the young calves is not included. The data presented involves 408 cows and 19 bulls. The cows produced 2,806,277 pounds of milk at a net cost of $48,479.67, or $1.73 per hundredweight. The winter cost of producing this milk was $1.98 per hundredweight and the summer cost $1.40. The money cost varied from $1.15 per hundredweight in June and $2.08 in December and February. For the herds under these conditions the feed cost per hundredweight of milk varied from 40 cents in June to $1.41 in December. The average for the year was $1.05. The expense of man labor per hundredweight of milk produced varied from 28.9 cents in June to 41 cents in December, or an average of 36.3 cents for the year. During the winter six months an average of 11.7 hours per day of man labor was spent on each herd, while in the summer months the average was 7.9 hours.

The cause for the difference in cost of milk production between winter and summer feeding is that grass is one of our most efficient milk producing feeds. Many of our most successful dairymen are making use of pastures on their farm. The irrigated pastures in Colorado, Utah, Idaho and elsewhere, have shown that it is possible to maintain from one to two cows per acre without any additional feed, except for the cows that are producing very heavily. For the winter feeding we are finding that silage reduces the cost of production very materially. Silage, of course, assists in maintaining the summer pasture conditions during the winter months.

We are hearing considerable complaint from dairymen all over the west that their cows are not paying them as well as they should. This is due probably to several causes, the main ones being the class of cows used and the kind of feeds available. We know definitely that certain cows are more efficient in producing milk than others. The U. S. Department of Agriculture and the county agriculturists have been attempting to improve through the cow testing associations and other methods the class of cows kept on the farm. They have succeeded very well. However, we still find many cows in the herds that are not producing as economically as they should. It is not always possible to go out and buy the higher producing cows, so that it becomes necessary for our dairymen to select the very best bulls possible and develop their own stock by selecting a bull of the right caliber. That is, one that has sired daughters that are known to be good producers, should be the kind of bulls used for development. One mistake it would seem that is being made by many dairymen who are attempting to raise high priced registered animals is that they are trying to base the cost of production on the original investment. This probably is fair in a way, but on the other hand where one is developing registered animals he should look for a part of the profit, at least, from the sale of registered breeding stock.

Reports coming from localities where pasture is used exclusively show that a very substantial profit is being made from the dairy business. Closer to the cities, however, where the farm acreage is small, there is very little chance for pasture land and the feeds used are necessarily very much more expensive. In order to make the most success in dairying at this time dairymen should make it a point to develop pastures on their own farms where possible. The argument that pasturing does not pay on high priced land is not applicable under every circumstance.

An Idaho dairyman found, a few years back, with butterfat selling at 30 to 32 cents per pound, that an acre of irrigated pasture produced $110 worth of butterfat during the pasture season. What other crop could you grow that would show a better net return when labor and other expenses are taken into consideration?

This is not a time to discontinue the use of the dairy cow. She has always proven profitable and will continue to do so over a period of years where the proper management is given. Prof. Morton declares that no money is to be made going in and out of the business every time the odds are against us, but that the man who wins is the one who stays with it year in and year out. In conclusion it is safe to say that dairying is still profitable if the best cows are kept and proper feeding system established on the farm.

A Study of Costs.

A two-year study of the cost of milk production undertaken co-operatively by the United States Dairy Division and Purdue University, on a number of dairy farms in northwestern Indiana, has resulted in figures on the requirements for producing 100 pounds of milk in winter and in summer. To give permanent value to the results, these requirements were determined in pounds of feed, hours of labor, etc., and by substituting present costs and values for the various items a farmer can determine very closely what it is costing him to produce 100 pounds of milk at the present time.

In the summer months the requirements for 100 pounds of milk were as follows: Concentrates, 20 pounds; dry roughage, 27.4 pounds; silage and other succulent roughage, 60.1 pounds; hauling and grinding concentrates, $0.014; pasture, 0.04 acre; human labor, 2.2 hours; horse labor, 0.2 hour; overhead and other costs, $0.393.

In the winter months the requirements for production were: Concentrates, 38.6 pounds; dry roughage, 66.8 pounds; silage and other succulent roughage, 147.6 pounds; hauling and grinding concentrates. $0.03; bedding, 20.3 pounds; human labor, 2.5 hours; horse labor, 0.3 hour; overhead and other costs, $0.385.

It has been generally believed that the cost of producing milk was considerably higher in winter than in summer; and while this holds true as far as the gross cost is concerned, the figures obtained in this investigation show that the net cost of producing 100 pounds of milk from November to April was only 1.8 per cent higher than the cost from May to October, inclusive, and that the total cost varied only slightly from month to month within each of these seasons. This small difference between net costs of production during winter and summer is largely due to the greater credit allowed for manure during the winter season.

The price received for the milk, however, fluctuated sharply from month to month.

Did you ever think of adopting some little trees?

Economy of Auto Truck Demonstrated to Farmers

GRAIN, COAL AND LUMBER HAULED IN "SHOW ME" TRUCK TRIP

ON the theory that "seeing is believing," the farm development tour recently completed by a caravan of twenty Denver motor trucks under the auspices of the Rocky Mountain Auto Trades Association was a great success. Field demonstrations before the eyes of farmers showing what motor trucks can do did more to convince than volumes of written appeal. Eleven agricultural counties of northeastern Colorado were included in the itinerary and eighteen farming communities were visited. The purpose was to carry the message of farm motorization to the wheat and corn grower in his harvest fields and to the livestock raiser on his own ranch. The convoy of pneumatic tired trucks left Denver August 9 in charge of S. E. Norton, who was train commander. The scheduled run was for a tour of 700 miles, but the actual mileage, including the demonstration work, was in excess of 1,500.

Every type of farm hauling was done. Livestock, lumber, coal, barley, wheat, rye, oats, potatoes, cement, shingles, kerosene and other miscellaneous commodities were hauled between farms and shipping points along the Burlington, Rock Island and Union Pacific railroads. Threading their way through plowed fields with the ease of an 8-cylinder sedan on a city boulevard, the sturdy trucks of the motorcade moved grain from thresher and combine to bins and elevators miles distant, generally performing in from one to three hours what would constitute a heavy day's work for the farmer's best team. In many cases the loads transported by a pair of these trucks in a few hours over long distances would have kept all of the farmer's horse equipment busy for several days.

Considering these facts it is not surprising to learn that nearly fifty trucks have been sold in the tour towns since the visit of the caravan.

In analyzing the figures representing the weights of various products carried by the trucks on their demonstration trips, one must take into consideration the fact that except in few towns the caravan had only a few hours in which work of this type could be done, as the daily journey of the entire train was frequently more than 60 miles, thus leaving only a few hours of the afternoon for demonstration trips to farms in the neighborhood of the night stop. Despite this fact the caravan performed 500,000 ton miles of hauling for ranchers, on hauls varying from 5 to 60 miles and over roads ranging from excellent to "rotten." Many tons of farm produce and supplies were hauled for miles through soft plowed fields and across country.

About 150 tons of grain were transported from the harvest field to shipping points, both sacked and in bulk, and more than 25 tons of lumber were delivered from lumber yards in towns along the tour route to farms situated often 30 miles from the nearest railroad point.

Many a farmer was saved days of time and burdensome labor in getting his winter's supply of coal into his farm bins, nearly 50 tons being transported from yards in railroad towns to outlying ranches.

Practically not a single instance was recorded in course of the tour in which a truck carried less than its capacity load on a demonstration trip. On the contrary, overloads—that is to say loads in excess of the rated capacity of the trucks—ranging from 1,000 pounds to one and one-half tons, were carried, and in every case this was done successfully and without injury to the truck.

Nearly 150 demonstration trips were made in and near the eighteen communities reached by the tour, and in view of the fact that in the majority of cases this meant a round trip of 30 miles or more, this must stand as a remarkable record.

The truck dealers and the trucks which represented them in the tour were as follows: Charles Bilz, Commerce; Harrison Motor Co., Autocar; White Motor Company, White; Norton-Buick Company, GMC; Swenson Auto Company, Republic; Martin-Sweet Company, Patriot; W. W. Barnett, Oldsmobile; Southwest Nash Motors Company, Nash; Mountain Motors Company, Packard; Graham-Jones Motor Company, Reo; Troy Trailer Sales Company, Troy Trailers; Paul Jennessee, FWD; Colorado Truck and Transportation Company, Douglas.

"Never in my 21 years in the automobile business," declares S. E. Norton, chairman of the tour committee, "until this present tour has there been held in this section anything that might be called a practical demonstration tour, either of passenger cars or motor trucks. To illustrate the practical results of this tour, it is sufficient to say that the speakers who accompanied us 'sold' the pneumatic tired motor truck as a farm implement to more than 25,000 people in a section of the state where the inhabitants number something like 100,000. In other words, the motorcade proved its ability to attract, interest and convince an audience consisting of 25 per cent of the entire population of the territory visited.

"We not only 'sold' the farmer on the practicability of motorizing his farm, but we were sure at every meeting to have as chairman one of the most prominent bankers in each town, which means more, I think, from a credit standpoint, to this industry than anything accomplished heretofore.

"In the day time motor trucks numbering some fourteen heavy duty trucks hauled in the neighborhood of 50 tons of coal, 150 tons of wheat, barley and bulk grain, 25 tons of lumber, cattle and other livestock. To illustrate, a Mr. Bradley who lives 12 miles out of Hugo, told me that it took him three and one-half days to deliver five tons of coal to his cattle ranch. I picked out one truck with a trailer attached, sent the driver this 12 miles with four tons of coal. The time of loading, delivery and coming back to Hugo was four hours. This in itself will give some idea of how we 'sold' the motor truck in this particular community.

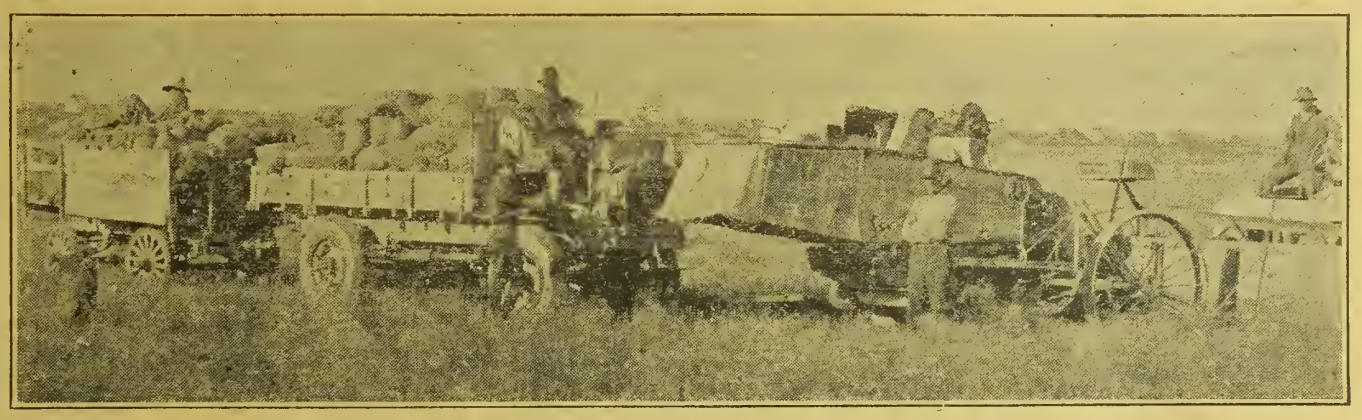
"In Sterling I had five of the trucks directed to different farms in the community to haul wheat from the thresher into the city, carrying about 200 bushels a distance of nine miles, arriving back in Sterling in less than two hours. In Wray I directed five of the heavy duty trucks to one particular ranch seven miles from the city, and they brought back 1,600 bushels of wheat in less than two hours. On the trip from Sterling to Julesburg, a distance of about 65 miles, we carried fourteen tons of groceries and merchandise, delivering it in the intervening towns of Crook, Iliff and Sedgwick.

"Colorado has 42,000 miles of highways and byways. Railroads run east and west with no crossing railroads. The development of this country absolutely depends upon motorization. We can build our own towns any place, anywhere, in this state and absolutely depend upon transportation with motor trucks. We as an industry are doing more towards populating this state than any Chamber of Commerce could do and more than all of the farm development tours that are held by railroads. Owing to our mode of transportation not being on rails, we can go any place, anywhere, at any time.

"I am looking forward to seeing in the next two or three years in this section, where we have plenty of rainfall, of at least 25 per cent increase in population, by furnishing this mode of transportation that we have demonstrated. The motor truck is advancing so fast in transportation that the community at the present cannot keep up with it. Bigger elevators will have to be built in order to take care of the storage of wheat until railroad facilities are adequate to take care of the long haul transportation."

The 18 farming communities east and northeast of Denver visited on the tour were Fort Morgan, Brush, Sterling, Julesburg, Holyoke, Haxtun, Fleming, Akron, Otis, Burdett, Yuma, Eckley, Wray, Burlington, Stratton, Flagler, Hugo and Limon.

Harrison C. Goldsmith, secretary of the Auto Trades Association, and E. S. Foljambe, of the National Farm Development Tours organization, were the official speakers of the caravan.



AUTO TRUCK DEMONSTRATION ON FARM NEAR OTIS, COLO.

One hundred and seventy sacks of wheat (16,600 pounds) are loaded on this truck and trailer. The wheat was loaded directly from the combined harvester-thresher and was carried one-half mile over plowed ground and then one and one-half miles to town. The round trip was made in one hour and fifteen minutes, the work done in that time by the truck being practically a day's work for a team of horses. This photo shows a practical example of farm motorization. The combine which cuts and threshes wheat in one operation, is drawn by a tractor. By following the combine with the auto truck the wheat is hauled to market immediately after threshing.

New Zealand Lamb Deal Explained by Packers

FOREIGN MUTTON ADDS TO BURDEN OF THE SHEEP RAISER

Sheep raisers will find it interesting to read a statement furnished us by the publicity department of Swift & Company concerning the New Zealand frozen lamb deal. Ability of the packer to control the flow of meat to markets in a way to prevent violent fluctuation is given as the reason why Swift entered the market for the imported stuff which has added its burden to the load carried by the sheep business. This novel explanation—or apology—fails to note the fact that the packers, as usual, are losing nothing by the importation of shiploads of lamb carcasses from New Zealand; the loss (again as usual) falls on the American producer.—Editor.

R. S. MATHESON.

NEW ZEALAND slaughters about eight million sheep and lambs annually, mostly lambs, and the bulk of this product, which is always shipped in frozen condition, normally goes to England for consumption. During the war, on account of the interruption of steamship service, caused by war conditions and by the need of using all available boats for troops and munitions, there were no refrigerator boats available to carry lambs and mutton from New Zealand to England or to any other country. The result was an accumulation in New Zealand. The British government purchased the entire output of New Zealand lamb and mutton during the period of the war, and erected freezer storage warehouses to hold this product in New Zealand.

At the close of the war refrigerated vessels again became available and the shipment of frozen lamb and mutton from New Zealand to England was resumed. The British Food Ministry still controls the movement of this stock of New Zealand lamb, including the production of 1920, which was bought by the British government. After boats were available, it naturally moved the product which had been in storage the longest to England first, but with such a large accumulation on hand, there was more than England could consume. This forced the British Food Ministry to find another outlet and as prices were fairly high in the United States it decided to ship the 1920 production of New Zealand lambs and mutton to this country, thus reducing the stock in New Zealand and converting it into cash.

In the spring of 1920 several boats were definitely booked to carry lamb and mutton from New Zealand to the United States; even the names of the boats and the definite dates for sailing were announced.

Swift & Company did not buy any of the first cargoes, except a few scattering lots that we obtained from other dealers after the lambs had arrived in this country. However, since the quality of these New Zealand lambs is so good that there is a demand for them in this country, and since it became apparent that these lambs would continue to come, and be sold in the United States by Canadian packers, and by such concerns as Vestey Brothers (an English concern with branches that have selling connections in this country), or by other English brokers who have selling connections in this country, we decided it would be to the best interest of both the packing industry and the livestock industry to participate in the distribution of this product.

Because of our widespread distributive system and because of our facilities for holding frozen meats, we can spread the distribution of this imported product in such a way as to keep prices from fluctuating as much as they otherwise would. We can market freely when there is a scarcity of a domestic product and we can market in more limited quantities during a period of heavy domestic receipts such as occurs during the "range season." We are also able to distribute this frozen product in different markets, according to changing demands, so that it will have as little effect as possible on the market for domestic lambs, in which we, as well as the sheep raisers, are vitally interested.

(Turn to Page 21.)

Eleven States Meet at the Salt Lake Conference

WOOL, LIVESTOCK AND SUGAR BEETS THE PROBLEMS DISCUSSED

ALVIN T. STEINEL.

WHO are the men that guide and what is the character of the American Farm Bureau Federation? That question was uppermost in the minds of Colorado farmers who gathered in Denver for the session of the executive committee of the Federation August 16 and 17. It was the same question that brought together representatives of eleven state Farm Bureaus at Salt Lake City a few days later. Personal contact with leaders and discussion of local and national problems brought its answer to those who left their farms in the busy time of the hay harvest and grain threshing, to journey, in some cases, hundreds of miles for the purpose of finding out who and what it is that is stirring American agriculture as it has not been stirred in a generation.

Economic upheavals are of not infrequent occurrence. Sometimes these movements have assumed the proportions of a mental prairie fire and this simile has been used to describe them. Urgent demands for economic justice lay at the bottom of each blaze of farmer opinion that has gone out over the country. Spreading the fire there have been leaders who sometimes were impractical idealists, sometimes selfish politicians, and occasionally charatans who sought to use the farmers as dupes, who played upon the emotions and did nothing except to arouse in the farmer a keen sense of his wrongs without providing constructive measures of righting them. The difference between the emotional "prairie fire" movements and the American Farm Bureau Federation is that the latter offers an economically sound program, insisting on the farmer's right to a fair return above cost of production and attempts to bring this about without infringing upon the rights or revenues of any other class.

Colorado, Wyoming, Utah, Idaho, New Mexico, Montana, Washington, Oregon, California, Arizona and Nevada, were represented at the Salt Lake meeting. (An account of the Denver session appeared in the issue of September 1.) In addition to the farmers who came as delegates appointed by the state bureaus there were present at Salt Lake many extension workers connected with the western agricultural colleges. Mr. W. A. Lloyd of the United States Department of Agriculture at Washington, who has charge of county agent work in the western division of states, was present and spoke on the relationship of the extension departments to the farm bureau. A previous speaker had referred to the bureau as "a child of the extension departments," but Mr. Lloyd would admit parenthood only as applied to the community and county farm bureaus. He raised questions as to whether the movement meant a change in extension methods. The attitude of the Federation, as expressed by members of the executive committee both at Denver and Salt Lake, is that of continued close co-operation with the extension departments in all states where the colleges welcome the backing of the farmers.

Discussion in the lobby of the hotel among college men indicated two opinions, but the majority of the county agents and other extension workers are in line with plans of the farmers for expanding farm bureau activities from a purely educational to a force that will bring the power of numbers to bear upon all economic problems. In a few states the colleges are hanging back in the attitude of "let us wait and see whether the farmers can put it over." They shall not have long to wait. Agricultural leadership is just now passing from the Department to the farmers, and while there is no desire to minimize the great service of the workers who have created the farm bureau movement, the child is now standing on its own feet and farmers are guiding it. Men of ability and initiative who have put in years of service with the Department of Agriculture are leaving to assume administrative positions with the farm bureaus, state and national, and they are coming not in the attitude of teachers, but of service men. County agents are everywhere modifying their methods to fit into the general scheme which expects extension departments to co-operate, but not to dominate. A few are trailing along in fear and trembling, wondering what it will lead to and whether the farmers are able to manage their own affairs, but these doubters will soon view the procession of progress only from the distant rear, unless they decide to join the forward march of the farmers.

What Can the Farm Bureau Do for You?

The American Farm Bureau Federation has set out to correct economic injustices for the farmers of the nation. To do this intelligently it is necessary to have detailed examples. The Federation is diagnosing the case of American agriculture before applying remedies in a broad national way, that will prove effective. Western Farm Life is placing its columns at the service of farmers in the west who wish to be heard regarding pending problems, such as the wool situation, transportation matters, car shortage, faulty car distribution, livestock range and feeding problems, fruit and potato marketing problems and the like. It is not our intention to establish a complaint bureau; what we want is information given by letter regarding personal experiences of farmers who have suffered loss and delay by the failure of distribution machinery, or by unfair marketing practices, or rate and handling discriminations. Brief accounts from actual experience, supplemented by helpful suggestions, will add to the store of knowledge that is being gathered on this subject and aid in working out final solutions.

The leaders of the American Farm Bureau Federation are actual farmers who have been facing these problems in their own experience. They come from all regions of America and all classes of farming are represented in the organization. They are, therefore, able to give a sympathetic hearing to the problems of our western farmers and ranchmen, this region being represented on the executive committee by farmers from Colorado, Utah and California. Western Farm Life will forward all letters to the Federation; some undoubtedly will be of sufficient general interest to merit publication. All must be signed by name, and postoffice address must be given. No attention is paid to unsigned communications at any time.

It will not be necessary to air personal feelings, because we all know how you feel about injustices that have been inflicted. The Federation is interested only in causes and methods of correction and therefore welcomes suggestions from any and all farmers. This is a call for help from the best thought of the farmers on these big problems which we are facing during the period of reconstruction after a world war. Big movements are under way in our economic structure; our national and international life is undergoing tremendous changes of which we are as yet hardly conscious. It is a privilege to have a part in shaping conditions in this new world of ours and for agriculture that task is being undertaken by the American Farm Bureau Federation, of which every farmer may become a part.—Editor.

Origin of the Movement.

Dr. Lloyd explained the origin of the Farm Bureau movement in the counties having county agent work. He pointed out that we should not lose sight of the fact that our problems are sociologic as well as economic; that the farm home must be made agreeable to the family if agriculture is to be kept on a permanent basis. In discussing whether the basic relationship between the county Farm Bureaus and extension workers is to be changed, he said he was merely raising the question so that it might be given thought and consideration. He said the Department of Agriculture is favorable to the Farm Bureau idea of taking up marketing problems and not opposed to it in any way. He considered it a legitimate work for extension departments to undertake, but that the county Farm Bureau should be maintained as an overhead organization and not function directly as a commercial marketing organization. On this point he is in agreement with members of the executive committee. Such marketing machinery as is being created is of the overhead type. Buying and selling is left to distinct organizations of farmer groups and is not directly the business of a Farm Bureau.

Dr. Lloyd stated that the idea in the west has been quality rather than numbers, and that Farm Bureaus hitherto had been composed largely of leaders in the industry, who function in the way of a city club. Such organizations had become a powerful factor in handling agricultural problems, had served their purpose well and he was now raising the question whether that plan should be continued, or whether the policy of extending membership to include the mass should be adopted. The question was not answered on the floor, but the feeling at the conference was that the time is ripe for pushing membership to include every farmer who is inclined to take advantage of the power of organization in solving agricultural problems on a national scale.

Grain Marketing Plans.

One of the projects under consideration by the American Farm Bureau Federation is the establishment of an overhead marketing organization for wheat, corn and other grains. In line with the policy of the Federation no important steps are taken until after careful investigation of all details. There is now in process of formation a committee of seventeen, representing the leading farmers' organizations of America. The committee is to work out a plan for a grain marketing organization. Preliminary to their work the Federation sent a delegation from the mid-western states to the Pacific coast to secure data concerning co-operative marketing associations, not only of grain, but of fruits and other products. Mr. W. G. Eckhardt, who is director of the grain marketing department of the Illinois Agricultural Association, headed the survey committee and attended the conferences held in Denver and Salt Lake City.

Two fundamental propositions have been agreed on, namely, that the farmers should own their local elevators and that they need an overhead organization that will merchandise their grain, determine upon a just price, care for any surplus produced, create an even, steady flow of grain to the markets, secure the lowest possible transportation charge and prevent back shipments. These propositions are being kept in mind by the survey committee in their inquiry and this is the foundation upon which the committee of seventeen will lay any plans for creating machinery that may possibly control the major share of the corn and wheat grown in the United States.

The Illinois Agricultural Association is already handling grain in a large way for the membership and a number of corn and wheat states sent representatives to a group conference held in May, at which the sentiment was that success depended upon a general organization which would have the backing of the American Farm Bureau Federation and would handle the bulk of our staple grain crops.

One of the first things to be accomplished for the grain producers is a method of keeping farmers posted regarding world marketing conditions, including stocks on hand, crop prospects in all parts of the world, the transportation and shipping situation, cost of production and financing of the grain crop. There will be no more working in the dark in the production of either corn or wheat when the American Farm Bureau Federation completes its plans for an organization as outlined herewith.

Livestock Problems Taken Up.

In opening a discussion on livestock marketing, President W. G. Jamison of the Colorado State Farm Bureau outlined the manner in which he, as a stock raiser, is handling his business.

"We sell our cattle as short 2-year-olds off the range at 700 to 900 pounds. They are billed through to the river or Chicago markets with stop-over and feeding privileges at Denver in order to get advantage of the through rate. The cattle are topped at Denver, the packer taking out what he wants and the balance usually goes to farmers in western Nebraska or Kansas, to be roughed through for eight or ten months. These farmers are in the dry land sections where they have an abundance of roughage, including kafir and corn, and they usually put on from 125 to 250 pounds a head. The cattle then go to the river or to Chicago and there they are again topped. The corn belt feeder gets the balance to be finished up as heavy beef. That is the way our cattle from southern Colorado are handled. I understand that the range stuff from Montana and other northern ranges goes to Omaha, Sioux City and St. Paul markets and then what the packers do not keep, goes into the feed lots of the corn belt. We as rangemen have our problem of production, the feeder has his problem of finishing and marketing. By getting together we can perhaps eliminate some of our troubles and some of our costs."

Dr. W. H. Walker of California, who was in the chair, explained that the meeting was in the nature of a clinic and that the symptoms of the patient were being taken. That completed, there will be a consultation in which it will be sought to work out a cure that will relieve some of the marketing and production troubles of the livestock producer. The chairman then introduced John Brown of Indiana, a veteran corn belt feeder, who detailed the problems of the men in that end of the game.

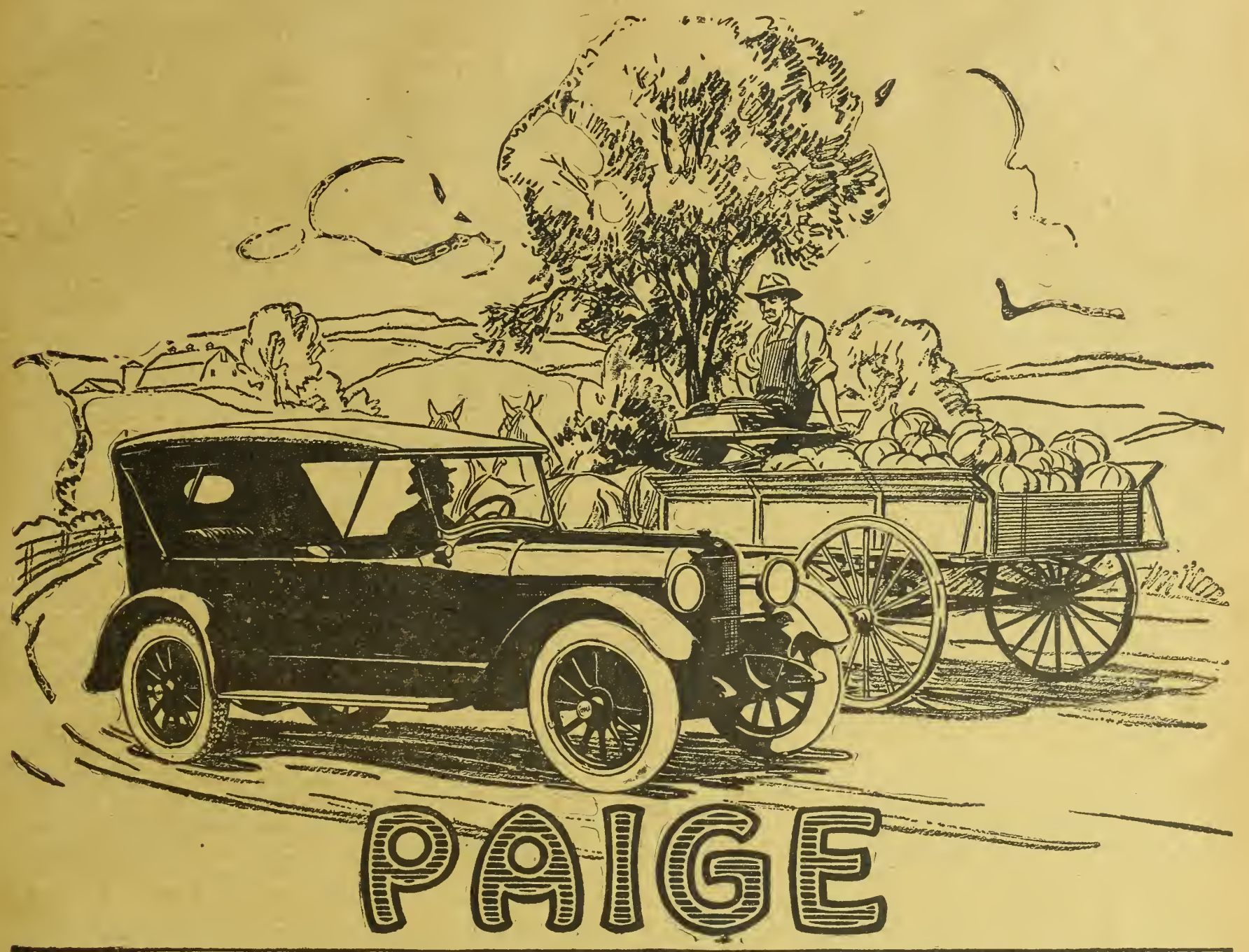
He started with the question, "Has the time come when we in the corn belt must quit feeding western range cattle? You people are doing more and more in that line and our costs have so increased that there is very little profit, if any, in the business."

Mr. Brown then detailed some of the experiences he had on the food administration committee, which attempted to put into operation the 13 to 1 ratio on hog prices. He was chairman of the executive committee of the Federated Meat Producers' Association during the war. Price equalization was the problem. He said that all interests were well organized except the producers and that "a bunch of us overall farmers" met with the packers and others who sent their $10,000 men, while the farmers sacrificed their personal time without hope or expectation of reward.

His presentation of the efforts that were made to stabilize pork prices proved very interesting. The big packers had war contracts to fill and this caused a shortage in the supply for domestic consumption. The independent packers entered the market and shot up the price because of the domestic demand. War contracts had to be filled, consequently the big packers were obliged to meet competition of the independents. Violent fluctuations were the result and finally the independents were allowed to participate in war contracts. This had a beneficial effect toward stabilizing pork prices. The next development in the hog price situation was the importation of a comparatively limited quantity of Argentine corn, which was sold on the American markets at a dollar a bushel. Hog prices dropped like a rocket. Following this came the influenza epidemic which caused congestion and delays in slaughtering and marketing and hog prices went flat. Thus the plan of keeping prices stabilized and the flow of pork even, met with failure. Mr. Brown pointed out the lesson was that farmers must learn more about cost of production, that production must be maintained and the flow to market regulated to prevent recurring periods of shortage and gluts.

"As it is now, we put a seal on our car of livestock, pay our fare to the market and sit on the stockyards fence and whittle while the commission man and the packer dicker over what we shall be paid for our product. When they are through dickering they hand us what is left over and then we buy what we need for our farms at the other fellow's price. I am becoming convinced that cattle feeding is getting to be more and more a western game and that you people out here should finish the bulk of your cattle and lambs. I have no idea of what we in the corn belt should do regarding cattle, but it seems to me that pork production is the thing for us. Some of our men made $50 to $100 a head last winter

(Turn to Page 22.)



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Co-operative Cabbage Marketing

PLATTE VALLEY GROWERS FIND PLAN PROFITABLE.

W. F. HEPPE, Agent in Marketing, U. S. Bureau of Markets.

CO-OPERATIVE marketing is gaining a firm foothold among the producers of agricultural products in Colorado, the most recent development in this line being the formation of the Colorado Vegetable Growers' Co-operative Association, an organization of the vegetable growers of Adams and Jefferson counties, in the territory adjacent to Denver.

This organization specializes on mixed carlots of vegetables for which there is a keen demand from the states adjoining Colorado on the south and east, principally Texas, Kansas and Oklahoma. The association is rolling daily from five to seven cars of mixed vegetables. Cars are loaded with about 50 per cent cabbage, balance consisting of bunched table onions, beets, carrots, turnips, radishes, lettuce, cauliflower, celery, etc.

Modern method of handling cabbage by Colorado Vegetable Growers' Co-operative Association.

Colorado moves on a yearly average approximately 2,000 carloads of cabbage, having shipped last season 2,313 cars according to reports issued by the Bureau of Markets of the United States Department of Agriculture. Shipments of mixed carlots aggregating annually about 1,100 cars are made, the bulk of which is grown in the Denver district.

The Colorado Vegetable Growers' Association is a farmers' co-operative exchange having about 120 members. Its purpose is to standardize the product of its patrons and to reduce the cost of marketing, thereby effecting savings to members. It operates on a non-profit basis and is organized without capital stock along the lines recommended by the Bureau of Markets. The association is formed in accordance with the Colorado co-operative law of 1915, providing for co-operative associations formed without capital stock and not conducted for profit.

For the benefit of Colorado farmers desiring to form co-operative marketing associations under this act, a brief digest of the law with its characteristic features and powers follows:

1. Three or more persons engaged in the production, preservation, drying, canning, shipping, or marketing of the products of the soil or farm, or in the raising and marketing of livestock, may form a co-operative association under the provisions of this act.

2. Such association shall not have capital stock and its business shall not be carried on for profit.

3. Each member shall have one vote and no proxies shall be allowed to be voted.

4. Any association formed under the provisions of this act, may admit to membership any other association, so formed, or formed under the laws of any other state upon terms and conditions prescribed by the by-laws; any association may also acquire membership in any other association likewise formed under the provisions of this act.

5. Two or more associations formed and existing under this act may be consolidated, upon such terms and for such purpose and by such name as may be agreed upon by the members.

6. Any association formed under the provisions of this act may provide for sufficient working capital.

7. Any association formed under this act may be dissolved and its affairs voluntarily closed.

8. A filing fee of fifteen dollars shall be paid to the Secretary of State at the time of filing a certificate of association.

Idaho Potato Inspection.

We pride ourselves on the big yields and fine quality of potatoes grown in Idaho, and well we may, for no state in the Union produces better, but we have diseases in our potatoes—several of them—and they are becoming more numerous.

Two years ago we found a few plants in the fall that had gone down from the effects of the blackleg disease. On this recent trip we have turned down a great number of fields of seed potatoes because of the presence of blackleg. Last fall we saw a fine field of potatoes—fine except that there were here and there over the field plants that had stems black and decayed just above the ground. Some of the tubers from these plants decayed. Tubers from the plants with less of the infection did not show the disease at all. Seed from this field was planted on many different farms in that county, and the seed looked good, but there is now a high percentage of plants in every one of these fields that have well developed cases of blackleg.

Rhizoctonia and fusarium are both also common. The rhizoctonia and to a lesser extent the fusarium are always with us, but we must not encourage either of them by planting seed known to be infected with them. We also have several other insiduous and elusive, though none the less dangerous diseases showing up here and there in our fields. The most common of these is the calico, causing plants to have white patches on their leaves. It is not fatal, but it does reduce the yield of the tubers of that plant—and we don't want it. We find in many fields, especially of the Idaho Rural variety, many plants with small, weak stems. The lower leaves get a rusty appearance and fall off. The plant continues sickly all season and makes less than half a yield. The disease comes back the next year in greater numbers. We don't want it.

Among the Gems this year we find in many fields a great percentage of weak, dwarfed plants. Many growers attribute this to dry weather at planting time. They are wrong. These plants, traced back to the seed, show many tubers that instead of sending out normal sprouts, developed only weak, spindly sprouts, the size of a darning needle. This is the spindly sprout disease. We don't want it.

We might mention several others, but space forbids. What shall we do? There is a choice of three things that we can do. First, we can discard the whole lot and get seed elsewhere, though we may not help matters much, as the other fellow's seed may be equally bad. Second, we can dig out and destroy all the plants in the field that are weak or diseased. This is feasible only where the percentage of bad plants is small, and it is not advisable where the fall stage of blackleg is evident. This method must be followed where certification of seed is desired, and the work must be done thoroughly. Third, we may go into the field when the plants are nearly mature, but before they are ripe or frozen down, and after carefully examining the plants, select those that are desirable and have a clean bill of health, for our next year's seed.

This is the advisable method for the average man for improving or holding his standard of excellence of his potato crop. Fields that are pretty badly mixed and that have a lot of disease usually have many good individual plants. These may be taken out and sowed by themselves for seed with much profit.

Does good, pure seed pay? Last week we were in a field of one hundred acres. The grower had planted it with potatoes purchased from a dealer. They were supposed to be good seed of one variety that had been purchased in one of the eastern potato seed growing states. This field of potatoes had a poor stand. About 5 per cent were of the variety purchased and most of them were run-out multipliers—big plants with fine, purple blooms but with strings of tubers the size of bantam eggs. There were at least half a dozen varieties of potatoes in the field. The loss cannot be less than one hundred sacks per acre. One hundred acres makes 10,000 sacks loss. Did poor seed cost this man anything?

We must have better seed. We will have quite a number of acres of seed in the state that can be certified, and that means that it must be good. It will take 1,000 cars of potatoes to plant Idaho's next year's crop of potatoes. We have enough certified seed to plant from two to five per cent of the acreage. What about the other 95 or 98 per cent? Now is the time to think about seed for next year's planting.—E. R. Bennett, Field Horticulturist, University of Idaho.

Sheep Raising on the Farm.

At this time sheep raising among the range men is not as profitable an industry as it was some few years ago. However, a few sheep on the farm are always a good investment, mainly because their cost of upkeep in small numbers on the farm is very little. It is often said that a sheep will eat all kinds of weeds found about the farm, but too many of us try to make themselves believe that that is all a sheep needs. By all means let them get as much out of the waste feeds as possible, but do not let them get too thin before you supplement with other good feeds.

Until the wool market is adjusted one needs to pay most attention to the lambs. The present price for good lambs is around the $12 mark. For a small number of sheep one can make gains for little or nothing. The lambs can be taken care of early and placed on the market in the summer when the prices are right. Arrange to have lambs dropped in February. This can be done with small numbers, and have them ready for market in July. They can be made to weigh 70 pounds by that time if they are given the proper care. The [illegible]on breeds are best for this m[illegible] handling.—H. A. L.

Political Advertisement

For President
Warren G. Harding

For Vice-President
Calvin Coolidge

The Republican Party and the Farmer

To the Farmers of the Nation:

Next November you will join with all other good citizens in choosing a president of the United States for the four years beginning March 4, 1921.

You must choose either Warren G. Harding, the Republican nominee, or Gov. Cox, the Democratic nominee. There is no third choice. One or the other of these two men will be elected. The affairs of the nation during the next four years will be directed either by a Republican or by a Democratic administration.

Which will best serve your interests, both as a citizen and as a farmer?

Let us look at it for a moment from the purely farm standpoint.

Your experience of the past seven years, and especially during the past three years, tells you what you may fairly expect from a Democratic administration.

Your industry, the greatest in the nation, was singled out as the target for a price fixing policy which has limited the prices of the things you had to sell while leaving you exposed to the exactions of profiteers in practically every other line of production, distribution and speculation.

You have been told what you could receive for your staple products, either directly or indirectly; you have been subjected to restraints as to shipping, and all sorts of exactions and annoyances.

But there has been no limit placed upon what others might charge you for the things you have had to buy.

The result of this unwise, unsympathetic policy, while discouraging and harmful to the farm producer, has not helped the consumer. On the contrary, it has made conditions worse for him, because it has tended to curtail production and at the same time has stimulated speculation and profiteering.

The Republican party is not a class or sectional party; its policies are intended to upbuild the entire nation. But it believes that it is essential to the welfare of all our people that the farmer, whose industry is the very foundation of our national prosperity, should have his fair share of the wealth which his labor and enterprise creates. It believes that if our agriculture is to be maintained the farmer must have an absolutely square deal.

The Republican party therefore, by its platform and by the utterances of its candidates, is pledged to a thoroughly sympathetic, practical, helpful attitude toward American agriculture. It promises a well thought out, constructive program which will help make farming more profitable and therefore make our farms more productive.

In contrast with this helpful attitude of the Republicans the Democratic party offers no protection to the American farmer against the cheap farm products of foreign lands; on the contrary, it re-affirms its tariff-for-revenue-only policy which throws the American market wide open to the dairy products, grains and meats produced on the cheap land and by cheap labor of foreign countries. It promises no relief from the price-fixing and price drive policies which have cost the farmers hundreds of millions of dollars during the past two years and have helped no one but the speculator and the profiteer. Nor does it even recognize the existence of the violent fluctuations in the prices of farm products—more violent and unreasonable during the past three years than ever before in our history—which have caused you such heavy and unnecessary losses.

Pledges of the Republican Party

Here are the formal pledges of the Republican party as set forth in the agricultural plank of the national platform. Read them carefully, for they are of vital interest to you.

Practical and adequate farm representation in the appointment of governmental officials and commissions.

The right to form co-operative associations for marketing their products, and protection against discrimination.

The scientific study of agricultural prices and farm production costs at home and abroad, with a view to reducing the frequency of abnormal fluctuations, and the uncensored publication of such reports.

The authorization of associations for the extension of personal credit.

A national inquiry on the co-ordination of rail, water and motor transportation, with adequate facilities for receiving, handling and marketing food.

The encouragement of our export trade.

An end to unnecessary price fixing and ill-considered efforts arbitrarily to reduce prices of farm products, which invariably result to the disadvantage both of producer and consumer.

The encouragement of the production and importation of fertilizing material and for its extended use.

The extension of the federal farm loan act so as to help farmers to become farm owners and thus reduce the evils of farm tenantry, and also to furnish such long-time credit as farmers need to finance adequately their larger and long-time production operations.

Revision of the tariff as necessary for the preservation of a home market for American labor, agriculture and industries. (Note that the pledge to the farmer is just as specific as to labor and capital.)

Harding's Endorsement

Senator Warren G. Harding, the Republican nominee, in his speech of acceptance took advanced ground on behalf of agriculture. He said:

"I hold that farmers should not only be permitted but encouraged to join in co-operative associations to reap the just measure of reward merited by their arduous toil.

"Our platform is an earnest pledge of renewed concern for agriculture, and we pledge effective expression in law and practice. We will hail that co-operation which will make profitable and desirable the ownership and operation of small farms and which will facilitate the marketing of farm products without the lamentable waste which exists under present conditions.

"A Republican administration will be committed to a renewed regard for agriculture and seek the participation of farmers in curing the ills justly complained of and aim to place the American farm where it ought to be—highly ranked in American activities and fully sharing the highest good fortune of American life.

"Becoming associated with this subject are the policies of irrigation and reclamation so essential to agricultural expansion, and the continued development of the great and wonderful west."

Mr. Harding pledges federal co-operation with state governments in building and improving farms-to-market roads rather than national highways, to cheapen and facilitate the quick shipment of crops.

Send for a free copy of Senator Harding's address in which he discusses at length present day problems of the farmer.

REPUBLICAN NATIONAL COMMITTEE, Auditorium Hotel, Chicago

Republican National Committee,
Auditorium Hotel, Chicago, Ill.

Please send me, free and postpaid, copy of Senator Harding's Address on the present day problems of the farmer.

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The Heart of Virginia Keep.

The editor received a very interesting letter the other day from a gentleman at Evanston, Ill., who signs himself Edwin Baird. In a later issue we expect to tell you something more about him, but for the purposes of the present an extract from his letter will suffice: "I have been writing fiction for more years than I care to remember and my stories have been published in scores of magazines of different type, but particularly in the agricultural publications. And now I am breaking into Western Farm Life and mighty glad to be addressing a new audience of farm people, for I'd rather write for farmers than for any other class. One of the dearest ambitions of the present moment is to live on a farm of my own. I can look forward, with keen enjoyment, to a life far removed from the noise and grime and artificiality of a city."

Mr. Baird is the author of "The Heart of Virginia Keep." We have been fortunate in securing the serial rights to this novel and publication of the story will begin in an early issue—probably October 1st. There is nothing about farming in "The Heart of Virginia Keep," nothing prosaic, nothing of the humdrum of everyday life. It is simply and solely a story, written by a man who has a peculiar talent for analysis of human emotions and whose style is vivid. Mr. Baird has the ability of taking the reader with him into situations that touch the heart. His appeal is to the humanity in man and his characters are strong, upstanding, virile representatives of the race, who do the unusual things that one likes to read about and imagine himself doing under the stress of circumstances.

You are all invited to join us in looking deeply into "The Heart of Virginia Keep," a modern American girl. You'll be interested right from the start, for the author is master of the art of brevity. He does not waste words. Virginia is a very likeable girl, the independent type that distinguishes our American young women. She will keep you busy guessing "what next"—but take our word for it, there is a young fellow in the story who has to hustle to keep up with her. Just how Mr. Baird managed to crowd so many adventures and thrills into a story of modern American life is his own secret. All we can say is, the story has got the punch, and it has something to recommend it to every member of the family, from little Susan Jane, aged 12, up to Grand-dad, who is nearly 76. It is clean, wholesome, intensely interesting. You will like Virginia Keep before you have finished the first chapter and you will always have a warm spot in your heart for Edwin Baird, the creator of this beautiful and forceful character.

Do you remember the picture play "The City of Purple Dreams?" If you haven't seen it perhaps you will some day. Mr. Baird wrote the story which was published in book form in America and Great Britain, then translated into several foreign languages and is appearing this fall in a seven-reel photoplay. You will agree with us that the man who wrote "Purple Dreams" has given us something equally worth while in his latest novel, "The Heart of Virginia Keep."

Wheat Price Manipulation.

Reopening of trading on the grain exchanges of the country which were closed during the war, has been followed by a decided drop in the price of wheat, in the face of a world shortage of cereals and slow movement to market because of car shortage. If there is any evidence needed that the price of wheat is fixed by the exchanges, arbitrarily, and not on the basis of supply and demand, the present condition of the market furnishes the proof. Corn is following in the wake of wheat and livestock will follow corn. The United States Department of Agriculture recently published figures on the cost of wheat production that indicated an average cost in representative winter wheat areas of $2.15 per bushel, showing that one-half of the farms included in the survey lost money on the crop.

From this unbiased and authentic source we have the statement that the "necessary price"—that is, the price that would give the producer a profit, would have to be in the neighborhood of $2.60 per bushel. This is not an encouraging outlook for the 1920 crop, which cost even more to produce than 1919, on which the above figures are based.

It may be true that few farmers understand the market, but they are putting two and two together. They are aware that as soon as war restrictions were removed from the exchanges, dealing in futures was resumed and the same old story was put out to the effect that the new crop brought a surplus in sight that caused the market to assume a decidedly bearish tone. That might pass for gospel again this year, were it not for the fact that the channels of transportation are clogged and wheat movement is not up to normal, in the face of a strong demand from the millers at home and the trade abroad. If demand has anything to do with the price it ought to be high. If the market manipulators are taking advantage of the situation the farmers are justified in holding their wheat. No other conclusion can be reached from a study of the markets.

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"Tama Jim" Wilson.

In the death of James M. Wilson, former secretary of agriculture, the nation lost a unique and important figure who leaves as a monument to his genius for organization the United States Department of Agriculture, a national bureau that eclipses in scope and accomplishments any similar department that has ever functioned under any government, anywhere at any time.

"Tama Jim" Wilson was a farmer; a livestock farmer; a practical farmer of broad vision and big ideas. He was endowed with the quality of diplomacy, hence his long service to the nation under successive administrations did not depend solely upon the merit of his accomplishments for agriculture. He served longer than any other cabinet officer in the history of our government. Some found fault with his methods of administration, but fair judgment demands consideration of his work as a whole. It was progressive and fully abreast of agricultural development of the day. If the department under Wilson neglected the economics of farming and stressed production it was because the farmers needed to learn, in an organized way, the lessons of production. The machine he created at Washington has gone forward under his successors and adopted new methods, plans and ideas as the time became ripe for them. Fundamentally the policy that actuated the department under his regime was correct. Before the nation could think of agriculture in a large way it was necessary to produce in such bulk that the figures became astonishing. Volume brings its problems of distribution in any business and this is what happened in agriculture. The second stage has arrived, but without the foundation laid by the production experts there would be no surplus to market.

His work stands as a national achievement possible only to one who combined a knowledge of the practice of farming with the vision of a statesman, and who had the political sense to adhere to a course that maintained the popularity of his administration long enough to show noteworthy results. The lesson in his service should not be lost, and it is this that frequent political changes in presidential advisers are not to the interest of the nation. When a president of the United States finds in the cabinet a man well qualified and carrying out policies for national advancement that are fruitful of results, he defeats the will of the people by replacing such an official. In the case of James M. Wilson, Presidents McKinley, Roosevelt and Taft took the broad view that squares with public policy.

✦ ✦ ✦

Boys' and Girls' Club Work.

In these days when we are needing loyal support in the progressive construction of our country, we find it difficult to keep away from radical methods. The American Farm Bureau Federation, while still new, is building on a careful and sane basis. They are trying to correct the farmers' difficulties by digging into the why and wherefore of the present conditions and to influence a correction in an American way, that of good, sound constructive policies. The present outlook for their future success is evidenced by the fact that the farmers are supporting the movement.

One of the big things ahead that promises to be of untold success for this organization in the future is the boys' and girls' club work now being pushed by the U. S. Department of Agriculture and the agricultural colleges of the various states. The club pledge is, "I pledge my head, my heart, my hands, and my health, to reason, loyalty, service and efficiency." The farm boys and girls are being led by able and noble minded men and women, who are doing all in their power to assist the youngsters in gaining a high ideal of our nation's welfare, by teaching them along the lines of doing things that help them both financially and morally. It goes without saying that these boys and girls when grown to be men and women, will be better fitted to take over the work of Americanism and the big problems along farm lines than if they are not given the advantage of this training. Hand in hand with this in the moral development of our American boys and girls is the boy scout movement. We cannot help but reap a great benefit from these organizations in the future. The boys and girls' club work in this state is being ably handled by Miss Maude Sheridan of the Colorado Agricultural College. Her army of 11,000 boys and girls enrolled in agricultural club work are vitally interested in some particular project, such as raising an acre of corn, a pig, an acre of potatoes, a calf, or sewing, canning, baking, etc. The work that they get is aside from their school work and assists them greatly in the practical application of their book lessons.

Too few of us appreciate what this really means to the progress of a community. We should watch it more and assist the work by encouragement not so much financially as morally.—H. A. L.

An Arapahoe Prairie Dog Campaign.

An active campaign to eradicate prairie dogs has been set in motion in Arapahoe county to cover the plains country immediately east of Denver. The Byers pest district was the first to be organized under the plan and this includes over 44,000 acres of land. In this district it is estimated that 10,000 acres are badly infested with prairie dogs. The poisoned oats method will be used in eradication, the cost of the work being about 7½ cents per acre. It is believed that fully 90 per cent of the dogs can be eradicated by two or three systematic applications of poisoned oats. It will then be necessary to complete the work by the application of carbon bi-sulphide in order to get the remaining 10 per cent. This treatment will cost about 1 cent per hole.

Community pest inspectors have been appointed to take charge of the work in various districts. The work is carried on by co-operative arrangement between the Arapahoe County Farm Bureau and the U. S. Biological Survey. A tremendous amount of damage is done to pasture lands as well as crops each year by prairie dogs and dog towns are found up to the very limits of the city of Denver. Spasmodic efforts have been made in the past to eradicate the dogs, but this is the first time a systematic plan has been evolved which contemplates doing the work over a sufficiently large area to prevent re-infestation.

If the sheep have ticks, dip them; you can't afford to feed ticks, summer or winter.

The Branding Iron

One of Uncle John's Stories.

Uncle John Brown of Indiana, who attended the western conferences of the American Farm Bureau Federation, not only provided us with much food for thought on livestock problems, but proved to be an excellent story teller. One of his best hits at the Salt Lake meeting was the story of the farmer who went to town to attend a meeting of the Farmers' Alliance when that organization flourished about thirty years ago. It so happened that the Alliance held its meeting in the same hall where the town business men met in weekly session, both holding secret meetings, due to the bitterness that existed between the business men and the farmers. This particular farmer made a mistake in the meeting night and came to the town hall while the business men were in session, approached the slit in the door and whispered the Alliance password:

"We plow, we sow, we reap."

"Go to hell, you hayseed!" was the answer he got.

Meeting a farmer friend later he told him of his experience and the friend said:

"You don't mean to say you gave them our password!"

"Yes," was the reply, "but I got theirs."

Uncle John made the point that business was not taking that attitude nowadays and that class feeling had no place in the Federation.

* * *

"Not so long ago a young couple in my part of the state," a correspondent writes us, "became the proud parents of a little girl. They wanted to weigh the youngster as soon as she was dressed, but had no scales. Just then the ice man came along and they borrowed his scales. To their surprise the little one weighed 44 pounds."—McCall's Magazine.

* * *

Baca County on the Map.

We are surely coming to the front. Baca county was mentioned twice in a recent editorial in Western Farm Life. A few years ago even editors didn't know where Baca county is—always an important part of the state, too.—Two Buttes Sentinel.

Just for that, Brother Jones, we'll mention Baca county again.

* * *

The United States Civil Service Board is advertising an examination "for field assistant in insect control"; salary, $1,200 to $1,800 a year. The nature of the insects is not mentioned, but if it is to be cootie controller and there is a bounty on scalps, old Isaiah Holdemback ought to make application.

* * *

Would Cure Willie.

"John," said her husband's wife, "I don't believe you have smoked one of those lovely cigars I gave you at Christmas."

"No, my dear, I haven't," replied his wife's husband. "As a matter of fact I intend to keep them until our little Willie grows up and wants to learn to smoke."—New York Globe.

* * *

Mrs. Gawler: "I expect your baby will be much larger when I see her again."

Mrs. Sharp: "I hope so."—Macon Telegraph.

* * *

U. S. Court Asked to Decide Cider Wet or Dry Drink.—Headline.

There is cider and cider, rules Don Marquise of the New York Sun. If you throw an ax into it and the ax floats it is probably getting hard. If the ax dissolves it is quite hard and should be diluted with a little gin to lower the proportion of alcoholic content before it is used as a beverage.

Comment by Farmer Putnam

JOSEPHINE QUOTES EXTRACTS FROM A LETTER TOM WRITES WHILE IN SALT LAKE CITY.

DEAR Editor: I wish you-all would fire Tom. He's been good fur nuthin' ever sense he's been writin' fur Western Farm Life. The farm is all run down; I cain't git him to do no work on the place and he won't hire nobody to put in crops, because he sez labor is too high. All the hay he's puttin' up this fall is Rooshian thistles and when I said he ought to be ashamed of hisself he sez: "Well, Fred Haupert puts 'em up and he's a good farmer." I told him Fred was puttin' up silage and other feed too, but he don't seem to care what I tell him; he's just plum wuthless in farmin' because he thinks he's doin' literary work. When I ask him to milk or help with the feedin' he sez he's got to study and improve his style. He reads books wrote by Shakespeare, Robert Chambers, Harold Bell Wright and other famous humorists to git idees he sez, fur his own writin', but I never could see no signs of it in what he sends to you-all. Now I kin put up with most anything, but a week ago you sent him to Salt Lake City and I want you-all to read the letter I got from him and then judge if it ain't time to make him go back to farmin' fur his own good. The little he gits fur writin' don't pay fur the time he fools around the country in. He'll spend a hundred dollars gatherin' what he calls material fur a article that brings in $3.50 and it don't look like economy to me. Now here's his letter:

"Salt Lake City, Aug. 25th: Dear Josie—Arrived safe and sound and hope these few lines will find you the same. I never did realize how important I was till I took this trip. I come out in the Pullman. The feller that sold me my ticket wanted to know if I wanted a upper or a lower and I told him he shouldn't ask such a question; if he was a good judge of human natur' he could see that I belonged in the upper ten and so he apologized and give me a berth accordin' to my station in life. Here in Salt Lake they been a treatin' us royal. Mr. Burton took us over to the Tabernackel to hear the organ, which is bigger'n our cow barn. I never heard such playin'. I seen Bill Jamison shut his eyes when one piece was played that sounded like the breeze sighin' through the pines on the slope of the Cumbres. I shut my eyes too and pretty soon they was a bluegrass paster on a hillside with bees hummin' over it. At the bottom was a little crick, with a kid layin' on the bank and lettin' his toes drag in the water. A bluebird was singin' in a pawpaw bush over his head and vines was trailin' all over the clump of bushes. A cow raised her head and a bell tinkled when she swished a fly offen her back with her tail. A cloud come up; it got dark; the wind got a little stronger; it felt like a storm was comin' up, but it blowed over and I opened my eyes and seen I was still in the Mormon tabernackel, but the concert was over. I felt just like I did that time when I was to the camp meetin' and they asked me to be a Christian and I took the vow and swore off on strong drink, tobaccer and swearin' and to my credit I say it Josie, I kept it fur three weeks, till I went to Platte City the next time."

Now friends that's one part of his letter. Do you-all think music could make him dream like that? Do you-all think he could a-swallered some salt water in the lake? I ain't insinuatin' nuthin', but somehow I cain't trust to let him go so fur away from my sight even in these here temperance times (comparatively). Now let's read some more of what he wrote:

"We all went out to the lake one evenin' with Mr. Burton leadin' the party. Salt Lake is a large body of hard water, entirely surrounded by land, such as it is. In that way it corresponds to a island, only instead of bein' dry land it's dry water. It is unsafe to drink, except fur picklin' purposes, and I didn't want to git pickled that way. They has a fine place at Saltair beach fur amusements, such as dancin', swimmin', roller coastin', etc., which is all well and good because people has to have some amusements, but they could make better use of the lake and I want to give 'em a suggestion through the paper. They got plenty of fresh water back in the mountains fur irrigation which they could run out on the flat west of the city, and raise cucumbers and dill. It would be only a short wagon haul to the lake where they could brine it and make a special Utah brand of dill pickles with a farm burro label that would guarantee the sale of 'em all over the country."

Now you-all kin see what effect the lake had on him. I still say I have my doubts about tabernackel organ musick havin' that kind of results. Here's some more of his letter:

"Josie I bought me a copy of the Book of Mormon fur 75 cents, but I was disappointed in readin' it. I couldn't find nuthin' about follerin' the example of King Solomon. Maybe my views ain't exactly orthodox, but I cain't condemn them old timers fur doin' what they thought was right. The cost of livin' wasn't such a item in King Solomon's day; and if men wanted to assume greater responsibilities why it was to their credit, and if later on some wanted to foller in the footsteps of the old timers why they done it because it was the best they knew how and when they seen they was on the wrong track they changed their system."

Now that's just like Tom all over. He's got a wicked streak in him that no amount of religion will wipe out and when he gits away from home why it crops out. I'll never let him go to Utah ag'in. Now the rest of his letter I cain't find no objections to, which is as follers:

"You got to give them Mormon people credit fur buildin' up a great state and city outen what was a desert. The man that could see all this when he looked out over the Salt Lake valley eighty years ago and said 'This is the promised land' had more faith then I could-a had. He was a builder and he done just what all big men that ever built a state or a nation done fust, and that is laid out a temple to worship God. People might have different idees on God, but no man kin foller wrong idees long if his intentions is good. Sooner or later he'll learn to profit by his mistakes and whatever he builds that is good, such like schools, music, books, social life and religion, will last as long as time lasts and his mistakes is soon forgive and forgot.

"In the hotel where I stayed they had a little side room where I washed up. I seen a hose attached to a faucet in the wall and I turned on the water and held my cup under it to get a drink, when all of a sudden I got a soakin' that ruined my clothes fur the night. I didn't complain about it to the clerk, because he might think I wasn't used to modern improvements in them fine hotels, but I figgered it out myself. You see them Utah people is great admirers of flowers and plants and they have sprinklin' facilities in them hotel rooms so guests that brings their own rubber plants or oleanders kin water 'em as often as they need it. Mr. Leonard of Fort Morgan was with me and he tried to make me believe that the contraption was a shower bath. I hardly think they would want to waste the water that way. In travelin' out here where water is so valuable for irrigation, I think everybody ought to do like I—wait till you git home. You'll git all soiled ag'in anyway on the train if you take a bath in one of them hotels. I don't believe in wastin' water.

"I went up to the capitol to see Governor Bamberger, but he was out of town. I hated to miss him; he's one of them modern builders of a different type and race from them in Brigham Young's day, but his bein' elected governor just shows how progress wipes out them old class distinctions. I heard one of the Governor's friends say that the Governor was never considered a gentile till he went to Utah. Nowadays they don't divide off in Utah like they used to, and a strong man of the great Hebrew race is head of a commonwealth that finds Mormons and non-Mormons workin' together to build up one of the best states in the Union. Governor Bamberger has got his eye on tappin' our northwest Colorado country by buildin' a railroad through the Uintah basin. Now if Colorado comes through with the tunnel it won't take much to extend the Moffat road to where it will meet the line that Utah wants to build. I reckon we don't want to let them Utah people beat us to it. They've got the spirit and the money to do it with.

"Josie you just got to come out here to visit some time. We'll drive over; the rates goes up next week on the railroad and I'm afraid you'd git train sick anyway."

Now Mr. Editor that's the way he allus does; he tries to make me think that he's lookin' out fur my welfare; he keeps runnin' around the country advisin' farmers, and his own place is a shame and a disgrace to farmin'. I'm comin' in to have a private talk with you to see if you cain't give him somethin' to do that's useful and let me do the writin'. Us wimmin has got full suffrage now in all states and from now on I'm goin' to pick some of the easy jobs fur myself. Tom started home from Salt Lake last Sunday, but he's comin' by the D. & R. G., so I don't know just when to expect him. I seen where he's been delayed by floods in the Royal Gorge and that makes me think how Tom fooled me one time when he said that the Royal Gorge wasn't no mountain scenery, but the name of a restaurant in Canon City. His mind runs very much to grub.

JOSEPHINE PUTNAM.

In a recent tractor demonstration in Mississippi County, Mo., seven tractors were entered. The demonstration was not entirely a success, owing to the fact that many blind stumps were struck by the plows, causing much delay. Figuring labor $1.50 an hour for plowing the results of the demonstration on the cost of plowing an acre were: Wallis-Cub, $1.19; Twin City, $1.21; Sampson, $1.21; International, $1.33; Titan, $1.39; Cleveland, $1.48; Fordson, $1.57.

If in need of advice, ask Western Farm Life Service Bureau.

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EVERY farmer or ranchman—as well as every man who works or plays out-of-doors—will appreciate the protection and comfort afforded by this "OAK BRAND" all-leather Blouse Coat.

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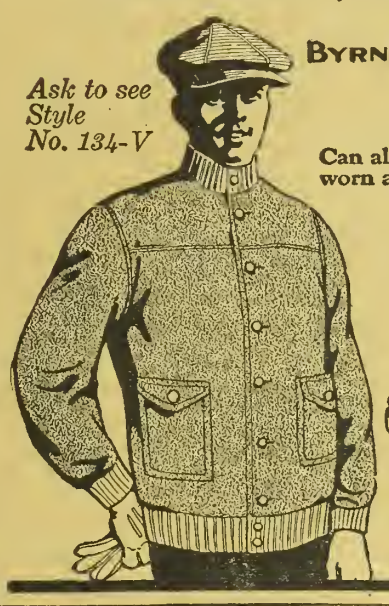

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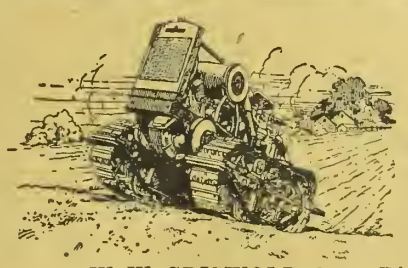

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and through the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Onion Flavor in Milk.

I would like some information on the matter of wild onion flavor in milk.—J. R. J., Montrose County, Colo.

Considerable trouble has been experienced by most of the Colorado creameries during June and July with weed flavors in cream. These flavors are commonly attributed to wild onions. It is not certain that wild onion is the cause of all of these weedy flavors attributed to it. In some sections it has been extremely bad. In one shipment of cream to a Denver creamery a short time ago from one of the Western Slope stations twelve out of thirteen cans had a very pungent flavor caused by weeds or wild onions. These flavors give considerable difficulty in creameries, as it is practically impossible to eliminate them entirely. The flavor can be somewhat reduced by forcing air through the cream or milk, but as far as we know no apparatus has been put in use successfullly for this purpose. The local dairymen can often remedy this condition by locating the weed which causes the trouble and keeping cows away from them. If the weeds have general distribution throughout the pasture the flavor can be greatly reduced in the milk by taking the cows off this pasture for several hours before milking time. Some method of this kind can be worked out where weeds are causing this trouble. Local investigation is necessary to determine whether it is wild onion or some other weed that is causing the trouble this time of year. Many of the local dairymen believe that it is not wild onion that causes most of the trouble. For detailed information on eradication of the wild onion parties should obtain Farmers' Bulletin 610. For information on removing weedy flavors from milk, would suggest that they obtain Farmers' Bulletin 608.—State Dairy Commissioner.

About Registration of Hogs.

I bought a registered Duroc Jersey gilt last February 1. She brought me pigs this spring. Would like to get some of them registered. She came from Nebraska. Can you give me name and address where to write to have her certificate of registration, as I am just starting in the game.—C. L., Yuma County, Colo.

When you bought your gilt you should have gotten registration papers on her, together with a certificate of transfer from the Nebraska breeder. With this information you could register the pigs providing you have the registration on both the gilt and boar. If the gilt was bred when you got her and you do not have the registration number of either of the sire or the dam it will be necessary for you to get them from the Nebraska breeder. The name of the record association is the National Duroc Jersey Record Association, Peoria, Ill. I would suggest that you tend to the matter as soon as possible because delay in registration often causes a loss of time in getting the papers through. The breeder in Nebraska from whom you bought your gilt will be in position to help you out with your deal if you take the matter up with him. —H. A. L.

Starting Sweet Clover.

Tell me how and when to start white blossom sweet clover on dry land.—C. W. C., Morgan County, Colo.

If you have plenty of moisture in your soil to insure satisfactory germination and growth you are safe in planting it right away. However, if your ground is not in good condition it would be more advisable for you to fall plow it and sow the seed next spring, say the latter part of April or the first of May. The rate of seeding recommended is 8 to 10 pounds per acre. Sow with a drill and pack the soil well with a harrow or other implement. If you would send us a little more definite information regarding the character of your soil, whether it is sandy or heavy soil and whether or not it was cropped last year, or if it is new land, we may be able to give you more light on the subject.

Should Refund the Charges.

I sent for 100 pounds of twine and told the company to send it by freight. They sent it by express and the charges were $3.59. If they had sent it by freight as I told them it would have cost only $1.42. Of course, I'll have to pay it now as I need it for harvest, but don't you think the firm ought to pay me $2.17?—J. H., Weld County, Colo.

If you instructed the company to send the twine by freight they should refund to you the difference in cost between express and freight. Write them a letter stating the circumstances and ask them to refund the $2.17.

Clerk Did Not Earn Fee.

I went to town and thought it would be a good chance for me to get my citizen papers. I went to the court house and the clerk looked at my first papers and told me it would be O. K. for me to bring in four witnesses and pay him $4, which I did, but when he found out I lived in the next county he said he didn't know whether he could handle the case or not, but that he would write the chief examiner to find out and let me know. I received word that I had to go to Greeley. I would like to know if the clerk has a right to keep said $4.—Subscriber, Colorado.

The clerk has no right to retain the $4 fee if he did not perform the legal services which you required of him. We would suggest that you put in a claim for this amount to the county commissioner, explaining all of the circumstances.

Lawful Fence for Colorado.

What constitutes a lawful farm barbed wire fence in Colorado?—A. M. D., Pueblo County, Colo.

A fence of three or more barbed wires, of standard make and usual size, same to be not less than 13 gauge, with posts securely set in the ground not less than eighteen inches in depth, said posts to be not less than three inches in diameter at the point where the top wire crosses the post, and set not more than thirty-three feet apart, with substantial metal or wooden stay or post every sixteen and one-half feet, top wire to be forty-six inches from the ground, the second wire fourteen inches below the top wire, the third wire to be twelve inches below the second wire, all wires to be tightly stretched and securely stapled, and all corner, end and gate posts to be securely braced; provided, that when posts are closer together than thirty-three feet, they may be smaller in size than as herein provided, but must be of sufficient strength and stability so that the fence as a whole will offer as great resistance and be as good protection as a fence as herein described; and provided, further, that all measures and distances mentioned herein shall be construed as an approximation, and whether any fence conforms approximately to the requirements, herein, shall be a question of fact to be determined by the board of arbitration or court which tries the cause, as are other questions of fact. Post and board fences made of sound posts not less than five inches in diameter, set substantially in the ground not more than eight feet apart, with three boards of one-inch lumber eight inches wide and not more than eight inches apart, or four boards one inch thick and six inches wide, not more than six inches apart, securely fastened to each post with nails or otherwise; a three-pole fence with sound poles not less than two inches in diameter at the small end, with posts as hereinabove provided for post and board fences, not more than eight feet apart; all other fences made of board, rails, poles, wires, woven or smooth wire, stone, hedge, plants, or other material, which shall be as strong and as well adapted to protect enclosures as the above described fences, shall be considered for the purpose of this act a lawful fence; all gates shall be kept in good repair and shall be equally as good as the fence. (L. '17, p. 342, sec. 1.)

Fencing the Only Protection.

Is there any way in which I can keep stock from grazing on my homestead when it is not fenced?—J. K. J., Montrose County, Colo.

Sorry that we cannot give you any encouragement in your efforts to keep livestock from your unfenced land. Colorado is a free range state and it is necessary, in order to have the protection of the law, to enclose your lands with a lawful three-wire fence. After you get your fences up you will be able to get protection and damages for any grass or crops ruined by livestock breaking through.

Can't Make Him Repair Fence.

What is your opinion in regard to cattle coming from the range and getting into an alfalfa field and bloating? The fence is down and the party that lives on the place refuses to fix it or do anything toward fixing it. The range is just one mile from the field and the cattle have to come two-thirds of the way to get water, and then they go on down to the field of alfalfa.—Subscriber, Weld county, Colo.

You cannot compel the owner to fix his fences. He may choose to have a lawful fence, or he may be willing to take a chance and let stock break through a poor fence. Of course, in case he has no lawful fence he cannot recover any damage to his crops. Neither can he be held responsible for the bloating of cattle that break through his fence and invade his alfalfa.

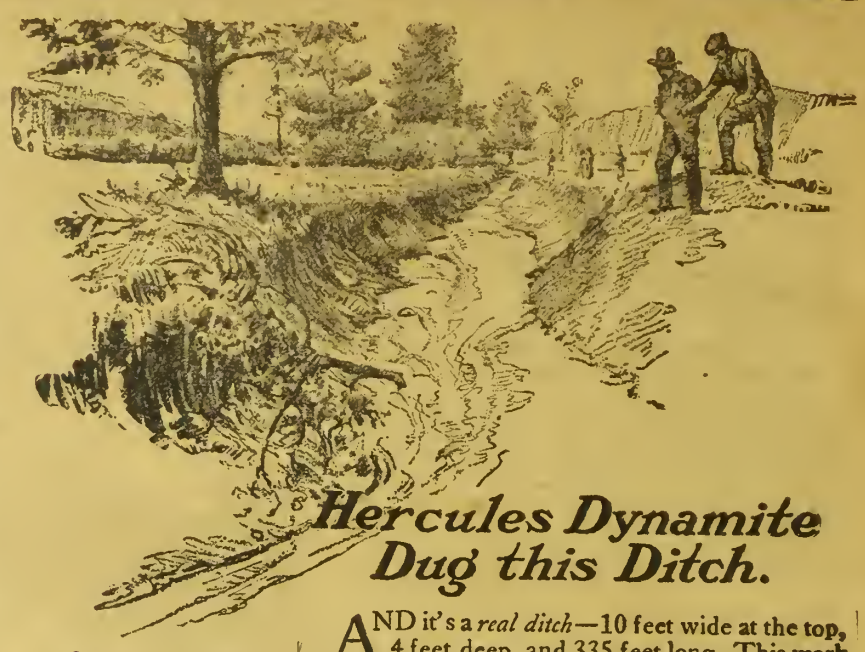
Damage to Squash Vines.

Can you tell me what is killing my squash vines? I pulled up three and found one beetle, also one white grub about ⅛ inch thick and ¾ inch long. They were about 3 inches under ground. If there is a remedy, could you tell me what it is?—J. B. F., Weld County, Colo.

If your squashes have been attacked by a worm called the squash vine borer that bores into the stems, nothing can be done by the use of an insecticide. Spraying with an arsenate of lead solution before the eggs are laid on the vine is a preventive, but when this worm once gets into the vine the only remedy is to cut it out with a sharp knife, making a lengthwise slit in the vine.

If you find little holes in the vine, the edges of which are covered by a scum or "dust," you will know the worm is there. After the worms have been cut out the cut spots should be covered with dust to facilitate healing and the vine should be covered at intervals of a few feet with damp earth, over the base of the leaves, so that new roots can be formed there. All vines that have been infested with this insect should be destroyed after the crop is gathered.

If the vines have been attacked by



Drawn from a photograph of the ditch dug on the farm of C. G. McBride, Bloomsburg, Pa.

Hercules Dynamite Dug this Ditch.

AND it's a *real ditch*—10 feet wide at the top, 4 feet deep, and 335 feet long. This work reclaimed five acres of land for cultivation.

At the left is a quotation from a letter that Mr. McBride wrote us. It tells pretty plainly what he thinks of the work done with

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Mr. McBride says:
"The entire proposition went far beyond our expectation in every way . . . . . This project was a new one to all of our people and I think it opened their eyes to the possibilities of the use of explosives that they never realized existed. I am confident that with team and man labor I could not have completed the same piece of work for less than twice the cost, and possibly not at that."

There is no question of the value of dynamite in digging ditches. At a conservative estimate one man with dynamite can dig more ditch in a day than six men with picks and shovels. Tangled roots, rocks, or stumps do not hold up the work.

Dynamite makes a *clean* ditch. It spreads the earth so evenly that there are practically no spoil banks. In many cases long sections of ditch are blasted that need *no further work.*

Send to the Hercules Powder Co. for a copy of "Progressive Cultivation." This 68-page book gives you detailed directions for blasting ditches, clearing land of rocks and stumps, planting trees, breaking up subsoil and doing many other things with the help of Hercules Dynamite.

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the squash lady-bug, the method is to hand-pick the vines. If your patch is too large for that, spray the vines with arsenate of lead. The squash lady-bug is three-eighths of an inch long and can be easily recognized by large black spots, seven on each wing, on a yellow background. Two pounds of dry arsenate of lead to 50 gallons of water will make a solution of sufficient strength to destroy these insects. The quantity can be reduced to suit the size of your field or garden. The same mixture is used in preventing insect damage to beans.

Cutting Alfalfa for Seed.

Answer to G. E. C., Adams county, Colo.:

The alfalfa pods do not set on and ripen uniformly, therefore, pods in all stages of development may be found on the same plant. It is impossible to cut the crop at a time when all the seed can be saved. If the late pods are allowed to mature the early ones will probably become over-ripe and some loss of seed will occur from shattering. The best results can ordinarily be obtained by cutting the crop when from two-thirds to three-fourths of the seed pods are turned brown. The seed in the pods that vary from a light brown to nearly green may produce seed that is viable, athough it will not be plump. As a rule it is best to cut just a trifle green rather than when over-ripe. If you let it become over-ripe there is apt to be too much loss in shattering.

The usual way of harvesting the crop for seed is to cut it with a mower and rake it into windrows just the same as though you were making hay. However, there are implements made which are better suited to harvesting than with the mower alone. A mower with a bunching and cropping attachment is good. In some sections the farmers use a self rake reaper or the binder if set low enough to catch the crop. Where bunching implements are used for harvesting the alfalfa should be put in shocks to cure soon after it is cut.

If cut with a mower it is necessary to rake into windrows for bunching and this should be done before the alfalfa becomes dry. The thing to avoid in handling is the loss of seed by shattering. The alfalfa huller is the most satisfactory implement to be used far raking. Where this is not available an ordinary thrashing machine with a hulling attachment does good work.

Strawberries on Dry Land.

Answering J. V. R., New Mexico, questions about strawberries: Everbearing strawberries need a rich well drained soil. Perhaps the floods which covered your strawberry bed deposited a sediment of raw gravelly dirt that has ruined the soil. In that case the way to bring it back is by working manure into the ground. We cannot do any more than make a guess without seeing the actual soil conditions.

You say that the roots are healthy. In that case the soil may be all right but the plants are not getting enough water. The yellowing of the leaves is an indication of lack of moisture. That may be true in spite of the fact that your plants appeared the same way last year after they were drowned out. Too much or too little water is equally bad.

As a rule strawberry plants will take a lot of water and will stand up better under too much moisture than they will under too little. In order to succeed with strawberries under dry land methods it is necessary to put the soil in condition to hold water and to put the water where the plant roots can reach it. Strawberries are very shallow rooting and they are sensitive to surface conditions. They show the effect of drouth very quickly.

Our experience with strawberries under dry farming leads to the conclusion that when plants once begin to die under such conditions such as you describe, it is best to get new plants and start over. Put your soil into first-class condition before you plant. Spade deep this fall. Apply plenty of manure and work it well into the soil. Top work your ground well next spring; get it into moist mellow condition and then put in your plants. Do not plant unless your soil is moist. Keep the plants growing. If they need moisture at any time and you neglect them they will not do well.

Give them plenty of space to grow and develop. Crowding is not good. Where you are dry farming remember that if you do not get rain at the right time you must carry water to your strawberry bed if you expect fruit.

If you have a windmill it is an easy matter to run a ditch or wooden trough or a home-made hose to the garden to carry the overflow from your water tank to the garden patch, where it will double your yield not only of strawberries, but of all your garden crops.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Lump in the Teat.

I have a cow fresh July 10 with one teat that seems to hold back the milk. When trying to milk it draws back as though the milk flow was shut off. I can feel a lump about the size of a pear at the top of the teat. Is there anything I could do to make the milk come more freely?

Also have a calf with a very large lump on the navel which has been there about ten days. Is it a rupture and is there any cure?—F. V. H., Morgan County, Colo.

Tumor formations in the milk duct are quite common and treatment has not been very successful. They usually result from a catarrhal condition following garget, or in rare instances are due to tuberculosis or actinomycosis. The duct has been opened by means of specially constructed implements but the relief is only temporary. Removal of the tumor by incision from the outside has not been generally successful. One teat after another usually becomes involved until the cow becomes useless and must be sent to the block. Medicinal treatments, such as potassium iodide, have failed. A veterinary surgeon with appropriate instruments might succeed, but I do not know of anything that you can do to restore the cow to a normal condition.

As to the calf with the swelling on the navel: If it is an abscess, it will have broken and discharged its contents by this time and diagnosis will be easy. If it is a rupture, it will be soft, and by pressing it back with the fingers the edge of the broken muscular wall can be felt. Unless it continues to grow larger, it will be better to leave it alone for one year, since navel ruptures usually disappear in growing animals.—G. H. G.

"The Heart of Virginia Keep," by Edwin Baird, author of "The City of Purple Dreams," starts in next issue.

Unhitching the horses by the light of a Western Electric Lamp

"A helper that works 24 hours a day"

"Don't think I am talking about a man. In these times men are hard to get—even to put in a twelve-hour day. Being short of help on my ranch, I thought I'd see how an electric power plant could handle some of the work. This plant doesn't do everything, but it is a big help—and on the job day and night."

A. J. Higbee

Editor's note: *Mr. Higbee is a cattle rancher near Hillrose, Colo.*

"NOW that men are so scarce, it is a comfort to know you can have one dependable helper—even if it's only a piece of machinery. Since I installed my power and light outfit—a Western Electric—I have the confidence that at any time I can call on it to furnish light, to pump water and to perform a dozen useful jobs.

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"A good provider for my cattle"

"—that's what I aim to be, and let me tell you how this powerful outfit is helping. I said that it saves a lot of trouble, but what is more important is the time saved.

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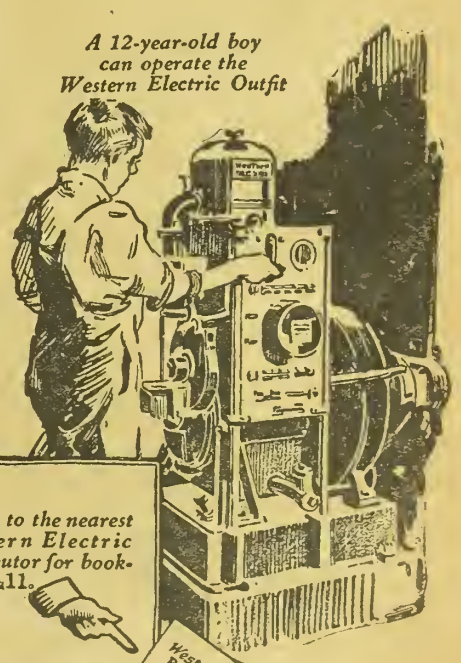

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Farming With the Head.

DR. L. S. DIJKSTRA, Holland.

The way to success is seldom reached by hard work alone, but oftener by intelligent work. The truth of this I saw a few days ago in my own country, when a farm was sold here that had had two occupants. One had worked on the farm for more than twenty years and retired from it poor; the other retired a well-to-do man. What is the reason for this difference in fortune? Simply this, that the first farmer was a hard worker with the hands. He was said to do the work of two men, but did not use his brain, while the latter was a moderate worker with a good portion of brain power.

The first farmer was a real hard worker, got up at 3 in the morning in summer time, called his wife at 4 to start cheese making and churning, had four children, which did not enjoy their due in education, but had also to work hard. The latter farmer had a wife and children, but they did not have to do as the first farmer's family did, viz: Hard work from morning till evening, and the farmer did not work hard. On the contrary, he was always present at meetings and shows, always on the road, as his old-fashioned neighbors whispered. He spent too much feed and care on his stock, bought too expensive sires and too much modern farm machinery, treated his labor too easy—in short, when entering the new farm people predicted he would be ruined in a few years, but the prediction failed, for the man succeeded wonderfully in his new enterprise.

To what factors did this man owe his success? When he started the farm, he began with building a concrete manure tank in which all the liquid manure was stored and from time to time mixed with the solid manure pile, or directly put on the field. He also bought a manure spreader and even the hard working farmer with six pairs of hands could not have done such good work.

Instead of getting up so early in the morning that dew was still on the hay in the fields, he waited till the hay was dry enough and then he started working with a horse hayrake instead of hand rakes as his predecessor did.

In the milk house a milkshed and a fat tester could be found and a well selected herd was found when he left the farm.

In a fine glass box he showed me several medals, the result of show prizes. Here I might mention a good many more results of brainwork. One thing needs mention, however, that the farmer himself and his better half were close bookkeepers, classified receipts and expenses, books were kept, a yearly inventory was made regularly and the new plans for another year were all based on the results the past year's accounting showed.

I believe every progressive farmer should follow this method or some other simple method. It is moreover not only necessary for a correct understanding of one's business, but the time will, or has already come, when the law compels persons having an income subject to taxation, to show their accounts for the past year.

I know from my own experience that many an American farmer would not stand so much drudgery as for instance the farmers of my native home, Holland, have to do, but while the whole world, including free America, is rather unsettled just now, it is not impossible that the American farmer also will be subject to some strange laws such as for instance compulsory bookkeeping.

I remember very well the old saying of my father, "First furnish your head and then you will get your home furnished of itself." He said this when he persuaded us to attend high school and we had thought ourselves wise enough with elementary school knowledge.

The same applies to our present farming in many instances. A farmer needs a good education, one cannot do at present without reading and studying, for the reader often makes the leader.

Rag Picker or Wool Producer?

Every Farm Bureau member as well as every other man, woman and child in Colorado and in America is vitally interested in the struggle now going on which threatens to destroy the sheep industry in every state of our country. The sheep owner, the wool producer, is the man facing ruin unless something is done. The people everywhere are paying the price two or three times over for clothing represented to be "all wool." When the term "all wool" is mentioned the public generally understands it to mean new or virgin wool and pays the outrageous price, but gets shoddy instead of the real article.

Shoddy cloth is manufactured from old discarded clothing picked up over the country by rag pickers and junk dealers who buy it at their own price. That price is generally very near the zero mark. Woolen manufacturers can buy this inferior stuff much cheaper than virgin wool. They have learned a trick in the game which is very profitable to them and the rag vender as well. Millionaires by the hundred is the result and you and I and the wool producer are footing the bills to pay the tribute exacted. You and your family and your neighbor and his family are wearing shoddy. You thought you were buying the real article and you paid price enough to obtain the all-wool clothing manufactured from real wool with no rags mixed with it. The very best grades of cloth now on the market are said to be made up of a scientific mixture of virgin wool and shoddy. Shoddy cloth is of varied quality. The cast-off rags are prepared by some sort of process so that new cloth may be made from the old. In order to give strength to this cloth a certain percentage of virgin wool is mixed with the old wool. The better grades of clothing and fabrics are those containing the larger percentage of virgin wool woven in.

Rag venders, junk dealers and jobbers and clothing manufacturers are becoming millionaires. The producers of virgin wool are facing bankruptcy. There is no market for wool. A billion pounds of last year's clip is still on hand. The new clip of two and a half billion pounds is waiting for a buyer. There is demand enough for this wool, but these fellows would rather use rags.

The public would like to have a genuine new article made from real wool not from second or fourth hand rags. Every buyer of cloth would like to have all cloth and clothing stamped by the manufacturer to show the percentage of virgin wool it contains and the amount of shoddy substitute. Such a measure known as the "Truth-in-Fabric" bill was introduced in congress, but the profiteers are violently opposed to it as it will spoil their business of deception and extortion. It will also save the sheep industry of America. Which occupation should be favored, the rag venders or sheep raisers?

There is no uncertainty about where the American Farm Bureau stands. Note the resolution adopted at Chicago, March 4, 1920: "Believing in honest business methods, we recommend legislation providing that where wool substitutes are used in fabrics and wearing apparel the use and presence of such substitutes shall be made known."

There is now a Farm Bureau membership campaign going on all over Colorado. Everyone interested in saving the sheep industry is urged to join the Farm Bureau in his county, as this holds membership in the state and national organization.—E. J. Leonard, Secretary, Colorado State Farm Bureau.

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is as profitable as grain growing. Successes as wonderful as those from growing wheat, oats, barley, and flax have been made in **raising Horses, Cattle, Sheep and Hogs.** Bright, sunny climate, nutritious grasses, good water, enormous fodder crops—these spell success to the farmer and stock raiser. And remember, you can **buy on easy terms**

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Condition of Land Banks.

"The Federal Land Banks are financially stronger today than at any time since their organization, and their net earnings for the month of July—$257,000—were the largest for any month in their history"—was the statement made by the Federal Farm Loan Board recently. This statement was prompted by the suggestion that in some quarters an effort was being made to create the impression that pending litigation, which has temporarily suspended the loaning operations of the banks, was otherwise impairing the Farm Loan System. Commenting further, members of the Board stated:

"To understand this readily, it should be borne in mind that the earnings of a Federal Land Bank do not, like those of a commercial bank, depend upon their current transactions. The loans of the Federal Land Banks are made for a long term of years—mostly 34½ years. On the unpaid balance of these loans each bank has an annual income of from one-half of 1 per cent to 1 per cent. This earning is fixed and certain regardless of new business. As the total amount of loans now in force is $344,475,709, the extent and stability of this income can readily be seen. The increase in net income for July is explained by the fact that, while the fixed gross income was substantially the same, the several land banks, because of the halting in their loan operations, have reduced their operating expenses, thus increasing the net income. Dividends have been paid and will be paid as usual. Funds are accumulating for the payment of November interest, which will be paid promptly. So far as bondholders and stockholders are concerned, the banks are functioning normally. Persons wishing to avail themselves of the benefits of the system must, of course, for the time being be disappointed, which is much regretted but cannot be helped. While the banks have reduced their personnel and consequently their current expenses, this has not been done to a point that would interfere with the prompt resumption of their loaning activities."

Colorado 1920 Year Book.

The Colorado Year Book for 1920, issued by the State Immigration Department, is now being distributed. The volume this year contains 248 pages, or 20 pages more than the 1919 edition. It contains 51 pages of statistical information on various subjects, and is the most complete compendium of information upon the resources and development of Colorado ever issued by any state department.

The principal improvement over the 1919 Year Book is to be found in the handling of agricultural statistics by counties, all of which is made possible by the law providing for the collection of agricultural statistics by county assessors. This law went into effect in 1919, and some of the data collected by assessors for that year were included in the 1919 volume. This year, however, it has been possible to publish completed reports on the acreage of all important crops as turned in by county assessors for 1919, as well as the production by counties for most of the principal crops, and a table showing the production of all crops grown in the state. Partial reports of assessors on acreage for 1920 also are published, complete reports from all counties having not been received at the time the book went to press.

The volume also contains a postoffice directory for the state, a directory of commercial clubs, a list of officers of incorporated cities and towns, a table showing the railroad distances of important places in the state from Denver, and the location and altitudes of the principal mountain peaks, mountain passes, lakes and reservoirs. The descriptive matter relating to the several counties in the state, which was published in the two previous editions of this volume, has been revised and brought down to date.

The legislature has provided that only 2,500 copies of the volume be published, and that copies be furnished free of charge to state officials, certain county officials and to all libraries and commercial clubs in the state. The copies remaining are sold by the department for the benefit of the Immigration Board fund, the price being fixed as nearly as possible at the cost of publishing. The book this year will sell for $1.00.

Wyoming Farmers Need Federal Land Loans.

My Dear Old Missouri Friend:

I have often thought I would write you because we were both St. Joe boys. Now I am forced to say something. First, you are quite a live wire. The Sweet Ranch letter to the professor is fine and so suggestive too, and more so to one who has been trying out this dry farming, with rotation of crops as we Wyoming people are doing. Truly your write-up about the Sweet Ranch should be read by the world at large, especially the western U. S. A.

But, Mr. Steinel, the farm loan question you have so ably presented is one of the biggest things confronting the western farmer today. So very few realize its far-reaching effect should a check be placed upon it by a circle of sharks whose sole aim is selfish gain.

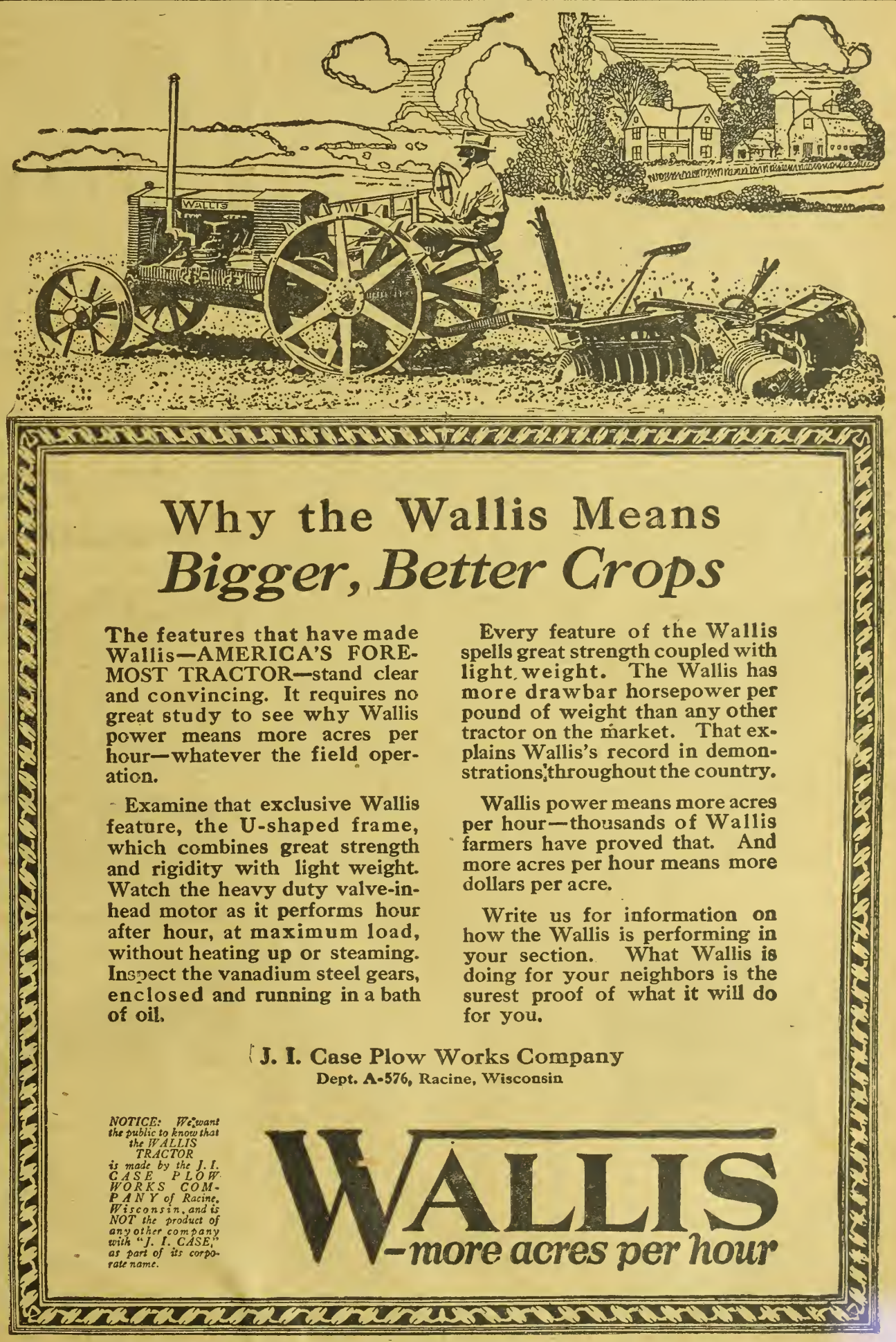
I am so glad you are doing what you are along those lines you have so forcefully presented. I have been thinking about writing our Senator, the Hon. John B. Kendrick, regarding the outlook as I see it. He is so very resourceful when we need a real man at the helm.

Since I last wrote you I attended (as delegate) the International Farm Congress, September 25, 1919, at Kansas City, Mo. I was one of eleven chosen by our Governor Robt. D. Carey, and while there I was very deeply impressed with the great necessity of our farmer forces becoming more painstaking and aggressive in order to maintain their station in the business world, which was rightfully theirs. The more so, when we are confronted with the great national adjustment of affairs which came as a natural consequence after so great a war as was ours to take part in.

You well remember how we were asked to "Hooverize" while the war waged so hot; then how the farmers were called upon a second time to lay a reconstruction foundation (as it were) and how signally the farmer did what he could. Then no sooner had matters begun to look good than the big industries began to place the whole burden of the great undertaking upon the shoulders of the food producer and today what do we see? It is truly amazing how deftly the big bosses have conjured up one excuse and another to justify themselves; passenger fares up 20 per cent; freight rates higher and oh, so many things like those and yet the farmer pays the whole bill. Mr. Steinel, I am only a dry farmer, but if I had a hold on the reins of the government like some of our congressmen, I sure would unravel some things most gracefully to my satisfaction. I see I have branched off entirely from what I aimed to say when I began this letter, and if I keep on I fear you may think I'm talking through my hat.

The Federal Farm Loan question is what I had in mind to begin with. I presume you can meet few men who know more or better than I the status of the financial condition among the Wyoming farmers. I have visited every farm in a space of 24 miles square from January 2 to March 13th last, taking the United States census and questions asked and answers given gave me a chance to know what the conditions are and I want to say should a decision be unfavorable to the Federal Farm Loan, its results would be disastrous to one-fourth of our farmer citizens, for as I see it a panic would follow. It is inevitable; too far-reaching to be otherwise. Yet why need I write this to you? Suffice to say your head is level and facing the enemy.

In conclusion, will add while in St. Joe in 1919 I saw many old-timers, yet many were dead and gone. Just a few of the old landmarks standing. It looked more like a new city to me. I have not been to Denver since April, 1914, but should I pass that way I shall be pleased to have you present me face to face with Thos. J. Putnam, the finest impersonator of his day.—WARREN DAVIS, Shawnee, Wyo.



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Dairying and Hog Raising

H. A. LINDGREN

All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, Western Farm Life, Denver, Colorado.

When Grain Feeding Pays.

Such a question may seem foolish to men who have had their dairy experience in the east or middle west, but there are hosts of western dairymen who do not feed any grain and are not as yet convinced that it will make them more net profit to feed grain.

With prices of grain as high as they are now the inherently low producing cow will probably not pay a profit on grain where alfalfa hay is abundant. But will the inherently low producing cow pay even for good alfafa hay with labor and overhead as high as it is now? Most dairymen will say "no."

What about the other cow, the one that might be a high producer if fed right? Will it pay to feed such a cow grain? The best answer is that the most prosperous and most progressive dairymen, even in the western states, feed grain. Are they really making more net profit than those with good cows that do not feed grain? The cow testing association records of these grain-fed herds in which the boarders have been culled almost always show more money at the end of the year, over cost of feed than similar herds not fed grain. Where excellent pasture is available the difference is not so noticeable, but even in these places the most profitable herds are the grain fed herds. Here are some figures secured in a section where alfalfa hay is relatively cheap and grain very high:

	Profits per cow above cost of feed, per year
4 herds, grain fed	$115.00
4 herds, fed no grain.....	85.00
Difference	$30.00

If the grain had been purchased more cheaply by co-operative buying the result would have been more in favor of the grain-fed herds. This is only part of the story. The effect of grain on developing young cows, is worth while even if they only paid for the grain.

With a cow freshening and giving less than a pound of fat a day, unless a young heifer, it probably will not pay to feed grain or even keep the cow unless she is extremely persistent. For cows freshening and giving a pound and a half of fat a day, or more, eight to ten pounds of grain a day will keep the cow in condition and insure a more persistent flow of milk. For a cow that has been milked six months and is still giving a pound of fat a day, four to six pounds of a good grain mixture will keep her in condition and insure her persistency throughout her lactation period. It does not pay to feed less than four pounds of grain to a cow in milk nor less than two pounds to a dry cow. The grain fed should be a mixture of several grains. It should be palatable and composed of those concentrates which will tend to some extent at least to provide a balanced ration.

These amounts of grain are minimums and if you have never fed grain before it is better to start with the smaller amounts. Feed each cow according to her known characteristics and to her production. If you are afraid to feed all your cows grain, try it out on your best cows. Don't stop at anything less than a six-months' trial. The effect of grain feeding is shown more in its ability to hold a cow to a good milk flow rather than in any sudden increase at the time of feeding, and after all this is what counts because a cow is supposed to work by the year and not just while she is fresh.—C. V. Castle, Western Office Dairy Division, U. S. D. A.

Accredited Herds.

Progress is steadily being made along the line of accredited herds in the country. However, few of the stockmen seem to appreciate its value to the industry. One of the big things that we are duty bound to accomplish is the prevention of tuberculosis in the human family. No one would knowingly sell milk from tubercular cows to families where children use it as the main portion of their diet. The time will soon come when customers are going to demand that the source of their milk be free from this disease. Nothing is of greater assistance along this line than the accredited herd plan of the federal government.

Quite a number of purebred herds are now included on the list. Prospective purchasers are looking for breeding animals preferably from accredited herds. Animals being tested in that way can be shipped from state to state without the usual testing.

Colorado is a little behind in this work because of the lack of state assistance in the payment for animals found to be tubercular. Without state aid, it is not possible to get aid from the Federal government. The plan is to present a bill to the next legislature which if passed will take care of this need.

The testing work has been done by the state and Federal veterinarians up to this time without cost to the owner of the herd. However, the loss of any animal reacting has been stood alone by him. With state and federal aid, he would be reimbursed so that his loss would be very much less.—H. A. L.

Preventing Hog Diseases.

Keep hogs thriving; strong, healthy hogs resist cholera. Quarantine every hog dead from cholera; the law requires it. Lice, worms, and insanitary conditions weaken hogs and invite cholera.

Disinfect hog yards occasionally with unslaked lime; it's good cholera insurance. Serum and sanitation make the best preparation for the warfare against hog cholera. Keep cholera hogs and carcasses away from the stream and insist that your neighbor do the same.

The straw shed for hogs is almost sure to be either damp or dusty. Either condition invites disease. Keep gunny sacks saturated with crude oil where hogs can rub against them. Raise more hogs and fewer lice. Kill lice with crude or fuel oil sprinkled on the hogs at feeding time applied to rubbing posts, or used as a two-inch layer on top of the water in a dipping tank.

Cough and pneumonia from dusty beds may incidentally be prevented if louse-infested beds are oiled. Breathing dust may cause death from pneumonia and certainly renders hogs less resistant to cholera.

The University of Missouri College of Agriculture has carefully tested each of these remedies and so have thousands of good farmers. They have stood the test, but are not substitutes for serum treatment, for they resist but do not entirely prevent cholera. These ...-producing measures would pay ... cholera did not exist.

...inkle freshly slaked lime about one-sixteenth of an inch deep over the lots, sprinkling quarters once every month or two. At this rate a barrel will kill the germs on about 1,280 square feet of lot space. Combat worms by feeding a mixture of 4 parts of charcoal, 3 parts of copperas, 3 parts of common salt, 3 parts of Glauber salts, 3 parts of sal soda, 1 part sulphur. Mix in hundred-pound lots and keep in a dry place where the hogs can help themselves. It is a good "conditioner" and has been thoroughly tested.

Pays to Test Dairy Cows.

"The man who persists in milking low-grade and scrub cows just because he thinks they require less feed and attention is not only fooling himself, but is actually robbing his own pocketbook," says E. M. Harmon of the University of Missouri College of Agriculture. Through our cow testing associations we are constantly finding that it is the highgrade and purebred dairy cows of high producing ability that are making the real profits on the dairy farms.

In the Cape Girardeau County Cow Testing association which recently completed a year's work, we found that

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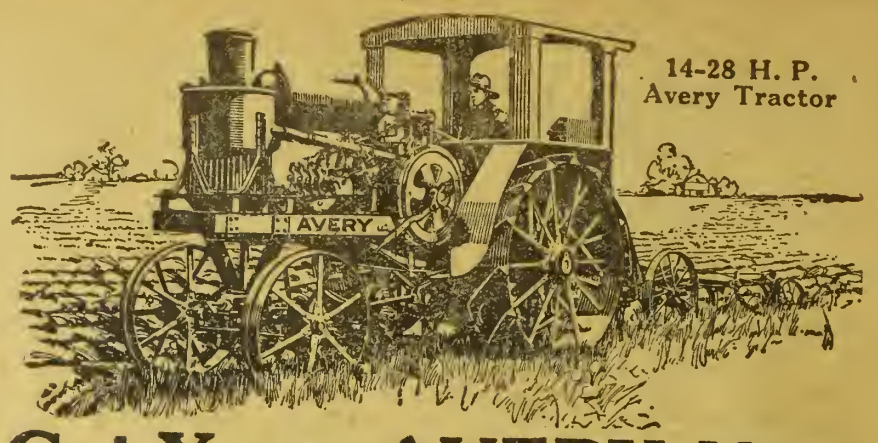

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after charging the cows with all feed consumed and allowing the nominal sum of $60 a year per cow for all other expenses such as labor, interest and veterinary fees, that they were divided according to profit as follows:

	Production in Lbs. Butterfat.	Percentage of cows in this class.	Aver. Profit.
Class 1	....350 to 450	4	$111.10
Class 2	....250 to 350	41	53.24
Class 3	....150 to 250	41	1.72
Class 4	.... 50 to 150	14	*35.26

*Loss.

From this data we will see that one of the 400-pound cows will produce as much clear profit as 64 cows in the 200-pound class. A further analysis shows that there were enough actual money losers in the 200-pound class to make a total of 36 per cent of the cows below the line of profit. It is the dairyman who is getting rid of these money losers who is making the real profits out of dairying. The cow testing association is the surest mehod of building a profitable herd.

Gossard's Berkshire Sale.

Three world's record prices were broken at the epochal Berkshire sale held August 4th at the Gossard Breeding Estates, Martinsville, Ind. Epochal Laurel, an 11-months-old Berkshire boar, sold for $6,500, a new world's record price for a Berkshire boar at public auction. He was bought by Cyril Maitingly, Tipton, Ind. This boar is a son of Laurel Champion, out of a daughter of Epochal, which gives him a combination of the blood of two of the most famous of all Berkshire boars. Laurel's Epochal is only one of a number of boars of this family that have sold for high prices, as a half brother of Laurel's Epochal brought $5,000 a few months ago.

Laurel's Epochal, 11-months-old son of Laurel Champion out of an Epochal daughter, sold for $6,500.

The second world's record was made when the sow Epochal's American Mayflower 6th, brought $3,900. She went to Paul Fitzsimmons, Chester, N. H. This sow was one of the Gossard Breeding Estate's show herd last season, was a big winner at the largest state fairs and at the National Swine Show, and is a little sister to Epochal's Thor, the first prize junior yearling boar at the National. Epochal's American Mayflower 6th was safe in pig to Laurel Champion, thus bringing together the same combination of Epochal and Laurel Champion blood lines which brought the record price for Laurel's Epochal.

The third record broken was that of averages for any public sale of Berkshires. The sale averaged $665, the thirty-five animals selling for a total of $23,285.

Eradicating Loco Weed.

Loco, meaning crazy in Spanish, is a condition that has been popularly applied in the west to a disease of horses, cattle and sheep, which results from eating the loco weed.

The toxic character of this weed has not been doubted by the more up-to-date stockmen, although there are some who will persist in talking about worms, gnats and flies being the cause. Of the three wel known varieties of loco existing in New Mexico, the white causes more loss than either of the other two varieties. White loco may be found all over New Mexico. The purple or Texas loco covers a large area, while the blue loco or rattle weed covers the western half of the state. While all three varieties cause losses in livestock, the purple and blue varieties are more harmful to horses. Sheep become addicted to the use of this weed. The writer once saw a herd of 400 bucks with over 75 per cent of them locoed. As sheep are generally in charge of a herder, they can to a large extent be prevented from eating the weed.

Locoed horses are dangerous and should not be put to use, unless the driver places little value on his life.

Beef cattle, if not too far gone, can be taken up and fed and turned into beef. The writer has seen a number of instances where this has been practiced successfully. In years of plentiful rainfall in New Mexico it generally happens that there is a bountiful crop of loco the following spring, and if there is a short grass crop, and no other food is within reach, livestock eat eagerly of whatever is green. If loco is abundant they become addicts and unless feed is given them or they are changed to other pastures, they will become its victims.

Feed is the most important factor in getting results from loco disease. In handling range horses suffering from this malady great patience and care must be exercised if the best results are to be obtained.

Fowler's solution of arsenic in two-dram doses night and morning, together with some good feed will give results. Strychnine can be given hypodermically in ⅛ grain doses night and morning for a week. In case of cattle this could be increased to ¼ grain for a like period, but a close watch should be kept on the animals.

Loco eradication was undertaken on a large scale by Mr. Antiene Meloche at the T O ranch in Colfax county, where about 20,000 acres were cleared at a cost of something like 22 cents per acre. Mr. Meloche engaged the high school boys of Raton during the summer, furnishing them board and lodging and a certain sum for their work. All the plants were dug up, and a liberal supply of salt put where the plants were growing, and I understand excellent results were obtained. There is no excuse for loco growing in small tracts (farms), for the small outlay per acre is repaid to the owner a hundred fold. In the early spring before farming operations commence, a survey could be made of the farm and the loco spots marked. Later these could be dug up, the growing places salted and the dried plants destroyed. If these suggestions were followed loco disease would in a large measure disappear from the farm. —Dr. E. P. Johnson in The New Mexico Farm Courier.

Getting Ready for the Sale.

It is always a good idea to get the hogs in the sale pavilion or barns several days prior to the sale, as by doing this the hogs get accustomed to one another and their temporary quarters. Then if you are going to do any work on them it always pays to start in plenty of time so you will not be rushed at the last minute. It is remarkable what a marked improvement in the appearance of the animals a little work will do, such as trimming the ears and tail and brushing the hair out smooth with a little oil. We have always believed that work of this kind is the most profitable time and money we can spend.

Get everything ready beforehand so that when sale day comes there isn't a nail to drive or a hog to number. The sale animals should be all ready for the inspection of prospective purchasers as soon as they arrive. Then another advantage to having everything ready before the sale day, you are not hustling around looking after a thousand and one jobs at the last moment, but have plenty of time to mingle with your crowd and answer all their questions. Have everything as comfortable as possible. If you can put a stove in the building, by all means do so, as when a man has to sit around half frozen, he is not in the best mood to buy hogs. Have plenty of help, so that when the sale starts everything will move along with clock-like precision and speed, and there will be no bothersome delays waiting for the hogs to come in the ring. Have your selling order made out before you commence the sale, and have one man to handle this and oversee getting the hogs in the ring in their proper order. Have him familiarize himself with the location of each number, and everything will move along smoothly. Remember that this is your day and you have been working hard for this event for six months, or possibly a year, and that the auctioneers and fieldmen are there to help to the best of their ability.—Duroc Bulletin.

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It is a verdict — 100,000 strong — for qualities and abilities no other car can share. It fixes the specific reason for dominance of a type, unlike any other car.

This chief issue is Hudson endurance. And it is exclusive, because it results from a patented principle. Others cannot use this invention, which by reducing vibration to within 10 per cent of vanishing, made Hudson's unequalled reliability marks possible.

Its Endurance Limits Still Undiscovered

Years must elapse before we know the final limit of Super-Six endurance. We tried to establish those limits by test. Speedway trials, a double transcontinental run that no other car ever endured to finish, and the abuse of high-speed racing, failed to reveal the point at which Hudson endurance would yield. But they did establish that the Super-Six possessed greater durability than any other car ever proved.

The earliest Super-Sixes, built nearly five years ago, and still serving with undiminished satisfaction, testify how car life is practically doubled through this invention.

Hudson Motor Car Company, Detroit, Michigan.

(4005)

An Early Silo Experience.

As this is the silo filling season, I am reminded of that first silo of ours way back in 1886. It was on our old Wisconsin farm not far from Madison that my father, some thirty-four years ago, called us boys to one side and proceeded to talk about a silo. He told how they were able to preserve corn so that it would be succulent and green even in winter. He said that the Wisconsin Experiment Station had thoroughly tested it out and demonstrated that they could keep silage in good condition for a year or more. He also spoke about silage being a very cheap feed and one that would be most productive when acres were considered. He figured how it would be possible to get from fifteen to twenty tons from an acre of corn and that this feed was high in carbohydrates. To balance the carbohydrates he would get cottonseed meal from the south, which in those early times was a very cheap by-product principally used for fertilizer. He also told how silage could be fed with clover hay and make a splendid balanced ration. I was a pretty young boy to take much interest, but I do recall that in a very short time I was nailing boards on some 2x6's set upright in the barn. As I recall this room it was something like 16 feet square. We boarded up with matched flooring two layers, putting tarred paper between. This made a bin 16 feet square and about 20 feet high. We had a cutter which had a short carrier. I think it would lift the feed about 8 or 10 feet and in order to elevate the corn to the top of this bin it was necessary to shovel onto a second platform. The silage corn had been planted in the spring and a southern variety had been used, my father having in mind that he would build a silo and if not, the corn would make a splendid lot of forage. This corn, as I recall it, was from 12 to 14 feet high about the 10th of September. It was on a fertile piece of ground, sandy in character and had been liberally spread with well rotted barnyard manure. I believe it did grow fifteen to twenty tons to the acre.

Of course, the news spread through the country about this silo, for certainly it was the first one anywhere around. At filling time we had quite an audience and some good old corn raisers were in the crowd. All were thoroughly convinced that the whole thing would be a failure. They had it planned that the silage would be smoking and rot; others, that it would cause spontaneous combustion and blow up, taking the roof of the barn and such other equipment as might hang to the timbers. Others believed it would poison the stock, while others only groaned and bewailed the fact that it was a terrible waste of good corn. There may have been a few who had faith that the scheme would work. If there were they did not make it known to me, or at least I did not hear them commenting.

It was quite a job to fill this silo. I remember the fellow up on the scaffold had to use a scoop shovel and throw it up into the silo. We would cut faster than he could scoop and he would give out. I must admit that it was a job that required a stronger back than mind. It was easy to see that a few feet added onto the carrier would do away with two men and many slowdowns and rest periods. The corn was cut with a sled having big knives on each side. This we discovered was far superior to the hand corn knife system. The silage was thoroughly packed, mostly by boys, yours truly included, who wrestled or did gymnastic stunts on the surface. After all the corn was in we covered the top with tar paper and laid a lot of boards and lumber over this. I recall my father said the usual custom was to put a few tons of rock, but he was going to experiment and use a less weighty but more practical method.

This first silo proved to us that the silo was practical, economical and altogether wise for the feeding of both beef and dairy cattle. We gave it a pretty good trial, wintered some colts and a mare or two and only used a little straw and occasionally some hay. We fed several steers and produced very economic gains. Their ration was forty pounds of silage and two or three pounds of cottonseed meal per day. They also had access to good oat straw. The dairy cows received from twenty-five to thirty-five pounds and a grain ration with good clover hay. Of course, this silo did not keep the silage well. Much spoiled in the corners, but it demonstrated to us that the process was all right and it is gratifying to know that the good old state of Wisconsin now claims the use of more silos than any other state, perhaps double. I think that they are now using close to 75,000 silos in Wisconsin and still it is one of the best states in the Union to sell silos. Though this silo experience was thirty-four years ago I am inclined to believe that from this early test we can still draw some valuable conclusions. It will take about thirty-four years more to get some men to see the benefit of the silo, but they are few—practically all of the thinking, reading men of today recognize the value of the silo and know of its true worth. They have learned that it is the cheapest source of carbohydrates, which is the bulk of the ration for our animals. They know it is best fed with some high protein food in roughage such as alfalfa, clover or cow-peas. With grain and concentrates it can be balanced by oil meal and cottonseed meal or bran and oats.

Improvements in machinery have made the silo much more valuable. The light tractor will soon be pulling the corn binder and I believe will elevate the corn to the wagon. The same tractor will pull this to the cutter and the cutter will cut and elevate the feed so that the heavy work will all be done by machinery. This wonderful new era which we are approaching demands that we study carefully this great feeding question and we will have to meet the present high costs of both labor and living. Machinery and economic production must be used to their limit. The cow-keeper must figure carefully the earning of his acres. The summer silo is sure to replace much of our present pasture land. Fighting flies in a dry, weedy pasture is not only detrimental to the cow but is questionable economy from an acre-earning standpoint. With a summer and winter silo and some good fertile ground put into corn and that in the silo, wonderful improvements can be made in profitable dairying.—A. L. Haecker.

Began on the Farm

At a luncheon which they attended as guests of honor some time ago, the following men stated that they began life as farmer boys:

Judge E. H. Gary of the Steel Corporation.
F. W. Woolworth, the originator of the 5- and 10-cent stores.
Darwin P. Kingsley, president of the New York Life Insurance Company.
Frederick T. Haskell, vice president of the Illinois Trust Company of Chicago.

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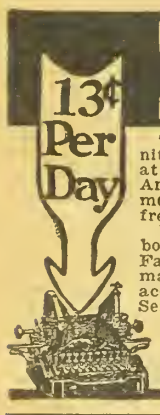

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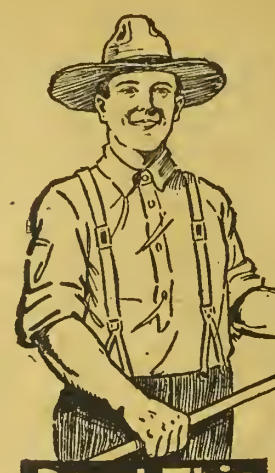

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Why Milk Is Essential.

The National Dairy Union is scrutinizing all the government publications with reference to their statement of the facts about the presence of vitamines in butterfat and whole milk and the absence of these vitamines in the oils and fats from which margarine and milk substitutes are made. In the near future it is expected that a statement will be issued pointing out the government bulletins which make this distinction plain and those in which it seems to have been forgotten.

Wisconsin Bulletin No. 291, "Milk Necessary for the Nation's Welfare," and Connecticut Bulletin No. 215, "The Food Value of Milk," tell the facts in a strong and vigorous way, so that any one who reads them will have no doubt about the misrepresentation in favor of margarine when it is claimed that its food value is the same as butter, except in some minor particulars not fully understood.

The facts are that margarine is a fat, and as a fat has a food value less than lard or suet. Butter is a vital food which contains the fat soluble vitamine in its most concentrated form. Butter has a position in the diet of value and importance unequalled by any other food, and unapproached by any substitute or imitation known to food commercialism. There is nothing new about this fact except its scientific proof. Every mother from the beginning of time has recognized the necessity of milk and butter in the diet of her family. Every doctor has known it, every person who has a normal taste feels instinctively the absence of something vital in any fat other than butter. It only remained for Dr. McCollum, Dr. Hopkins and others to establish the nature and occurrence of this vital element, and now this has been done beyond question.

On this subject read the following from Bulletin No. 291, Wisconsin Agricultural Experiment Station, pages 12, 13, 14 and 15:

"Vitamines are as yet unidentified chemical substances in foods and are absolutely necessary for growth and

reproduction. Without them no growth will take place. If we take such a mixture of food stuffs which do not allow an animal to grow and stir into it a small quantity of egg yolk, say for a pound of ration an ounce of egg yolk, growth can be induced. The same result would be obtained if we had put in an ounce of evaporated milk instead of the egg yolk. Suppose next that we take all the fat out of this satisfactory ration by extracting it with something that dissolves fats. It will be found that though the ration will be able to maintain young rats without any increase in weight for about a month, it will no longer be able to induce growth. Only on restoring the extracted fats to the ration will growth be made.

"A similar result could have been obtained by adding butterfat or fats obtained from certain animal organs, but other fats such as lard, almond oil and cottonseed oil would not have brought about the same result.

"These facts might well cause us to stop and think. Because of the fact that some fats naturally contain substances necessary for growth while other fats do not contain such substances, there has arisen the necessity of speaking of the presence or absence of a fat soluble vitamine.

"There is a tendency to use plant oils as substitutes for butterfat, even claiming for them a value equal to that of butterfat. No plant oils so far investigated—and these include cottonseed oil, almond oil, peanut oil, cocoanut oil, and sunflower seed oil, contain the fat soluble vitamine in appreciable quantities. It is false to claim these as substitutes for butterfat.

"We do not condemn them, for they are valuable food products as sources of energy and their use for that purpose should be encouraged, but they should sell under their own banner and be used in nutrition for exactly what they are worth. To remove the butterfat from whole milk and replace it with cocoanut oil and then claim that the product is equal to whole milk for the nutrition of growing children is not true."

Learns That Testing Pays.

If John Geraghty of Clayton County, Iowa, were asked whether the cow testing association is profitable to its members he would answer "yes," most emphatically. He knows, because as a member of the McGregor Cow Testing Association he has proved its value. He says that it has cost him only $50 to belong to the association for a number of years, whereas his books show that it has been worth at least $1,500 to him.

To illustrate how the test association has been profitable to Mr. Geraghty, it may be stated that it showed him how to increase his butterfat production 85 pounds per cow in the past year. He discovered through the test work of the year previous that certain feeding methods brought the best results at the pail with his cows. He therefore applied those methods during the last year with the result that his average production per cow was increased from 301 pounds of butterfat to 386 pounds. The association has also helped him to weed out unprofitable cows and determine those which made him money. As a result his average production per cow has been tremendously increased. Mr. Geraghty thinks these are sufficient reasons for backing the association.

Care of the Young Pigs.

Feed and care of the young pigs brings the best returns of any during the life of the hog. Too often we fail to realize that we need to start looking after the litter as soon as it is born or even before. The sow should be in good condition but not excessively fat. She should be given such feeds as will put her in good shape for farrowing.

When the pigs come they should be given every possible chance. As soon as they are a few days old, they will begin to eat with the sow. The feed the sow gets should be such as to induce a milk flow. The same feed can be used for the pigs. Equal parts cornmeal, ground oats, and bran, with an addition of 5 to 6 pounds of oil meal to every 100 pounds of grain, this mixture has proven a very good combination for sows and pigs.

When the pigs are two to three weeks old they should be provided with a creep in one corner of their quarters. The feed mixture should be kept there at all times, so that the pigs can get free access to it without interference from the sow. It is certainly surprising to see the results from this treatment. The pigs will gain very rapidly and grow good frames. They can make a pound a day until they weigh 60 to 80 pounds. This gain costs less than any other during the lifetime of the hog. As the weight increases there is more feed needed for maintenance and less is used for growth. If more attention were paid to this principle in all forms of livestock feeding there would be less complaint about losses in feeding operations.—H. A. L.

Test Is Abnormal.

Answer to C. P. T. concerning the test of milk from Ayrshire cow:

The average per cent of fat in milk is about 3.7 per cent for all breeds of cows. Very seldom we find a cow that tests more than 6 to 6.2 per cent, unless something is abnormally wrong with the cow or the sample has been taken in the wrong way. If your tester has had experience in testing, as he no doubt has, there is no reason for his making any great error in doing the work. It is very important that the milk be stirred thoroughly before a sample is taken. All of the milk should be taken from the cow and sample taken from the entire amount. A fair sample can be obtained if samples of both night and morning milk are taken and mixed together for the test. Very often when farmers take their own samples they fail to appreciate the necessity of stirring the milk. Sometimes they milk directly into the sample bottle. All of this would tend to cause a wide variation in the results. On the other hand if the sample had been taken properly I would be inclined to think that there was something abnormally wrong with the cow on that particular day. I have known samples to run as high as 8 or 9 or even 10 per cent when the cows were under some physical ailment. I would suggest that you try getting another sample from her.—H. A. L.

Trouble in Making Ice Cream.

We have been using a mixture of four quarts whole milk (about 3.8 test) and one quart separated cream, 29 test. After freezing we find that a great deal of the cream sticks to the sides of the can and the paddles, just like sweet butter, and part of the time chunks of butter are found all through the ice cream. We have tried different speeds in turning the freezer, but it doesn't seem to make any difference. What is the trouble?—C. W. C., Douglas County, Colo.

It is rather difficult to account for your trouble, but I rather think you have some abnormal condition in the milk. I would suggest that you try heating the milk and cream to about 165 degrees before using it. This may reduce the viscosity and do away with the trouble. Stir the milk or cream while it is being heated to prevent scorching.—H. A. L.

Killing Off Cabbage Bugs.

Western Farm Life:

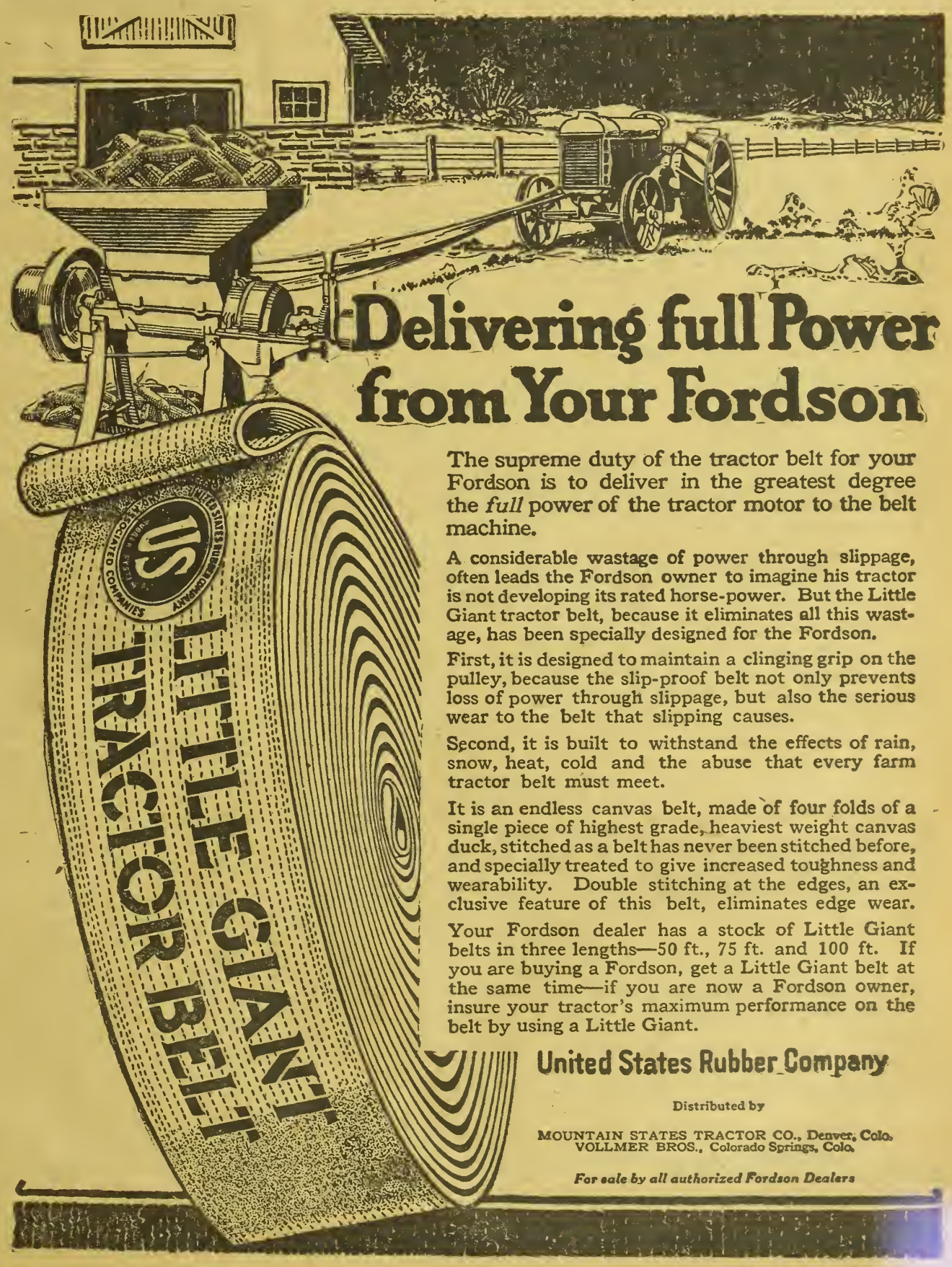
Your paper came to my notice with an article describing the Harlequin cabbage bug in the issue of August 15, and I wish to state that these bugs were very plentiful here during the spring and in experimenting with them I find that early in the morning they will be gathered in clusters on the plants and are easily killed by dusting them with a good insect powder. In this way we got rid of most of them when we got a hail storm here that cut off the vegetation and what few were left either were killed or flew away, as I have not seen any since.—J. I. Gingery, Earl, Colo.

Control of Cut Worms.

Please send me a recipe for the control of cut worms.—N. R., Utah.

For a small garden use one peck of dry bran. Add four ounces of white arsenic or paris green and mix thoroughly with two gallons of water, in which has been stirred one-half gallon of sorghum or other cheap molasses. For a large garden use one bushel of bran, 1 pound of the arsenic mixed with eight gallons of water containing one-half gallon of molasses. This is enough for treating four or five acres of cultivated crops. After the mash has stood for several hours scatter it in lumps the size of a marble over the garden where the injury is beginning to appear, about the bases of the plant. Apply late in the day so as to place the poison about the plants before night, which is the time when cut worms are active. A second or third application may be necessary. Great care should be exercised in using this poison as it is deadly to livestock and children. Clean cultivation and crop rotation are advisable, as are also deep fall plowing. Experienced growers often find it profitable in small gardens to hand pick the grubs.

"The Heart of Virginia Keep," by Edwin Baird, author of "The City of Purple Dreams," starts in next issue.



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Your Fordson dealer has a stock of Little Giant belts in three lengths—50 ft., 75 ft. and 100 ft. If you are buying a Fordson, get a Little Giant belt at the same time—if you are now a Fordson owner, insure your tractor's maximum performance on the belt by using a Little Giant.

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Uncle Sam's Hired Men.

This is another of a series of articles this publication is running, in co-operation with the U. S. Department of Agriculture, to acquaint our readers with the type of men who are making possible the wonderful service the department is rendering and stands ready to render our readers, that those not now availing themselves of these services may do so.—Editor.

It will be recalled that in Greek mythology Argus, the son of Zeus and Niobe, had a hundred eyes. George Livingston, Chief of the Bureau of Markets, United States Department of Agriculture, has but two eyes—being just an every-day human being—but his friends say that his vision is better than Argus' ever was. It has to be good to

George Livingston, Chief, Bureau of Markets, U. S. Department of Agriculture.

see all sides of the big farm marketing problems of today and then to look after 100 field offices distributed throughout the United States, as well as to direct the activities of some 1,300 employes who are trying to solve them.

But going back a little farther, George Livingston first saw the light of day on September 14, 1886. Thereafter, he spent 18 years on a farm. During that time he saw a great many things. Other people saw them too. But whereas others sat down and grumbled at the hard lot of the farmer, George Livingston determined to apply corrective measures if he ever got the opportunity. At the same time he perceived that Mr. Opportunity might fail to put in an appearance, so he donned his hunting togs and went after him.

At twenty-nine G. L. was an authority on grain and grain marketing. He had graduated from the Ohio State University and thereafter spent five years specializing in agricultural and marketing methods in the capacity of instructor and assistant professor at various universities. His post-graduate course at Cornell University subsequently led him to Europe to study agricultural practices there. Then he joined the Bureau of Markets. His executive ability and genius for organization were soon recognized and four years later he was appointed chief of the bureau.

For more than half a century agricultural experts and agencies have devoted almost their entire attention to production problems. But these experts are now agreed that the question of marketing is of equal importance, and that the present marketing system is wasteful and inefficient in many spots. They say that with the present methods farmers lose millions of dollars annually. More important than that is the economic waste caused by the quantity of food actually lost.

It is only comparatively recently, however, that any organized effort has been made to develop the machinery of marketing to meet the nation's requirements. And with the United States leading the world in the maintenance of a government agency to study and devise new marketing methods, economists and students of food distribution problems everywhere are watching closely the results secured by the Bureau of Markets and the man who directs its activities.

Already conspicuous achievements have been secured by establishing standard grades for farm products, reducing waste caused by faulty storage and shipping methods, and lowering costs of distribution of some agricultural products. One or two examples will indicate what it is possible to accomplish by improving present marketing methods.

By developing an inexpensive storage house for sweet potatoes and widely advocating its use the loss by decay of the sweet potato crop has been reduced from 25 per cent to 2 per cent—a saving of about $2,000,000 a year.

The president of a national bank in Marshall County, Tex., has stated that the service rendered by the Bureau of Markets in connection with the assistance given cotton growers in grading and stapling cotton before sale has been worth $150,000 to the county. Another prominent man in Hall County, Tex., states that similar service performed there has been worth $200,000. Hundreds of letters containing statements such as these regarding all agricultural products are continually received by the bureau.

G. L. considers that the standardization of farm products and the containers in which they are packed is fundamentally the most important work being performed by the bureau; a work that is basic to all improvement in marketing, for without established standards and grades there is no recognized basis for buying and selling; no common language by which the parties to a transaction may understand each other; no uniform standard of quality upon which values and prices may be based.

Mandatory standards have been fixed for American upland cotton, including grade, color, and length of staple; for shelled corn, wheat and oats; and for climax baskets and containers for small fruits, berries, and vegetables. Permissive standards have been recommended for white potatoes, sweet potatoes, Bermuda onions, strawberries, Sea Island and American-Egyptian cottons, and tentative standards have been formulated for some other commodities. There is urgent need for the standardization of hay, wool, livestock, dairy and poultry products. In the matter of hay alone many farmers have stated that nine-tenths of the losses sustained in the hay business are due to a lack of standard grades and a uniform impartial inspection service.

Mr. Livingston also believes that the economic waste caused by shipping products to glutted markets and away from under-supplied markets, will be prevented by the use of the Bureau of Markets news service which many farmers find of inestimable value in marketing their produce. These reports cover livestock and meats, poultry and dairy products, fruits, vegetables, peanuts, cotton, hay, feeds, and seeds. The data are secured from most reliable sources by special representatives at the markets, and by means of a reporting arrangement with 474 railroads. The canteloupe growers and shippers of California state that this service, together with the assistance given by personal representatives of the Bureau of Markets, have saved them $1,000,000 in a single season.

The daily, weekly and monthly market reports and summaries showing market conditions, prices, movement, supply and demand in connection with livestock, meats, wool, hides, and skins; the preliminary standardization of classes and grades of these products; investigations of waste and loss in marketing with suggestions for improved methods, and stockyards supervision calculated to detect and prevent dishonest practices have effected a stabilization of the livestock markets and a saving of millions of dollars, directly and indirectly, to the producers, shippers, and handlers concerned.

Another important factor in marketing is the food products inspection service established by the bureau, by the use of which shippers and others interested can obtain certificates attesting the condition of their perishable products received at central markets; a service that facilitates the distribution of the products covered, hastens the release of cars, lessens deterioration and waste on account of delays resulting from dispute as to the condition of products, and prevents unfair trade practices.

Then there is the organization of farmers' co-operative associations—permanent, economic institutions that have a far-reaching effect. There are now more than 14,000 farmers' co-operative associations in the United States, in the organization of many of which the bureau was called upon to lend assistance. A staff of experts is maintained to study practical methods of co-operative marketing and to place the results in the hands of the farmers.

"The Bureau of Markets is endeavoring to devise the quickest, most direct, and least expensive methods of getting products to market," said Mr. Livingston. "Slipshod methods must go, for the new methods will be better.

"Of course, it must be appreciated that the job cannot be done overnight. Present marketing methods are the product of evolution, and better marketing practices must come through gradual improvement in methods and procedure. It has taken decades and

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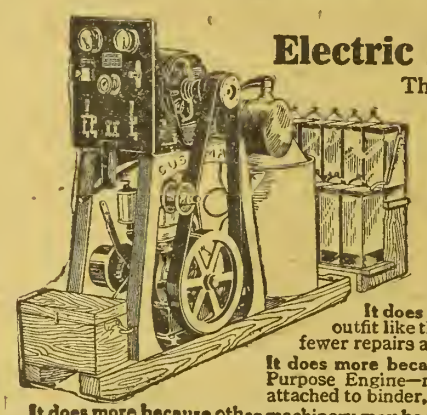

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in fact a century or so, to develop the production side of agriculture to its present degree of efficiency, and there yet remains much to be done. I hope that the development of efficient marketing machinery will not take that long, but it is a vast undertaking, and every step of the journey must be sure-footed.

"To accomplish that the bureau needs to have on its staff workers of proved ability through practical experience; workers who are keenly sympathetic with the farmers' needs. In a word, we want in the Bureau of Markets the best marketing specialists found anywhere in the world.

"But of equal importance is the hearty co-operation of everyone. By the character of service rendered we want the farmer to know that the bureau is his friend, and not to hesitate to call upon it to help him solve his marketing problems. It is his bureau, and we are ready and anxious to serve him."

In that last sentence is contained the keynote to George Livingston's code. Service to others is his religion. He is constantly devising means of helping the farmers with their problems, and the only reward he asks is that the farmers come half way to meet him.—Frank George.

The Japanese Question.

Farmers in the mountain states are keenly interested in the question of Japanese immigration, because people of that race come to America with the intention of acquiring our most productive lands and creating settlements that are solidly Japanese. That Colorado is vitally concerned was brought out at a recent conference of the League of the Southwest held in Denver, at which it was stated that a large percent of the canteloupes in the Rocky Ford district were now grown by Japanese. Not only the Arkansas valley, but also the Platte valley is witnessing an influx of Oriental farmers that forebodes the building up of Oriental communities. We in Colorado are not anticipating a problem; we have it with us.

In California the farmers are facing the matter squarely but without passion, prejudice or excitement. The Japanese are peaceful, law-abiding people. No one has any quarrel with them, nor is there any attempt to make those who are already here suffer injustice. The realization is clear, however, that the United States cannot invite another race problem to develop within the nation's borders. Congressman William N. Vaile of Colorado, at the Denver conference, expressed the sentiment of thinking men very clearly and without equivocation or apology when he said: "We must reserve for ourselves the right to say who shall become, with us, the inhabiters of this portion of the globe."

Such statements, he said, may be agreeable to the Japanese government, or they may not, but whether or no, we are facing a condition and history bids us not to repeat the mistakes of the past. He spoke of the present race question which once nearly split the nation and which left us a problem that may never be settled with full justice to the black man, or satisfaction to the white. He said it was not a matter of race prejudice; that we are willing to concede, for the benefit of the argument, that race troubles are our own fault, but that the white man does not like, will not like and you cannot make him like men of a different race in the sense that he would be willing to abide side by side with them in our national life. Why run the risk of race troubles in the future by closing our eyes now and continuing to admit aliens from the Orient who cannot be assimilated?

Congressman Vaile is a member of the house committee on immigration, which made a personal investigation of the oriental problem in the coast states recently, so he spoke from personal knowledge regarding violation of the "gentleman's agreement" with Japan when he said he felt sure that the Japanese government could not be entirely blind to the practice of smuggling members of the race across our southern border. He called attention to the Japanese code which holds that the child of a Japanese father remains Japanese, no matter where born, unless the government recognizes a waiver of citizenship by such person, and that there was no record of any such recognition ever having been given. Dual citizenship is a dangerous thing, he said.

"It is a deep economic question; a question of the supremacy in this country of the white race," he said, arguing for our sacred right to say who shall share this continent with us.

Why not settle the question now, before it reaches an acute stage? Undoubtedly an amicable adjustment is possible. The Japanese government can be made to see the force of our contention that harmony between the two nations is best preserved when the people of each remain citizens of their own country.

Progress of Daly's Durocs.

Daly & Thompson, of the famous Daly's Durocs herd at Cambridge, Neb., report some excellent sales made recently through their advertising in Western Farm Life. They sold to E. M. Westbrook at Otis, Colo., two outstanding sows for September farrow, bred to the Great Crusader, the head of their winning show litters at the National Western in Denver last winter. They are taking this boar and Crusader Queen to the Nebraska State Fair and also to the National Swine Show. Mr. Westbrook, who is making a good start in Durocs is gathering an excellent array of brood sows and building up a herd that will cut some figure in our state shows.

Another sale reported is that of an outstanding Crusader boar to J. J. May of Wray, Colo., another new man in the Duroc game, who believes in starting with good ones.

There were 65 August pigs sired by their two great herd boars and on September 1st there were still 16 sows to farrow, which indicates a good surplus of pigs.

Idaho Seed Show.

"This year the Idaho Seed Growers' association is offering $1,500 in premiums to the winners at the seed show to be held at Nampa in January," says an announcement by C. B. Ahlson, assistant field agronomist of the University of Idaho extension division. "Boost the pure seed industry in Idaho" is the slogan adopted by the association. Last year every section of the state, north, east, south and west, was represented at the seed show at Pocatello. There were 313 entries. With the crop outlook and the interest which is apparent this year, the entries should far exceed that number.

"Materials collected at the right time will win prizes. Sheaf bundles are always necessary to make an exhibit of this nature complete. Bundles of the choicest crops of all kinds should be gathered and preserved for the exhibition. Last year 75 per cent of the premiums on sheaf bundles were won by northern Idaho counties.

"One of the largest single exhibits this year will be that of corn. Corn shows previous to the seed show will give many opportunities to select prize winning samples. Large premiums will also be awarded on potatoes, particularly the two varieties which have made the potato industry in Idaho; namely, the Netted Gem and Idaho Rural."

New Zealand Lamb Deal Explained by Packers

(Continued from Page 5).

Although not generally realized, it is nevertheless the fact that the decrease in the value of pelts and fats plus the increase in expenses of slaughtering and marketing amounts to 4½ cents a pound on live lambs today as compared with one year ago. The principal reason for this is the great decrease in the price of wool. This means that live lambs selling at 12½ cents per pound in Chicago now cost us as much dressed as the same lambs at 17 cents a pound a year ago.

There has been a considerable increase in the combined receipts of western and native lambs at principal United States markets since the middle of July, 1920. This included not only receipts at Chicago and other western markets, but also receipts at eastern markets such as Louisville, Cincinnati, Buffalo, Pittsburgh, Jersey City and Baltimore. This increase in receipts during the past four weeks has resulted in such a supply of dressed lambs on eastern markets that the price in the principal eastern cities has broken from 5 to 7 cents a pound, and this is equivalent to about 3 cents per pound live weight. This increase in supply and this break in price came during a time when there was practically no frozen foreign lamb on the market.

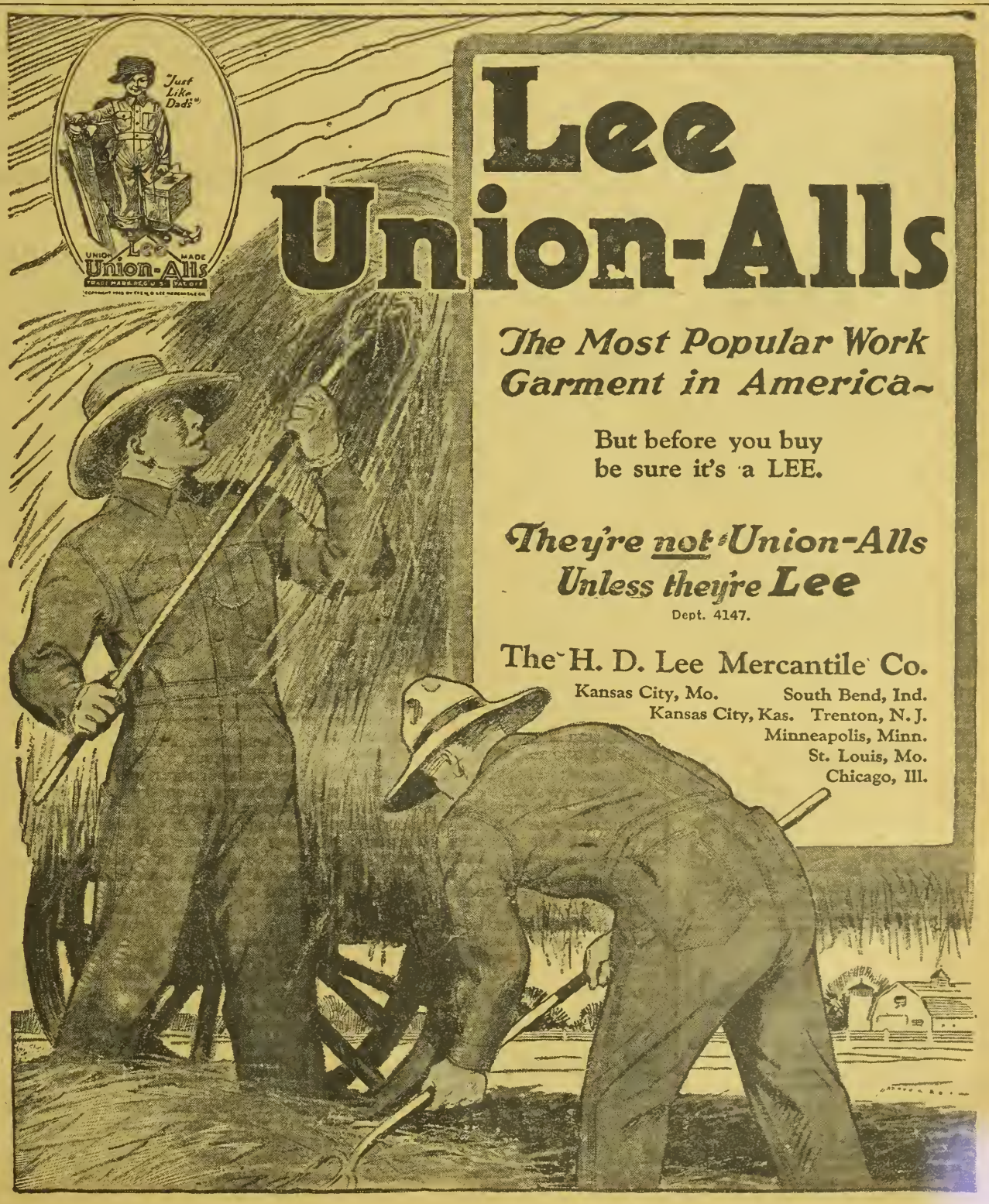
As long as it was inevitable that this New Zeaand lamb, shipped by the British government, was coming to this country any way, we believe that it has been better for both the producer and consumer for us to handle as much of it as we could, because we can give it broader distribution, and because we can help to avoid demoralization of market conditions which result from periods of very low prices followed by periods of very high prices. Neither the consumer nor the producer gains anything by abrupt declines in prices caused by temporary oversupplies only to be followed by sharp increases in prices due to temporary shortages. We want the livestock producers to realize thoroughly that this product would be coming into the United States even if the large packers were not handling it. There are many channels through which it can be sold and it was only after realizing this situation that we decided to handle it.

It should also be thoroughly understood that the present depression in the prices of sheep and lambs is not due alone to importation of foreign lamb, but to a large extent to the radical decline in the values of wool and other by-products.

A Precocious Child.

The school was observing Lincoln's day by having the pupils write stories about Lincoln. One small boy wrote: "Abe Lincoln was born in Kentucky on a beautiful morning in February in a rough cabin which he had helped his father build."

"The Heart of Virginia Keep," by Edwin Baird, author of "The City of Purple Dreams," starts in next issue.



Eleven States Meet at the Salt Lake Conference.

(Continued from Page 6.)

on cattle. The packers are exporting beef from South America. Mutton is coming in from New Zealand where a surplus accumulated during the war when there were no shipping facilities. We were lame in this country in not being posted regarding this accumulation. The American Farm Bureau Federation will make it its business to keep the American farmers informed regarding just such things in order to keep them from making costly mistakes in production.

"As regards the speculator in the livestock business, we must have some agency to take his place before he can be eliminated. As it is now, the commission men are our self-appointed agents; they have a water-tight organization. I think we as producers can work with them in solving our marketing troubles. One thing we know, we need a representative at the markets empowered to speak and act for us when prices offered are not just."

Senator Silver followed with details regarding the experiences of the Washington bureau in packer legislation. He said that they had never been able to get action on the packer bills because they could not find any two farmers or stock raisers who absolutely agreed on what should be done. Under the agreed order entered in the packer trust case he said the packers have been brought under federal control, except as to price fixing. That function has not been taken over by the government, although the government does virtually control the packing business in other respects. He mentioned a plan which works well in a district of California in regard to hog marketing, where the farmers bring their stuff to a sales center and buyers come from the packing markets and bid against each other for this stock. He witnessed one of these auction sales which resulted in an average increase of $1 per hundredweight above the prevailing markets. He said he did not know how far that idea could be carried out, but in respect to hogs in certain localities it might be a means of insuring competition and an open market.

"With the railroads and the packers under government regulation," continued Senator Silver, "where is the responsibility of selling to fall? We cannot expect the other fellow to sit up and figure a way of giving us an advantage. Our problem is to supply the markets in an even run so that violent fluctuations will be avoided. How will this be done? We have no definite plan as yet, but we are working on it and discussions of this kind bring us to a solution."

In closing this discussion Senator Silver recited an incident to illustrate his contention, that if the producer is paid cost of production plus a fair profit it will not raise the price of food to the consumer. In Washington recently he bought some apples at a fruit store for which he was charged 12 cents per apple. These apples had been grown a short distance from Washington and there was a difference between the retail selling price and the grower's price of $11 a box. The point made was that by cutting out illegitimate profits between producer and consumer and eliminating speculation, the producer would benefit without added cost to the consumer.

The Sugar Beet Question.

George M. Houston of Greeley, who had charge of contracts for the Mountain States Beet Growers Association during the present season and was one of the Colorado representatives at the conference, told of the negotiations which had been carried on between the beet growers and the Great Western Sugar Company. He said he had been growing beets for almost twenty years but that he had learned more about his own business in the last few months than in all the time before. He had changed his ideas concerning the men who dominate the sugar industry and learned to know the other fellow and to respect him. The factories in the past, he said, had allowed the growers just a trifle more on beets than they could earn on capital and labor invested in grain or other crops. Sugar beets, to be profitable, must be grown in certain localities where soil and climate are favorable. The growers of the intermountain states had learned that they are in a strategic position and they insisted on sharing with the factories the benefits of climatic and soil conditions.

He declared that when the growers met the factory people in a square and manly way on this basis the sugar company representatives responded in the same spirit. It was possible, therefore to secure for the 1920 crop a $12 guaranteed price, with a promise to the grower of sharing at the rate of $1 per ton for each rise of 1 cent per pound in sugar above 11 cents at seaboard. Formerly in offering the growers a flat rate the sugar companies were figuring on the future market and making themselves liberal allowances that would cover all chances. Now, however, Mr. Houston declared, the growers desired to share these chances with the manufacturers. The growers believe that sugar content should be taken into account, but they are not ready to do this for the 1921 crop. Points under discussion for future agreement include a basis of 16 per cent sugar content as an average; agree that when sugar sells at 5 cents seaboard, price for 16 per cent beets should be $6.33 per ton; that when sugar is 15 cents at seaboard beets should bring $20 per ton.

Mr. Houston expressed the opinion that the growers' organization would welcome the help of the Farm Bureau Federation in solving the problems of growing and marketing sugar beets.

There was considerable discussion of the sugar question in the lobby between meetings, this including the subject of more farmer-owned factories and direct sales from the factories to groups of farmers in regions that do not produce sugar. Inquiries were made by representatives of the Illinois and Oklahoma Farm Bureaus as to the possibility of buying sugar in carlots from factories in the mountain states and selling direct to the farmers in sections where retail prices have varied from 25 to 30 cents a pound. Factory representatives in Colorado declined to enter into negotiations for direct sales. Their output is marketed through the jobbers and they have held their sugar for sale locally at a final retail price of 15 and 16 cents, while they could have entered the central states and received much higher figures. In other words, they decided to protect their home trade. Whether the Utah and Idaho factories offered any encouragement along this line was not learned.

These discussions in open meeting and in groups that formed in the lobbies were all significant of the fact that the farmer is on the verge of applying co-operative principles wherever he can. He sees that it will work out in some lines very practically and that his favorable frame of mind toward direct dealing will have a decided tendency toward cutting out speculation and reducing the cost of distribution.

Regarding Wool Conditions.

Senator Gray Silver, executive committeeman from West Virginia, who is in charge of the Washington Bureau of the Federation, gave the farmers an outline of world wool conditions. His summary indicated that the world's supply, including the carry-over from previous years and the 1920 clip, consisted of four billion and eighteen million pounds of wool . The estimated consumption for 1920 is three billion and ninety-four million pounds, which would leave on hand at the end of the present year nine hundred and twenty-four million pounds of wool. These figures indicate that there is no surplus of wool. During the war the alien property custodian confiscated ships belonging to Germany and there is now to the credit of that nation a sum amounting to hundreds of millions in payment for these vessels. Senator Silver pointed out that Germany is anxious to buy low grade wool against this credit. Congressional action is necessary and a resolution was adopted by the conference urging the Farm Bureau Federation to secure such legislation. If that is done it will create an immediate cash market for low grade wool.

Inability of European countries to buy low grade wool has caused the accumulated stock which is now practically a drug on the market. Senator Silver reviewed efforts made by Australian wool growers to form a pool which, however, had failed. The figures he gave clearly indicated that the supply of high grade wool was not above normal and that if some arrangement can be made for extending the proper credit to Germany and Austria it will help our wool growers wonderfully. He pointed out that the problem is to handle the

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SAVAGE QUALITY

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The .250-3000 Savage Bolt-Action Model 1920

HERE IT IS!

THE rifle you have always wanted—A Savage Bolt Action. It is the handiest, daintiest, most perfectly modelled little shooting-iron that a gun-crank ever got his hands on.

And it is the strongest, simplest, most dependable weapon that an explorer ever took onto an Arctic ice-floe or into a tropical jungle. And it only weighs six pounds. There's nothing patched-up about it—nothing renovated, or adapted or compromised. It isn't a cut-down musket, or a war-baby reborn.

IT IS A BRAND NEW HUNTING-RIFLE—newly designed from muzzle to butt-plate—built symmetrically around the wonderfully effective cartridge it shoots, and combining every desirable feature of the best military rifles with special refinements which the hunter needs.

Its action is the simple military bolt—but re-dimensioned and improved. It has bigger, stronger locking-lugs than the Service rifle. It has a shotgun type safety located on top of the tang—the natural, convenient place. The patented magazine design makes it possible to use soft nose, Spitzer point bullets without danger of deforming the points.

The great popularity and success of the .250-3000 Savage determined the cartridge for which this rifle should be designed. This cartridge is loaded with an 87 grain Spitzer point, soft nose bullet 3000 feet a second, accurately enough to make possibles on the 800 yard target and hard enough to penetrate ⅝-inch boiler plate.

SPECIFICATIONS.

22-inch tapered high pressure steel barrel with integral front sight base, checked pistol grip stock and forestock, pistol grip capped, oil finished one-piece stock, corrugated trigger, corrugated steel shotgun buttplate, white metal front and flat-top sporting rear sights, magazine capacity five cartridges, weight 6 pounds.

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low grade in such a way as not to break the market on the finer grades.

The conference also went on record in favor of the truth-in-fabric bill. Senator Silver stated that there seemed to be considerable sentiment in favor of the measure in the lower house, but that the Senate was disinclined to take action. He said he knew of no particular reason for the feeling of opposition and indicated that the wool growers must make their influence felt if they desire prompt action at Washington that will relieve the stagnant condition of the wool market.

Mr. J. P. Powers of the Michigan Farm Bureau, explained the pooling plan, which has been adopted in that state where five million pounds of wool is being held in Farm Bureau warehouses. He stated that Ohio, Illinois and Indiana also have wool pools and that the need at present was for a centralized agency which would handle the bulk of the clip and prevent one state undermining another in disposing of the wool. He asked that the western wool producers send representatives to a conference to be held at Manhattan, Kan., September 21 and 22, to discuss the formation of a national wool pool.

In closing the discussion on wool, Senator Silver declared that no one group of farmers could accomplish effective results; that there were not enough wool producers, or not enough cotton growers, or not enough apple growers, to commit Congress to any particular line of action, but that when the apple growers, the cotton growers and wool growers get together and spoke as one body of producers, Washington would wake up. He urged continuance of work by the special organizations and the lining up of this work with the plans of the American Farm Bureau Federation.

The suggestion was made that various state Farm Bureaus take up the wool question with their congressmen at home. Senator Silver in response to this said:

"There are eleven states represented in this conference. This is an election year. Now you Farm Bureau men pass this question along to your local representatives and senators. It will be of great help."

Chairman Burton stated that a Utah sheepman told him he wouldn't live long enough to see the truth-in-fabric bill enacted into law. It was brought out that the Farm Bureau must be prepared to meet opposition from shoddy dealers at Washington on this measure.

Agriculture's Importance.

At the final session of the Salt Lake conference, Dr. W. H. Walker in opening the discussion, pointed out that the constitution of the United States and the Declaration of Independence were constructed by farmers; that George Washington, who led the fight for independence, was a farmer, and that after the beginning of our national life and the invention and development of the steam engine, people lost sight of the importance of agriculture while industrial life held the center of attention. Labor and capital, he said, had been fighting for seventy-five years while the farmer, instead of solving his problems, had been gradually moving away from them by taking up new lands as the tide of emigration moved westward. Now that the country is well settled, he declared, we are coming back to these problems and they are facing us in such a way that solutions must be found. We cannot run away from them again.

He stated that California's agriculture represented an investment of $500,000,000 greater than any other of the state's industries. If the head of the California manufacturers' association, or the lumber men of that state, or the man heading the mining industry had come to Salt Lake City for a conference with others engaged in industrial lines he would have been considered an important personage. However, when farmers who represent an investment much greater than any of these industrial lines get together in conference the public is unappreciative of its import and it passes with slight notice. He pointed out that the California citrus growers acting alone are only a speck on the agricultural map; the same with the bean growers, or with any other special interest, but when these interests are united in such an organization as the American Farm Bureau Federation they became an effective force for the betterment of agriculture.

W. G. Eckhardt was asked to explain the plans of the Illinois Agricultural Association, which corresponds to the state Farm Bureau. The state membership fee is $5, and county memberships vary from $5 to $10 per year. Nearly one-half million has been raised by Illinois farmers in support of these activities and the budget of the Illinois agricultural association for the present year amounts to $300,000. The state pays to the national Federation $60,000. It has set aside $65,000 for investigations in marketing. Other interesting details were given concerning the activities of the Illinois farmers. Mr. Eckhardt explained how he became interested in organization along marketing lines. He had been a farmer and stock raiser and also had served as county agent, having been a pioneer in that service in Illinois. While farming he fed out a lot of lambs and sold them when fat at a big loss. He was out his feed, and his time, he said, but he had had the pleasure of giving the lambs a pleasant excursion from the range to his farm and from his farm to the Chicago market. That experience convinced him of the necessity for a closer study of marketing, because no farmer can continue long in business at a loss. He spoke of the Argentine corn shipment, which had been mentioned by Mr. Brown in the livestock discussion, stating that the quantity brought in was not as much as is raised in one Illinois township, but that it was sufficient to break the market and that it cost the feeders of the corn belt millions of dollars.

Mr. C. E. Gunnels, assistant secretary, explained the American Farm Bureau Federation as an "alliance of Farm Bureaus of the nation for the advancement of agriculture, economically, educationally and socially." He gave a review of the activities of the Federation and pointed out that success rests upon the individual member who must take an active part and do his share of the work in order that all may be benefited.

At the close of the session a resolution offered by Mr. J. M. Kirkham of Utah was adopted, urging the Federal Reserve Board to extend proper credit to the producer to prevent losses caused by rapid deflation of currency and that Congress be authorized to purchase the bonds of the Federal Land Banks so that loans to farmers on land could be continued. Mr. Kirkham urged that both of these measures were necessary, as the farmer will suffer serious losses if their business is not properly financed.

Says He's a Water Witch.

Western Farm Life:

In the July 1 issue J. D. Kaufman expressed his opinion of water witching with a forked stick, being a trick. I am interested in water witching, while I am not witching wells as a practice, but I can't agree with him, for this is not a trick. The forked stick works for me, and only where there is water. There may be some crooks who pose as water witches and obtain money for pretending they know and don't. This forked stick will not work in everybody's hands. I have seen hundreds try it with no success. In the western country the water under the earth runs in streams or sometimes called veins, more than it does in sheets. In the eastern country the water runs more in the sheet form and closer to the surface, which is much easier located. In the locality I now live in the wells range from 300 to 700 feet in depth, and these wells can be located with a forked willow. My brother and I are now sinking a well on the strength of the forked stick. I can show any person living and convince them, that this is no trick. I will admit that any person can turn the forked stick down at their will, but not in the manner that mother earth does it. It is true beyond a doubt that the earth draws the stick where there is water, so water witching is not a superstition, it is the real thing. I have been blindfolded by some who thought it was a joke, and led around, it being impossible for me to see the ground I was covering. Every time I would cross the vein of water the stick went down. I convinced them it was no joke. I believe in looking out for sharks, for perhaps Mr. Kaufman got hold of one instead of a real water witch. We have honest water witches as well as crooked ones and every one who has a well to witch should put him to the test and make sure he is no shark. I came from Missouri, was born and raised there and know of a few real water witches. Would be very glad to convince anybody that water witching is no fake.—John C. Drake, Murphy, Idaho.

Sore Tails of Pigs.

All hog raisers have experienced the difficulty of having their pigs get sore tails. This is of considerable annoyance and often causes the tail to slough off. This trouble occurs while the pig is but a few days old. It is an infection said to come from dirty bedding or scours. A suggested remedy is at the first appearance of the trouble, at the root of the tail apply sweet oil. The best means of combating it, however, is to keep the quarters clean.—H. A. L.

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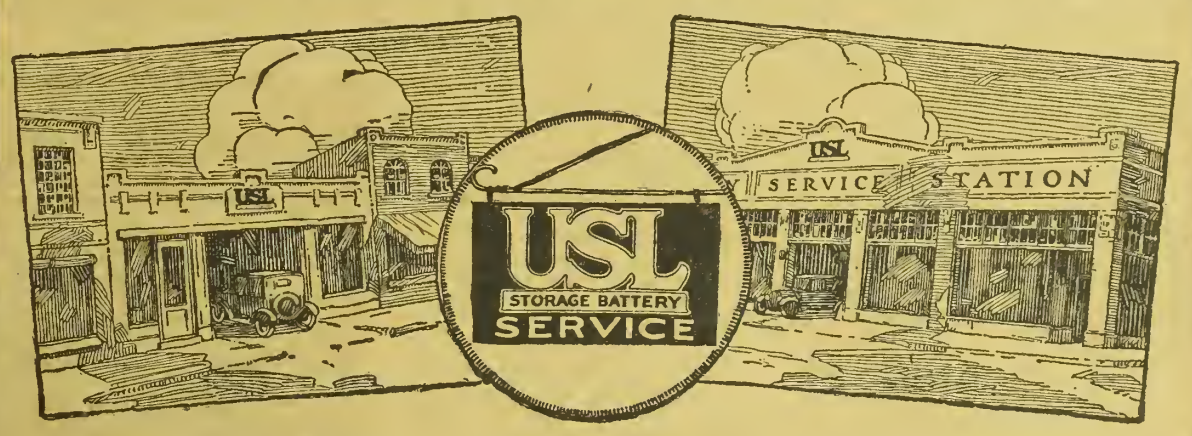

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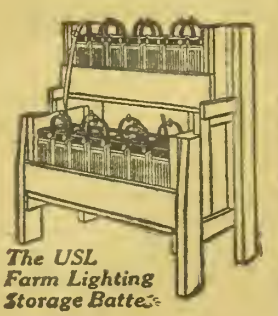

The USL Farm Lighting Storage Batte

Sudan Grass Makes Good.

Ten years after its introduction to the United States from Khartum, Africa, Sudan grass was being successfully grown in nearly all parts of the United States. It does not serve well either as a "money crop" or a soil improver, hence it may never find a permanent place in regular crop rotation. It has, nevertheless, a very important place in the farmer's second line of defense as a catch crop which can be planted to give satisfactory returns when conditions have brought failure to other hay crops. This is the verdict pronounced by the United States Department of Agriculture in Farmers' Bulletin 1126, recently issued.

Sudan grass is replacing millet as the premier catch crop in many localities because of its ability to produce a fair yield and a high quality of hay under conditions of low rainfall; its rather short growing season; and its ability to thrive on a wide range of soil types. Large yields of Sudan grass are obtained only on good soils, but the grass fails completely only on cold, poorly drained land.

Sudan grass produces heavily. In California under irrigation it has made yields of 9.8 tons of field cured hay an acre, when alfalfa produced but 8.3 tons under like conditions. It ordinarily yields about the same as alfalfa under irrigation in the Southwest, but Sudan grass gives its full crop in three cuttings against the four or five required for alfalfa. It is the only grass yet found which, in that part of the United States, ranks as the equal of alfalfa in point of yield and quality of the hay. Its record in this respect has led to its use in "patching" old alfalfa fields when the stand of alfalfa has been destroyed. In the Southern Great Plains where there is a low rainfall, Sudan grass grown without irrigation will yield from one to three tons of hay to the acre.

In the semi-arid districts the highest yields are obtained when the grass is sown in rows so as to allow of cultivation. The advantage in yield of the row over the drilled seedings is so small, however, that most farmers prefer to avoid the necessity of cultivation by drilling or broadcasting the seed. A common grain drill handles well-cleaned Sudan grass seed without trouble and the hay from drilled seedings is finer stemmed and matures more evenly than row plantings.

The feeding value of Sudan grass is equal to timothy hay. In localities where soy beans or cowpeas do well these legumes may be grown in mixtures with the Sudan grass. Such a mixture produces a hay of higher feeding value than the grass alone, because of the high protein content of the legumes.

Alfalfa Cutting Experiments.

Recent experimental work in cutting alfalfa hay at the Nebraska and Wisconsin agricultural experiment stations corroborates the results obtained at the Manhattan, Kas., station. This work at Manhattan was begun in 1914 and is still in operation. Certain plots have been cut at each of four different stages, namely: Bud, tenth bloom, full bloom and with seeds forming. Since under certain conditions, flowers do not appear, these stages have been correlated with the appearance of new shoots at the crown. Tenth bloom and new shoots at the crown are equivalent stages for this discussion and each of the other stages has varied an average of ten days from the next stage of cutting. The results obtained in the past six years of this work are shown briefly as follows:

1. All plots were entering their third season when this work began. After cutting for one summer every time the flower buds were ready to open the early cut plots were so weakened that they never again yielded as much as the others. From the second year on, the three or more tons of hay credited each year to these early cut plots were from 50 to 85 per cent crab grass and foxtail. It required but one season's cutting at too early a stage to ruin the stand. The feeding value of the hay from this early cutting was of course highest of all, for certain kinds of livestock.

2. Cutting at the tenth bloom stage has not yielded as much hay per acre as the full bloom stage, and generally means one more time over the field with mower and rake. Grass is now entering the tenth bloom plots, but is not in the full bloom plots.

3. Cutting in full bloom has produced the highest yield of hay. Chemical analysis shows that it contains the most crude protein per acre. Considering the slightly higher yield, the absence of grass and saving of labor from one less cutting and raking, this stage has much to recommend it. The second growth has frequently been smothered off before cutting these plots, and if not, it has frequently been 15 to 18 inches high. There has been no damage whatever from letting it stand.

4. Cutting with seeds forming has produced less hay than earlier cutting. It has not injured the stand.

The value of hay from later cuttings is naturally less per ton. This in many cases has been over emphasized and, combined with a fear of leaving alfalfa stand until matured, has caused early cutting. This causes many fields in Kansas to die out.

It has been clearly demonstrated that later cutting does more than any other one thing to keep out crab grass and foxtail.—Kansas State Agricultural College.

Hawk Frightening Device.

A device for frightening chicken hawks, new to the writer but known, no doubt, to some of you, came to our notice last week khen visiting a mountain ranch in the edge of Wyoming. A chance was had also to observe its effectiveness, for from the vantage point of a huge pile of rocks about a quarter of a mile from the house, we watched a big chicken hawk circle speculatively above the ranch and then start off down the valley as if business were much more urgent elsewhere.

The working part of the arrangement consists of two tin disks, in this case syrup pail lids, fastened by chains, one at either end of a cross piece which in turn is nailed to the top of a pole about 16 feet high, though it doesn't have to be quite so far up in the air.

The lids are fastened to the ends of the chain by means of a little homemade swivel of wire. This lets them swing freely. There is a reason also for the chains. Wires were tried at first and no swivels used. An extra stiff breeze would swing the wires up over the cross piece and the lids would stick there. The chain frees itself under such circumstances and swings more easily at all times, the little swivel at the end allowing the disk to turn readily.

What frightens the hawk is simply this: The lids turned by every little current of air catch and flash the sunlight. As far as "Home Rock" ranch can be seen those little flashes can be seen; and to the keen eyes of the big bird, hunting a tender morsel of chicken, they look like a regular heliograph message of danger to himself. The rattle of the chains and lids may also help to warn him, but the moving brightness of them is what does the work. These tin lids would have many a shot gun shell, and they stay at home when you don't. This ranch had two of the devices, one on top of the chicken house, and one about fifty yards away. —E. D.

Homestead Questions.

1. We have 320 acres, having filed on the first 160 acres in 1906, and an additional 160 acres in 1910. We received our patent March 29, 1917. Can I file on any more land? If so, how much?

2. I have a daughter who is 19 years old. She has property in her own name, cattle and horses amounting to about $700. Can she homestead 640 acres, or must she wait until she is 21?

3. Are there any homestead lands in Nevada and Utah?—Subscriber, Colo.

1. Circular No. 523 says: "A person who has perfected, or has pending, an entry or entries initiated since August 30, 1890, under the desert land, timber-and-stone or pre-emption laws for 320 acres in the aggregate is disqualified from making any kind of entry under this act."

2. The law says: "Persons under 21 who are not heads of families cannot make entries under the homestead law." You will note therefore, that she cannot make a filing until she reaches the age of 21.

3. The last list we have is now about one year old and shows 36,000,000 acres

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Just a night flash by fast mail to uncork you a real fuss-stirring idea that has five aces shaded!

Now, bolt this down:—no two people, unless they run a circus or write encyclopedias, ever agree offhand on which is a camel and which is a dromedary when you line the two up and check off one hump on one and two humps on the other. *You can't do it with the sun shining!*

Spill this "hump" question first time you're in a bunch of live ones—if you want to see fur fly! Never heard such a wind-jamming squall in my life as tonight when I passed it to our crowd! You know Betty Ellen Jones. Well, she said a dromedary was a he-camel hunting a date in the desert! And, Betty's "Vassar, '20"—rah, rah! All right, Betty!

All you've got to do is dig out your deck of Camel cigarettes. That "bird" out front clinches the argument—*apparently*—but!

In the classic language of bigger business circles—"you tell 'em Cricket, Katy did!"

Report your luck quick. Try it on old Jig Jones! And listen, Peter. I'll shortly slip you some smoke news that'll make Jake's ideas rattle like a tin can tied to a towser dog's tail! *S'long!*

Yours for warm socks next winter!

Shorty.

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With American Boy	1 yr., 2.90	With American Magazine	1 yr., 2.90
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of homestead lands in the Carson City, Nevada, district, mostly rated as mountainous, arid and grazing. In the Elko, Nev., district, the available acreage is given as 55,000,000 acres, also rated mountainous, arid and grazing.

In Utah the Salt Lake land office shows 2,000,000 acres open to entry, mostly arid and grazing, and the Vernal land office shows over a million acres, of which 100,000 acres are rated as agricultural and grazing land, the balance being mountainous, arid and grazing. The 100,000 acres is listed in Duchesne county. You can obtain further information concerning these lands by addressing the U. S. Land Office at Vernal, Utah, for the Duchesne county lands, or the offices at Salt Lake or at Elko and Carson City, Nev., in case you are interested.

Pointers on Painting.

Paints and painting cost less than repairs necessitated by decay or disintegration. There is no such thing as an all-service paint. Paint should be selected according to the material to be painted and the conditions under which it must give service. The wear on a floor is more severe than on a wall; hence the floor calls for a tougher, more elastic paint.

The old painting axiom is: In spring and fall follow the sun; in summer, follow the shade. Outside painting should be done in dry weather. Surfaces should not be painted when wet.

Surfaces to be painted should be gotten as smooth and clean as possible. They should be free from grease. If painting new wood knots and sappy surfaces should be shellaced first. If painting over previously painted surfaces, all blisters and loose or peeled spots should be scraped or burned clean. A brushing with stiff wire brush followed by sandpaper is good practice.

A priming coat usually pays for its cost. A firm base for the final coats is very essential to insure long service. The primer should be thin enough to penetrate the lumber; it should be well brushed in. Only pure linseed oil or pure turpentine should be used to thin paint.

Although frequently used, ochre is not a good primer. The primer should be of as good quality as the body coats, but reduced to the right consistency. Elbow grease is a very good thing to use on paint, especially the priming coat. If the paint is cracked in small hair lines which do not go through the wood, reduce the first or priming coat with equal parts of raw linseed oil and turpentine, in order to penetrate clear through to the wood. This only applies where the old paint is well bound to the surface.

If the old paint does not adhere well, scrape the surface with a stiff wire brush to remove all scale, then dust with a stiff brush. Spots from which much of the old paint is scraped should be touched up with a thin coat of paint, reduced with turpentine. After this has dried, the surface is ready for the first coat.

Paint may peel from any one of several causes, but the most frequent cause is the improper application over a damp or frosty surface. Paint that is peeling rolls back from the surface in thin scales. A coat of paint put over a seemingly good surface will sometimes peel down to the bare wood or to the priming coat, showing that the old paint has lost its grip. Be on the lookout for this condition when repainting surfaces. The old paint surface should be well wire-brushed and dusted, after which the bare spots should be touched up with a thin coat of paint, reduced with pure turpentine. When these spots are dry, paint over with the first coat.

Blistering is easily recognized and is caused by moisture having come out of the surface under the paint or from priming with cheap ochre. When this condition exists, wire-brush and dust the surface, then wash with turpentine to cut any grease or excess oil which may be present. After this is dry, proceed as directed for first coat work.

More and Better Potatoes.

"More and Better Potatoes to the Acre" is the title of a booklet recently issued by the Agricultural Extension Department of the International Harvester Company at Chicago. The author is Mr. R. A. Hayne, who has made an exhaustive study of the subject and presents it in a very practical way with illustrations that help tell the story. All phases of potato production are taken up and in addition there is also a chapter on the use of potato flour. The object of the booklet, as set forth by the author, is "to help us grow more and better potatoes per acre and to get more out of them whether we eat them o sell them."

A few of the suggestions made are as follows:

To grow a big crop of potatoes—

1. Have well drained, fertile soil.
2. Prepare a deep seed bed.
3. Plant seed free from disease.
4. Plant seed improved by selection.
5. Keep seed from sprouting until planted.
6. Treat all seed for disease.
7. Cultivate thoroughly.
8. Spray for bugs and blight.
9. Rotate crops with legumes. Don't plant potatoes after potatoes.

How Many Teaspoons in Pound?

Five cubic centimeters is what the Bureau of Standards has set as the theoretical quantity a teaspoon holds, but all spoons do not conform to this. The housekeeper measures with a teaspoon and should fill it "level," not "heaping." How many teaspoons does a pound of baking powder contain? Apparently the number depends on yourself, upon the spoon used, upon the brand of baking powder you buy, upon the can in the lot which you happen to get, and upon a few other factors which though seemingly inconsquential do enter into the problem.

A pound of baking powder lasts longer with some cooks than it does with others. In an endeavor to learn where the difference is made the experimental kitchen in the Office of Home Economics of the United States Department of Agriculture recently conducted a series of experiments.

Various types of cooking teaspoons were first experimented with to determine the exact amount held in each case. Both the ordinary teaspoon and those "measuring spoons" which are linked together in sets were tested. A variation of from 126 to 150 teaspoons was found in the same pound can when different teaspoons were used.

The personal equation also enters into the amount which is called a teaspoonful. It was found the differences due to individual manipulation ranged from 10 per cent to 30 per cent, a wider range of variation than those due to the different capacities of different teaspoons .

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Grease cups have been almost eliminated in the Best Tracklayer. Lubrication has been simplified by running wearing parts in baths of oil and by using anti-friction bearings. Truck rollers and drive sprockets are oiled by special pipes running direct from the black-oil tank. Instead of spending an hour each morning filling and turning down grease cups, you are off for the field in 10 minutes.

This feature of the Best Tracklayer is just one of the many developments resulting from long years of tractor-building experience. The Best is not a new tractor. Every piece of its mechanism has been an evolution. Design, choice of materials and workmanship of the Best Tracklayer have been time-tried, and this tractor is famous for its power, endurance, reliability and economy of operation.

Tracks are made of manganese steel. Powerful heavy-duty engine is simple in design, with all parts enclosed. 36 Timken and Hyatt bearings used throughout. Working parts entirely housed. Three-point suspension relieves engine, transmission and frame of injurious jolts and twists. Independently operated tracks enable tractor to turn in its own length. Non-friction, greaseless rocker joints for track links double life of track. No belts or chains. Every working part instantly accessible.

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BEST TRACKLAYER SIXTY

60 H. P. at Pulley
35 H. P. at Drawbar

The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

If Mother Would Listen.

If mother would listen to me, dears,
She would freshen that faded gown;
She would sometimes take an hour's rest
And sometimes a trip to town.
And it shouldn't be all for the children
The fun and the cheer and the play;
With the patient droop on the tired mouth,
And the "mother has had her day."

True, mother has had her day, dears,
When you were her babies, three;
And she stepped about the farm and the house
As busy as ever a bee.
When she rocked you all to sleep, dears,
And sent you all to school,
And wore herself out, and did without
And lived by the Golden Rule.

And so your turn has come, dears,
Her hair is growing white,
And her eyes are gaining that far-away look
That peers beyond the night.
One of these days in the morning
Mother will not be here;
She will fade away into silence,
The mother so true and dear.

Then what will you do in the daylight,
And what in the gloaming dim?
And father tired and lonesome then,
Pray what will you do for him?
If you want to keep your mother,
You must make her rest today;
Must give her a share in the frolic,
And draw her into the play.

—Margaret E. Sangster.

When Sugar Is Sweet.

Not long ago we listened to a report on the results of some experiments on when and what sugars are sweetest. All of the experiment would not be interesting to the readers, but some very interesting facts with regard to sweetening fruits came out and these we want to give you.

Our mothers mostly told us to add sugar to cooking fruits, just before removing from the fire, explaining that it was sweeter that way. That explanation wasn't very satisfactory, else why add the sugar at all until just as the fruit is eaten? It would dissolve as completely but not so quickly. All of us know how difficult it is to get fruit sweet unless the sugar is cooked in. The facts happen to be that sugar added just after fruit has begun to boil will make it taste sweeter than when it is added just before removing from the fire. Moral: The first method takes less sugar!

When sugar is boiled with an acid it is changed into what is known as an "invert" sugar, supposably not so sweet as our ordinary cane sugar, though it makes more impression on a saccharimeter. The tests reported in the experiment showed that to all the tasters, the invert sugar seemed sweeter. That shows why boiling with the acid fruit juice makes less sugar go further. Another moral: If you have canned fruit without sugar, heat the sweetener with it before serving. The sugar bowl will suffer less.

With jelly another factor enters in. The more invert sugar there is in the mixture, the harder it is to get a good quivery jell; there will be more tendency toward waxiness or ropiness. In jelly you are not after sweetness, but jell; so the shorter the time you have to boil sugar and juice together the better the resulting texture of jelly.—E. D.

Help Plan Farm Homes.

Beautifying and improving the farm home is the newest phase of home demonstration work in the South, yet more than 1,500 farm houses were built in the South last year according to plans advised by the Home Club agents; 2,736 were remodeled, 2,677 had lighting systems installed, 19,270 had kitchens improved and made easier to do work in, 26,811 labor-saving devices were made or purchased, and 29,666 front yards were beautified. When extension work with the women was started ten years ago, it aimed first to lighten women's work and to lift it out of the realm of drudgery and to aid in food problems. As these problems were being solved the questions of clothing, home conveniences, increased poultry and dairy production, sanitary improvements, food composition, food values, and practical arrangement and furnishing of the kitchen were brought up by the women. This led to demands for practical plans for the whole house and for information as to its best location, drainage, water supply, lighting devices, inside arrangement, and decoration.

My Fireless Cooker.

FRANCES H. BROWN.

A fireless cooker is a boon to the busy housewife anywhere, and especially so on the farm, where one has so many outside chores that must be attended to and at the same time it is necessary that various things be cooking on the inside of the house. A home-made affair will answer the purpose equally as well as the more expensive factory production, even though it may not look quite so nice.

I talked and planned and boasted of what I was going to do for a long time before I could muster up sufficient courage to actually set to work at it. My husband made all sorts of fun, said that was just one of my crazy notions. But strength and time savers, as well as money savers, all look good to me even though they be ridiculed, by oh, it doesn't make much difference to me how many wiseacres.

A new barn was being built on our recently acquired homestead, and the bright, new, smooth 14-inch boards looked quite tempting, especially as I had a small goods box of those selfsame dimensions. The men folks were busy framing, so I slipped the square and saw off to one side.

"Hey, there, what are you doing?" The tone and voice were unmistakeable, but I remained deaf and dumb. Next came a quick, decided footstep and a repetition of the question in close proximity. I sawed on for a minute, then looking up with an air of perfect indifference answered carelessly, "A fireless cooker," and resumed my sawing.

"Humph, don't you know I have just enough of these boards to finish boxing the barn?" he asked rather imploringly, "and that thing won't be worth a penny."

"Just the same you will have to depend on it for your dinner," I replied.

"Not much, you fix my grub where it will cook," he warned and betook himself back to his own business.

I finished my sawing and fitted the extra sides to the box (the ends were heavy boards). Then I fitted a 2-inch strip at the top of the ends for convenience in handling my cooker. The lid I measured to fit over all, then nailed narrow strips to the sides and ends so that it would fit snugly a-la-trunk fashion over the box. Then I pasted several thicknesses of newspaper very carefully both inside and out to make it perfectly air-tight and lined it nicely with light wrapping paper. The outside I finished with wall paper.

Some 5-pound lard pails and half-gallon syrup buckets, with tightly fitting lids, furnished ideal cooking utensils and pillows of various sizes filled with feathers (had no earthly chance to procure even a wisp of hay in this, then hayless country), to fit under, between, around and on top of my pails completed my outfit.

I prepared my vegetables as usual and put them on the cook stove in my pails and let them start boiling and transferred them bubbling hot to my fireless, packing the pillows carefully around, and clamped down the lid.

When noontime came I opened it up, half expecting to have to finish the meal on the "old reliable" and meekly accept all the ridicule my husband was disposed to deal out. But glory! all was done to a king's taste and triumphantly served steaming hot to the incredulous menfolk who had to confess that one more of my crazy notions had made good.

A little experimenting in various ways soon enabled me to cook many different dishes and have a steaming hot dinner without a spark of fire in the kitchen stove at noontime. I always start my dinner on my breakfast fire, then calmly proceed to do anything I please either in or out, or away from the house, with the blissful assurance that my fire would not go out, nor my dinner burn.

On Sunday, or if we wished to take a little trip, I would even make my coffee, cook the chicken, and make the gravy, prepare what vegetables I wanted and shut them in. When we came home tired, hungry and hot, what a treat that cool kitchen and the steaming dinner afforded us. Did the mister poke fun then? Nay, not much.

The cooker may be made in any desired size. The object, of course, al-

ESTABLISHED 1879 Stark JEWELERS

Weddings

There is nothing in a home of more intrinsic value than STERLING SILVER

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We will allow you $12.00 for your old machine regardless of its make or condition, the amount to apply on your purchase of a FREE.

We pay transportation on both your old machine and the new one we send you.

We have no agents or collectors, so our price saves you $15 to $25. Do not buy any other machine until you have seen the FREE.

When you know the FREE as we do you would not think of buying any other.

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THE CONFIDENCE OUR FRIENDS OUT OF TOWN HAVE PLACED IN US MEASURES OUR SUCCESS.

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ways should be to make it serve the purpose of the needs of one's family, be it large or small. Your cooker will be a success if you are careful to make it perfectly air tight, and it will prove a "joy forever." If you are skeptical, just try it and see.

Handles may be put on as well as a lock and hinges, for the lid must always fit perfectly close. The fireless also makes a splendid place to raise the bread. By procuring the soapstones one can bake bread and roast too, thereby saving wonderfully on time, temper and fuel.

We attended morning service one extremely warm Sunday, came home, ate a steaming hot dinner out of the fireless and drove five miles with a team, several years ago before cars were so numerous, for another early afternoon service. Our friends thought we had driven straight from our services to theirs. When I assured them that we had eaten our dinner, they declared it must have been a very hasty, cold one.

"Oh, no," I replied, "not much, we had a dandy hot dinner, consisting of chicken and gravy (or as our correct friends would say, white sauce), mashed potatoes, coffee and so forth." Then you should have seen their faces! Heretofore they had regarded me as a perfectly truthful body, but now? I smiled blandly back into their doubting faces, nodding an emphatic affirmative.

"You didn't—you couldn't," declared one, "why you couldn't have had time to more than start the fire."

"I didn't have any fire," I answered, thoroughly enjoying their bewilderment, "not a spark since breakfast."

"Oh, you ate with some of the neighbors?" triumphantly averred another.

Still I shook my head. "No, we ate our own dinner on our own table, in our own cool house," I stoutly insisted, but I didn't have the nerve to hold out any longer against their evident fears of my sanity, so leaning forward as if to impart a very important piece of news, I said: "Say, folks, I have a fireless cooker."

Then I did have some questions to answer, and we had a very interesting extra session, not previously announced on the program, before the regular services began. And if there was some divided attention on the feminine part of the audience for the after service, I am sure it should have been pardonable, for if there is anything on the face of the green earth more depressing than the thought of going from a cool restful church, into a blistering hot kitchen to prepare the Sunday dinner I don't know what it could be. Do you? Especially, if one is make-believe-housekeeping in a homesteader's shack on the treeless prairies of eastern Colorado.

Our Fashion Service.

All patterns 12 cents each. Address Western Farm Life, Pattern Department, 1518 Court Place, Denver, Colo.

Read This Before Ordering: Patterns ordered through this magazine are mailed promptly from the factory at Brooklyn, N. Y., and arrive in 10 to 12 days from time order reaches Western Farm Life. Be sure to specify size and number of patterns. Write your name and postoffice address plainly to avoid delay. These patterns are handled at cost, as a service to our women readers. The price of 12 cents includes postage.

3283—A Youthful and Becoming Gown. Cut in sizes 16, 18 and 20 years; 18-year size requires 5⅝ yards of 36-inch material. Width of skirt at lower edge is about 1½ yards. A pretty model for organdie, foulard, taffeta or crepe. Ruffles or ruchings of contrasting material or ribbon form a desirable trimming. The chemisette may be of white batiste, net or lace. The trimming may be omitted. The waist may be finished in "slip on" style or with back closing.

3292—Skirt Pattern. 3305—Waist Pattern—A Stylish Gown. This attractive creation was developed from waist pattern 3305 and skirt pattern 3292. Waist is cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. The skirt in sizes 22, 24, 26, 28, 30, 32 and 34 inches waist measure. For a medium size 6⅞ yards of 44-inch material is required. Width of skirt at lower edge is about 1⅞ yards. Embroidered and plain foulard, beaded or embroidered net, taffeta and organdie, satin and serge, are good combinations for this style. This illustration calls for TWO separate patterns.

3309—A Popular Style. Cut in sizes 12, 14 and 16 years. A 14-year size will require 5¼ yards of 27-inch material. Plaid gingham in green and white with facings of white linen would be good for this design. Taffeta, serge, gabardine, sateen, challie, shantung, organdie, and voile, are also nice for its development.

3298—A Dainty Frock for Mother's Girl. Cut in sizes 6, 8, 10 and 12 years. A 10-year size will require 4¾ yards of 27-inch material. This style may be developed without overblouse. It is attractive in voile, cotton crepe, batiste, organdie, gingham, chambray, gabardine, poplin, silk, and challie. Embroidery, ribbon or braid would be good for trimming. The sleeve may be in wrist or elbow length.

3115—A Good Dress for Work or Leisure. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 5¾ yards of 36-inch material. Gingham in a neat check pattern or percale in dots or figures, would be good for this model. It is excellent for linen, drill, repp or cotton poplin, also for flannellette, lawn and serge. The width of the skirt at lower edge is 2 yards.

3296—Serviceable "Cover All" Apron. Cut in sizes small 32—34; medium, 36—38; large, 40—42, and extra large, 44—46 inches bust measure. A medium size will require 4⅝ yards of 36-inch material. Figured percale is here shown, with bindings of white cambric. Chambrey, gingham, lawn, drill, sateen, and alpaca could be used for this style.

2748—Suit Style for Small Boy. Cut in sizes 3, 4, 5 and 6 years. Size 4 requires 1¾ yards of 27-inch material for waist, and 1⅛ yards for the trousers. For the blouse one could use galatea, gingham, drill, or linen; for the trousers, these materials are suitable too, and likewise flannel, serge, velvet, and corduroy.

3291—A Dainty Dress. Cut in sizes 2, 4, 6 and 8 years. A 4-year size requires 2⅜ yards of 36-inch material. White voile is here shown with trimming of embroidery, lace and insertion. Chambrey, gingham, calico, lawn, dimity, silk, repp and poplin, are nice also for this frock.

Fall and Winter Catalogue.

Send 15 cents in silver or stamps for our up-to-date **Fall and Winter 1920-1921 Catalogue,** containing over 500 designs of ladies', misses' and childrens' patterns. A concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various, simple stitches), all valuable to the home dressmaker. Catalogue price 15 cents; all patterns 12 cents each.

How Many Cans in a Bushel?

The following table, prepared by the United States Department of Agriculture, shows the number of tin cans that can be filled from a bushel of various fruits and vegetables:

(1 bushel)	No. 2 cans (pints)	No. 3 cans (qts.)
Windfall apples	30	20
Standard peaches	25	18
Pears	45	30
Plums	45	30
Blackberries	50	30
Windfall oranges (sliced).	22	15
Windfall oranges (whole).	35	22
Tomatoes	22	15
Shelled lima beans	50	30
String beans	30	20
Sweet corn	45	25
Shelled peas	16	10
Sweet potatoes	30	20

Great Majestic

The Range with a Reputation

Great Majestic ranges bring delight and economy to kitchens. For sure-baking and fuel-saving qualities they are exceptional. Heat-tight, unseen-rivet construction gives you easy control over the heat in baking. Very little fuel is required for good baking and water heating.

And Great Majestic ranges are easy to keep spick and span. Their beautiful burnished blue cooking tops require only an occasional application of paraffine to keep them bright and clean—no blacking required. Even the nickeled parts are riveted on for smooth finish as well as for strength.

Great Majestic ranges are made in many regular and combination styles with or without legs. They are sold by leading retailers of ranges in practically every county in forty-two states.

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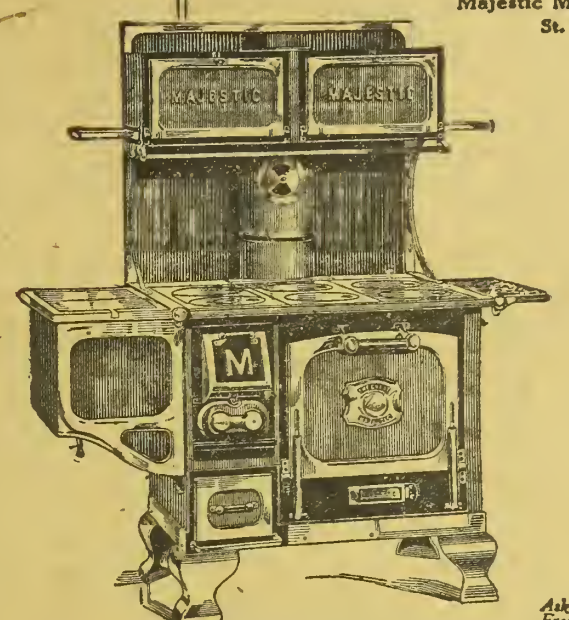

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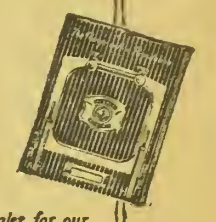

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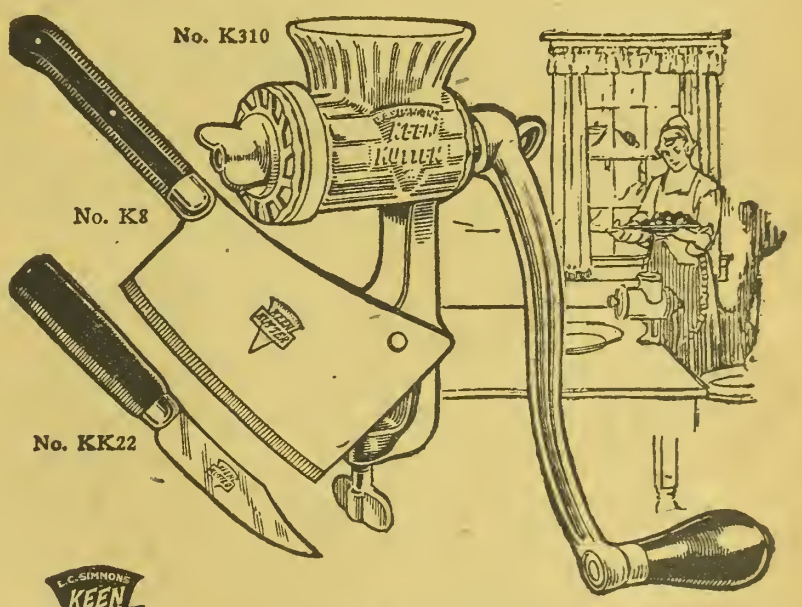

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Use Keen Kutter Cutlery

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Kitchen tools mean little to men—but to women—Oh! how important. For 50 years we have known of this importance. We have studied, analyzed and experimented toward one end—to make each Keen Kutter Tool and piece of cutlery, the finest ever produced.

To make Keen Kutter Paring Knives, Steels, Food Choppers and the like tools of proved working efficiency.

It has been done—splendidly accomplished; for under the Keen Kutter mark the housewife will find wear resisting tools that lighten labor, save time and make happy and contented kitchens.

There's added protection in the Keen Kutter guarantee, for the purchase price is always ready to be returned even for the slightest reason.

For efficiency kitchens, use Keen Kutter Tools.

Simmons Hardware Company

KEEN KUTTER

Profitable Farm Poultry

W. E. VAPLON.

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, Western Farm Life, Denver, Colorado.

Profit Is In the Eggs.

That poultry meat cannot be produced at a profit even under favorable conditions and that the profit in the poultry business is in the production of eggs, and the sale of poultry meat should be considered simply as a by-product of egg production, is shown by experiments just completed by the department of poultry husbandry of the University of Idaho. S. P. Smyth, poultry husbandman, explains that "Pullets must be raised to replace the old hens and consequently an equal number of cockerels will be produced which must be disposed of for meat. The income from the cockerels simply reduces the cost of producing the pullets and is not a profitable enterprise in itself. Where the best methods are used the chicks make more rapid growth, have less mortality and are produced at less cost than where they are neglected.

"Very few people know what it costs them to raise their chickens or realize what they must get for their broilers to be able to make a profit on them. This is one of the questions that the poultry department is trying to find out in an experiment started April 24, 1920, with 250 single-comb White Leghorn chicks. These chicks are being raised by the most economical methods, and not on complicated rations of high-priced feeds. The results are such as can be duplicated by any careful poultryman, but are better than are ordinarily obtained.

"These 250 chicks were put in an 8 ft. by 16 ft. colony house which was equipped with a coal burning brooder stove. The chicks were given their first feed when about 60 hours old. This feed consisted of a grain mixture of five parts of cracked corn, three parts of cracked wheat and two parts of pinhead oats, all cracked and graded to the proper size for young chicks. This grain was fed sparingly at first, five times a day on paper plates, later in the litter, all they would clean up in thirty minutes five times a day. This grain mixture was fed for eight weeks, after which time it was changed to a grain ration of equal parts of whole corn and whole wheat. When the chicks were ten days old a dry mash of bran and shorts was started and this was kept before the chicks at all times. From the time the chicks were given their first feed of grain sour milk was kept before them at all times. For the first eight weeks no water was given, so as to force the chicks to drink all the milk possible. After the eighth week water was given in the afternoons. Grit, charcoal and ground bone were kept before the chicks in hoppers. The brooder house was located in a lot 25 ft. by 100 ft. well set to alfalfa, on which the chicks were allowed to run all days that the weather would permit.

"An accurate record was kept of all the expenses by periods of two weeks. At the end of twelve weeks the cockerels were developed enough to sell as broilers and they were weighed out and credited to the experiment. The pullets will be kept to laying age and the cost of producing them obtained."

The following table gives the amounts of feed, fuel and labor used and the cost of each to July 17, when the chicks were twelve weeks old:

Cost of Production.

Fuel, hard and soft coal, 1,015 pounds	$6.76
Grain, 854 pounds	37.92
Mash, 212 pounds	6.31
Milk, 2,018 pounds	13.05
Grit, 18 pounds	.45
Charcoal, 16 pounds	.96
Ground bone, 28½ pounds	1.14
Labor, 63½ hours	19.05
Litter, 15 sacks	1.50
Total cost of production	$ 87.04
Value of 250 chicks to start with at 15 cents	37.50
Total expenses	$124.54

Number of chicks alive at end of twelve weeks, 226. Average cost per chick at age of twelve weeks, $0.55.

Total weight of chicks to date, 353 pounds.

Total weight of 108 cockerels to date, 178 pounds.

Total weight of 118 pullets to date, 175 pounds.

Cost per pound of chick to date, $.352.

Value of cockerels at 30 cents per pound, $53.40.

Net cost of 118 pullets to date, $71.13 or $.602 each.

Hints on Caponizing.

Cockerels of the American breeds should be caponized when weighing from 1½ to 1¾ pounds and from 8 to 10 weeks old. Cockerels of the Asiatic breeds may be left until somewhat larger, say from 2 to 2½ pounds in weight.

Two requirements are absolutely essential to successful caponizing: 1. The intestines of the birds must be empty. They should be deprived of food and water for from 24 to 36 hours before the operation. This permits the intestines to fall away and expose the testicle.

2. There must be good strong light, preferably direct sunlight. If possible it is usually advisable to perform the operation out-of-doors.

As to the operation itself, full instructions are furnished with the instruments or will be found in Farmers' Bulletin 849, which may be had by addressing the U. S. Department of Agriculture. But just a word regarding the instruments. While caponizing is simple, yet it is a surgical operation and requires instruments of surgical grade. Among other manufacturers, G. P. Pilling & Sons, Philadelphia, have for many years been making caponizing instruments in the same factory and with the same workmen who make high-grade surgical instruments such as are used in our hospitals. Such instruments will last for many years and be thoroughly dependable to the last.

Even expert operators nearly always kill a few birds. But the mortality should not exceed 2 or 3 per cent. And any birds killed will of course be perfectly good to eat since death is caused by bleeding.

There will also usually be a few "slips." A "slip" is a bird from which the testicles have not been wholly removed. He retains the characteristics of a cockerel. But a careful operator will not make over five "slips" per hundred.

Those who are not themselves professional poultrymen often prefer to hire an expert to do their caponizing. Progressive poultrymen can add materially to their income by caponizing for their neighbors. The customary charges for caponizing vary from 6 to 10 cents per bird. However, the operation is simple and anyone can learn to do it with a little practice. The beginner will find it best to practice upon a dead bird until he has acquired the knack.

After the operation, the birds should be put into a closed yard and provided with food, water and shelter. Do not provide roosts, since the less jumping the birds do the sooner the wounds will heal. The healing usually requires from 10 to 14 days.

Capons are usually marketed after Christmas—in January, February and early March—when about 10 months old. Capons must be sheltered during the winter months but require less floor space than laying hens. Excellent results have been secured with only 3 square feet per bird.

Capons should always be dry picked, the feathers of the neck, head and tail feathers, together with the leg feathers about one-third of the way from the knee to hip joint, should be left on. Most markets prefer that capons be undrawn and that the head and feet be left on.

The fact that the practice of caponizing is steadily increasing is the best evidence that it is profitable. Why not equip yourself with a high-grade caponizing set and be prepared to turn your surplus cockerels into money-making capons?—American Poultry Advocate.

Does Cactus Cause It?

I have seen a great deal in your department on the so-called prairie sod disease of chickens, and lately some of the weekly papers have printed an item about it. I am no expert, but just a farmer and a chicken raiser, and my notion is that this is nothing mysterious, but simply a case of too many cactus spines. All reports indicate that the trouble appears only in flocks that run on native prairie sod and that no trouble is experienced if the chickens are run on plowed ground. When I was on a farm on the prairie of eastern Colorado we had our chickens on unbroken sod and I do not recall of having any trouble of this kind. Parts of the farm were thickly covered with the prickly pear cactus and anybody who has farmed on the plains knows what that means to barefooted children and barefooted chickens.

Did you ever drive over the open prai-

Eggs and feathers are made of practically the *same* elements. Hens can't make *both* at the same time. They don't *lay* until they *stop moulting*.

The whole key to *more winter eggs* is in your hands now.

Don't let your hens *drag* through the moult without help. If you do, they'll be run-down just when they should be in perfect condition for *heavy winter laying*.

Begin *now* to use Dr. LeGear's Poultry Prescription in their feed regularly. More than a million poultry raisers have proved that this famous tonic and regulator is a wonderful aid during moult. Because it improves the whole digestive system, hens get full value from their feed. That means a quicker moult, without *strain*. Give hens this help and *get more winter eggs*.

Get Dr. LeGear's 128 page book on the care of stock and poultry. 10c, at your dealer's, or send to us.

Dr. LeGear's Poultry Prescription

Prepared from my 28 years' poultry experience and veterinary practice. Sold by 44,000 dealers everywhere—never by peddlers. Go to your dealer *today* and get a package—results or *money back*.

Dr. L. D. LeGear Medicine Company, St. Louis, Mo.

Dr. LeGear's Stock Powder will make your stock pay better

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FARMERS' AND STOCKMEN'S EXCHANGE

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

MINORCAS.

FINE BLACK MINORCAS AND BUFF ORPINGtons for sale cheap. Frank A. Agnew, Southside, Omaha, Neh.

H. R. SUYDAM'S S. C. B. MINORCAS—AUTUMN sale of breeding stock. Fifty beautiful April hatch cockerels at $5 each for next thirty days. For exhibition cockerels write for prices. 4500 Bryant st., Denver, Colo.

PLYMOUTH ROCKS

BARRED PLYMOUTH ROCK EGGS FOR SALE, $1.25 per setting of 15; $6.00 per 100. John M. Mischke, R. F. D. 3, Loveland, Colo.

LEGHORNS.

BUFF LEGHORN COCKERELS—PURE LINE bred, from heavy laying strain. Parent stock prize winners. W. J. Struck, Olney Springs, Colo.

RHODE ISLAND REDS

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

ANCONAS.

ANCONAS—PEN OF CLASSY BIRDS, BEST layers on earth. Champney, 2057 S. Broadway, Denver, Colo.

SEVERAL VARIETIES.

CHAMPNEY'S POULTRY YARDS—IF IT WEARS feathers we have it, or will get it for you. Write us your wants. 2057 S. Broadway, Denver, Colo.

ONE DOZEN YEAR-OLD SILVER-LACED WYANdotte hens, $2.50 each. Ten May hatch White Wyandotte chicks. Fine pen for 1921, $1.50 each. A few fine Barred Rock cockerels, April hatch; weight over 4 pounds, $2.50 each. All purebred. Mrs. D. D. Little, Havens, Nebr.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HOGS

EIGHT WELL BRED SOWS, BRED TO PUREbred Poland-China boar, for $200. Address Owner, Box 35, Hillside, Colo.

FOR SALE—REGISTERED BIG TYPE DUROC-Jersey hogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

FOR SALE—DUROC JERSEY PIGS, BIG TYPE and good type; also Holstein bull ready for service. Geo. S. Turner, Canon City, Colo.

REGISTERED DUROCS AT REDUCED PRICES—Choice sows, bred for September farrow, $70. March pigs, $25. F. W. Ruppenthal, Lucas, Kan.

WE HAVE SOME SPLENDID PURE BLOOD POland China pigs of March, April and May farrow, also old brood sows, for sale. Woodbine Stock & Seed Farm, Limon, Colo.

FOR SALE—REGISTERED HAMPSHIRE BOAR pigs of April and May farrow. Sired by Colorado Prince, also Colorado Prince No. 72591; age 17 months, weight about 350 lbs. Papers furnished. For prices write Geo. W. Wheeler, Otis, Colo.

BUY YOUR DUROCS AT WEANING TIME, AND make the hig profits yourself. I have prize-winning gilts and boars a few weeks old sired by champions that should be worth several hundred dollars each this year. Write for prices. J. N. Caldwell, Willow Grange Farm, Littleton, Colo.

CATTLE.

FOR SALE—REGISTERED HOLSTEIN BULLS, 3 months to 1 year. C. A. Brigham, Fort Lupton, Colo.

FOR SALE—TWO SPLENDID REGISTERED Holstein bulls and bull calves. Prices right. Pedigrees furnished on request. Norman R. D'Arcy, 3 miles north of Parker, Colo.

FOR SALE—HERD OF 40 REGISTERED HEREfords; must sell; four 2-year-old bulls, $100 each; one 3-year-old, $150. Herd headed by Carlos 13th, by Beau Carlos 2nd. G. E. Nickel, Bailey, Colo.

PUBLIC SALE OF REGISTERED HOLSTEIN cattle at F. A. Woods ranch, 1½ miles east of Boulder on the Valmont road, on Saturday, October 2d. F. A. Wood, Boulder, Colo. A. W. Korte, Auctioneer.

GOATS.

HEAVY MILKING REGISTERED HORNLESS Saanen goats Geo. T. Cramton, 4912 Hooker st., Denver, Colo.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

CALIFORNIA FARMS FOR SALE—WRITE FOR list. E. R. Waite, Shawnee, Okla.

SEND FOR NEW FARM, RANCH LIST, 100 bargains. A. J. Simonson, Cooper Bldg., Denver, Colo.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wis.

IF YOU WANT TO SELL OR EXCHANGE YOUR property, write me. John J. Black, 33d St., Chippewa Falls, Wisc.

WANTED—TO HEAR FROM OWNER OF GOOD farm for sale. State case price, full description. D. F. Bush, Minneapolis, Minn.

I HAVE CASH BUYERS FOR SALABLE FARMS. Will deal with owners only. Give description and cash price. Morris M. Perkins, Columbia, Mo.

REAL ESTATE WANTED—SELL YOUR PROPerty quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., Dept 11, Lincoln, Nebr.

OWING TO CHANGE OF OCCUPATION, I WILL sell my ranch and full blood Angus cattle and Percheron horses, or any portion of them. Address G. F. Lucore, Arriba, Colo.

FINE IRRIGATED RANCH NEAR DENVER—1,000 acres, 600 acres irrigated, best of water right; 225 acres in alfalfa; four sets of improvements. Priced $100,000, one-third cash. C. K. Davies & Son, 434 Foster Bld., Denver, Colo.

FOR SALE—STOCK FEEDING PLACE, 320 acres, two miles to stockyards, every acre cultivated; 150 acres alfalfa; $30,000 water right; $15,000 worth of improvements. Price $200 per acre. Terms. The Todd-Mulbar Inv. Co., 301-05 Cooper Bldg., Denver, Colo.

LIVESTOCK RANCH IN ARAPAHOE COUNTY, Colo., sub-dividing the famous old cattle ranch, Bo-Peep Meadows, about 4,000 acres in tracts. No. 1—1,240 acres, 100 acres sweet clover, 40 acres native hay, 60 acres now in alfalfa, 100 acres fine corn, balance good pasture; plenty of timber for shade and protection, watered by spring well, and windmill and all nicely fenced. A completely equipped ranch for dairy or purebred livestock. Good line of ranch improvements including water system. Located two miles from Deer Trail, on U. P. R. R. Price $45.00 per acre and exceptional good terms. C. K. Davies & Son, 434 Foster Building, Denver, Colo

RANCH BARGAINS—172 ACRES MOUNTAIN ranch, good four-room house, large garage, barn for four head of horses, cow barn for seven head, good chicken house, other necessary outbuildings; 50 acres in hay, 12 acres oats and harley, some timber on the place, plenty of grazing land. On main road and mail route. Price $5,750; $3,000 down, terms on balance. Immediate possession.

You, and not I, will be the loser if you do not call in or write me before buying. I am selling farm properties exclusively of all kinds and descriptions and I have an exceedingly large number of exclusive listings of mountain ranches, stock ranches, irrigated and non-irrigated, improved and unimproved, and choice garden tracts and country homes, well located with excellent water rights, choicest of soil, priced right, and remember, you are dealing with one who knows land and land values. I am selling my properties on their own merits. You will find them just as represented. Call in, phone or write for particulars or appointments.

I have some very fine properties in the city of Denver to trade for farm property, both large and small, and city property for farm property.

See Charles, with Ehrenkrook, Phone Main 8104, 308 Ideal Building, Denver, Colo.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FALL RYE SEED, ABSOLUTELY PURE, 3½ cents per pound. A. J. Simonson, Cooper Building, Denver, Colo.

KANRED WHEAT FOR SALE—THIS WHEAT has been certified and was grown from seed obtained from the Kansas experiment station at Fort Hays last year. Price $3.00 per bushel F. O. B. Nunn, Colo. Hart Bros, Nunn, Colo.

GUARANTEED SEEDS — HIGH GERMINATING alfalfa, $12 bu.; Red Clover, $25; Sweet Clover, $15; Timothy, $5; Rye, $2.25; Sugar, $17.50 cwt. Bonds accepted. Meier Seed Co., Russell, Kans.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WRITE FOR DELIVERED PRICES ON CEDAR posts. Pay after unloading. J. B. Overton, Sagle, Idaho.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits, $2.50 each. Square deal, particulars free. Rusler Company, Johnstown, Ohio.

WANTED—YOUNG MAN TO WORK WITH COLlege dairy herd. State wages and recommendations in first letter. Address Box 3-C, Western Farm Life, Denver, Colo.

GOVERNMENT AND RAILWAY MAIL CLERKS needed everywhere; high salary; permanent positions. Particulars free. Write Modern Institute, 455 Charles Bldg,, Denver, Colo.

BIG MONEY AND FAST SALES—EVERY OWNer buys Gold Initials for his auto. You charge $1.50, make $1.35. Ten orders a day easy. Write for particulars and free samples. American Monogram Co., Dept. 114, Glen Ridge, N. J.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HONEY.

DELICIOUS NEW HONEY, 10-POUND PAILS $2.50; 60-pound cans, $13.00. You will find this honey pure, clean and nice. A. A. Lyons, Fort Collins, Colo.

"THEBESTO" ROCKY MOUNTAIN HONEY, light colored, thick, fine flavored; per can, five pounds net, postpaid, anywhere west of Ohio river, $1.50. Send remittance with order. The Colorado Honey Producers' Association, Denver, Colo.

BEES.

FOR SALE—TWO HUNDRED STANDS OF BEES, eight frame boxes with supers in good condition, $12.50, F. O. B. Kittie, Tex. T. H. Hammon, Three Rivers, Texas.

SACKS.

100,000 SACKS FOR SALE, SECOND-HAND. Western Sack & Burlap Co., 2727 W. Colfax ave., Denver, Colo.

TANNING.

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

HATS CLEANED.

OLD HATS MADE NEW. S. M. BELWOOD, 1542 Court place, Denver.

VIOLINS.

VIOLINS WITH COMPLETE OUTFITS FOR SALE on easy monthly payments; five days free trial. Write Miss Bertha Mardiss, Shawnee, Kans.

Boost your Egg Yield Now!

HANG a Coleman Quick-Lite Lantern in your hen house a few hours these winter nights and mornings. It puts your hens on a spring laying schedule. Longer feeding hours greatly increase egg production. Users report from 15% to 20% more eggs. Poultry authorities and practical poultrymen recommend artificial light to boost the egg yield. Thousands are now making bigger profits by selling more eggs than ever at high prices.

Coleman Quick-Lite

"The Sunshine of the Night"

Style LQ-337

Makes and burns its own gas, from common motor gasoline. Gives 300 candle power of brilliant white light. Brighter than 20 old style oil lamps. Can't spill fuel or explode, even if tipped over. 12 hours of light on one filling. Lights with matches—no torch needed.

Built of brass, heavily nickeled. Will last a lifetime. Mica globe and reflector. Won't blow out. Handiest and most convenient light you ever saw. For very large hen houses we manufacture the same form of lighting in a complete plant, equipped with fixtures, globes, etc.

15,000 DEALERS sell Coleman Quick-Lite Lanterns, Lighting Plants and Lamps. If yours can't supply you, write us for booklet "More Light—More Eggs." Address nearest house, Dept. L-18.

THE COLEMAN LAMP COMPANY

WICHITA ST. PAUL TOLEDO DALLAS LOS ANGELES ATLANTA CHICAGO.

rie and get into one of these cactus patches with your flivver? Didn't your tires bristle with spines? Can you imagine the effect of even a few cactus plants in a chicken yard, especially when young chicks walk over them day after day?

I may be mistaken, but it does seem to me that this offers the explanation. There is nothing in the ground that could poison the feet of the chicks. I know of no weeds that would affect them in this unusual way, but I do know just what cactus will do to the feet of any chick or child. Would like to hear what the veterinarians at Fort Collins have to say about this, or what you think of it.—F. P., Arapahoe county, Colo.

F. P.'s suggestions that the foot and head disease of poultry running on sod may be caused by cactus has already been taken up by the veterinary department of the Agricultural College at Fort Collins. Dr. Newsom is testing the matter. I went with him several times to one of the farms near Fort Collins where this disease was prevalent in a flock that was running on sod. We dug up a lot of cactus on the place and took it back to the college where baby chicks were run on this soil and results watched. We expect to hear from Dr. Newsom in the near future as to just what he found out.—W. E. V.

INVENTIONS.

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

PATENTS.

PATENTS—BOOKLET FREE. HIGHEST REFERences. Best results. Promptness assured. Send model or drawing for examination and opinion. Watson E. Coleman, Patent Attorney, 624 F st., Washington, D. C.

BUTTER WRAPPERS.

BUTTER WRAPPERS—FINEST PARCHMENT, pound size, neatly printed, guaranteed. By mail promptly at 100, 60c; 250, $1.25; 500, $2.00; 1,000, $3.75; postage prepaid. Home Specialty Co., Middleton, Idaho.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

AUTO AND TRACTOR SCHOOLS.

THE DENVER Y. M. C. A. AUTOMOTIVE School guarantees satisfaction in teaching these well-paying trades: Auto and Tractor construction and repair, oxy-acetylene welding, vulcanizing (including truck pneumatics), and after Sept. 1, storage battery building. Day and night; School backed and supervised by Denver automobile industry. 600 students last year. Our object is service, not money-making. We charge less and give more personal attention. If you are mechanically inclined, write for descriptive booklet.

TRUCKS.

TWO-TON HIGHEST GRADE HEAVY DUTY truck. Complete with stake body, cab and windshield, generator, electric lights, self-starter, pneumatic tires, etc. A beauty, taken in on foreclosure, but never used. Can be bought at a saving of $500. Write quick for full particulars to E. E. Scott, P. O. Box 945, Denver, Colo.

TRACTOR AND FARM IMPLEMENTS.

FOR SALE—36" BIDWELL BEAN THRESHER, used only two seasons; good condition, $450. Universal Bean Harvesters, new, $25.00 each. G. T. Huston, Strasburg, Colo.

POWER HAY PRESS AND 12-25 AVERY TRACtor; both guaranteed excellent working order; $900; tractor alone, $600; real bargain. Owner, 2015 East 12th avenue, Denver, Colo.

CORN HARVESTER—ONE MAN, ONE HORSE, one row, self gathering. Equals corn binder. Sold direct to farmers for twenty-three years. Only $28, with fodder binder. Shipped by express to every state. Free catalog showing pictures of harvester. Process Corn Harvester Co., Salina, Kansas.

AUDITS AND CLAIMS.

LIVESTOCK SHIPPERS—THE PUEBLO TRAFfic Bureau will audit your freight bills, charging commission of 50 per cent of the amount recovered. Loss and damage claims against the railroad company will be handled on a basis of 15 per cent of the amount recovered. Pueblo Traffic Bureau, Pueblo, Colo.

SEE COUGHLIN FIRST

WHEN YOU WANT TO BUY A NEW YORK STATE FARM.

Every size and every price. The farmer's price to us is our price to you.

REAL ALFALFA LAND—230 acres, 190 tillable; large orchard; fine buildings; 1½ miles to town; on good road. All at $55 per acre.

A COZY HOME, $4,000.—70 acres fertile soil; 6-room bungalow; basement barn; large silo; splendid orchard; good road; 1 mile from village.

11 PUREBRED JERSEY COWS with this 178-acre alfalfa farm; 4 horses; all machinery; on State road next to school and creamery; fine buildings; trout stream; 38 acres timber. $11,000, $3,500 cash.

Send for our catalog today.

COUGHLIN'S FARM CLEARING HOUSE, 121 S. Warren St., Syracuse, New York State

Not Caused by Cactus.

Mr. W. E. Vaplon: At your request, I am summarizing the work which we did to determine the relation of cactus to the foot disease of chickens. Our method was to cover the bottom of a cage with cactus in such manner that it was impossible to place chickens therein without getting the spines in their feet. In fact, in every case the feet and head showed the presence of spines within a few minutes after the chickens had been placed in the cage. Altogether, we used four lots of chickens in this way. Lot No. 1 consisted of five, No. 2 of nine, No. 3 of nine, and No. 4 of eight. These were all placed in the cage and kept there from eight days to a month. In the first lot of five chickens, the feet swelled up somewhat and one of them showed a single blister between the toes. In the other lots no untoward condition seemed to be produced. I may say that we started these experiments rather firmly in the belief that the cactus would be found to be the cause of the disease. However, we have been unable to produce the typical disease in such manner.—I. E. Newsom, Veterinary Department, Colorado Agricultural College.

Why Hatches Fail.

In our spring hatching so many chicks died in the shell. Can you kindly inform me what may have been the cause? How old a male bird would you recommend for a flock where about half are pullets and the other half older hens that the hatching may possibly be successful.—A. H., Jefferson County, Colo.

A cockerel is fully matured at a year or before if he has been properly bred and raised. We never select because of age, but because of merit; by merit we mean vigor, health, good bone, fighting ability, and general appearance and type. We keep an old bird as long as he is active and vigorous if his chicks are good. If your fowls are confined to small runs you will not get as good chicks or as good hatches as you would from free range stock. I have always believed that the trouble you are having with your hatches is caused more because of fault in the old stock than anything else, but, of course, other factors have some bad influence also. You do not state whether you hatch by hen or incubator, but this trouble occurs in either case. Strong, healthy stock kept free of lice and other vermin, fed a variety of grains, greens and animal feed of some kind, allowed or compelled to work for all they get, is the best preventive we know of.—W. E. V.

Among the Breeders.

The Smith Livestock Co. of Chivington, Colo., are advertising some very fine Polled Herefords. They have good blood lines in their herd. Read the ad. in this issue of Western Farm Life.

Campion's big-boned Majestic Sunbeam and Beau Mischief Herefords are offered at private sale. He also has for sale purebred Poland China hogs. Don't fail to read his ad in this issue of Western Farm Life.

Phone Greeley 868 — Denver Champa 4506 York 7933W

Snook & Leachman

Auctioneers

SOLICIT YOUR SALES

WIRE US FOR DATES.

C. W. SNOOK, Greeley, Colo. — ORD L. LEACHMAN, 205 Livestock Exchange, Stock Yards, Denver

The Divide Herd

Young Bulls

We are now offering at very reasonable prices some good Shorthorn bulls suitable for small herds. Fall calves and a few yearlings priced for quick sale. Full particulars on application.

THE ALLEN CATTLE CO.,
SHORTHORN BREEDERS,
Colorado Springs, Colorado

Polled Herefords

Beau Donald, Polled Plato and Success blood constitute our herd.
SMITH LIVESTOCK CO.,
Chivington, Colo.

FOR SALE—ENTIRE HERD OF
Registered Holsteins

Bred right. Many of them closely related to the cow "Western Ascalon" that sold at the National Sale for $5,500. These cattle will be priced right. Must sell because of failing health. Call or write. W. B. & E. M. DOWNS, ROUTE 1, YUMA, COLO.

REGISTERED BIG TYPE DUROC JERSEY HOGS

Am offering some good Spring Gilts and Boars. Also some good fall gilts. Write for prices and breeding.
August F. Borgmann,
R. F. D. 4. LONGMONT, COLO.

Bargains in Bred Sows

20 yearling sows bred to farrow in August and September, priced to sell. All bred to our prize winning Crusader, winner at the Denver show. Shipped on approval and guaranteed.
"Daly's Durocs," Cambridge, Nebr.

COL. H. C. JENNINGS.
Purebred Livestock
AUCTIONEER
Also conduct Sales of Real Estate.
534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

GREAT BARGAINS—REGISTERED HEREFORDS; DURHAMS (called Shorthorns), and ABERDEEN ANGUS; ages 1, 2, 3 and 4 years old. Prices $125 per head and up. Also Percheron and Belgian Horses from 1 to 6 years old. Prices $125 and up. Write for circular. One bead or car lots. Breeding Guarantees with each.
ILLINOIS HORSE & CATTLE CO.,
Good Block, Des Moines, Iowa.

FOR SALE.
Sons of Sir Johanna Bess Segis
who combines in the closest degree the blood of **King Segis Pontiac Count** and **Piebe Laura Ollie Homestead King.** Send for their story.
PAHGRE VALLEY RANCH,
MONTROSE, COLO.

WILLIAM UPP
Livestock Auctioneer
Purebred Hogs a Specialty.
DEER TRAIL, COLO.

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weigbt at National Swine Sbow, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.
C. F. Burke, Mgr. Pueblo, Colo.

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

BEAU ASTER

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER
Holyoke, Colo.

DICKENS SHORTHORNS

Get Into the Purebred Game

I have twenty head of five to seven months old calves that I will sell at a close price of $50 to $100—and good ones at that.

Also yearling heifers and bulls, cows and calves.

Write me. I need the money

W. A. DICKENS,
Longmont, Colorado.

WHO NEEDS A PERFECT INDIVIDUAL TO HEAD THEIR HERD?

Son of a 23.23 lb. 3-year-old heifer—an unusually good yearly producer—by a son of our $5,000 bull—out of the 30-lb. cow who produced the great show cow and State Champion Junior 3-year-old Lilu Segis Pontiac, 34.25 lbs. butter in 7 days.

He is about one-half white, and a beauty. Ready for light service. The first check for $350 takes bim.

SANBORN MEADOWS,
MRS. R. G. DOUGLAS. RUSH, COLO.

Glendale Stock Farm

Irvindale Rowdy
Grand Champion Belgian Stallion
Chicago, 1917,
Denver, 1918
and 1919

Breeders of
BELGIAN HORSES
and
POLLED HEREFORD CATTLE
Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.

Glenrose Farm Herd

REGISTERED DUROC JERSEY HOGS.

Bred Gilts and Weaned Pigs. Also a few good boars for sale. All big-boned.

R. C. VAN SCOY & SON,
Highland Station, Route 5 Denver, Colo

REGISTERED
JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.
H. J. VAUGHN, KIRK, COLO.

Milking Shorthorns
Public Sale, October 11, 1920

Wyldemere Farm at Littleton, Colo.

40 HEAD --- 36 FEMALES

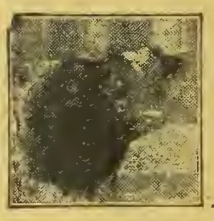
Record of Merit Breeding from Herds of

J. B. Benedict, Wyldemere Farm, Littleton, Colo.
Pine Valley Dairy & Farms Co.,
Colorado Springs, Colo.
Bonvue Farms, Denver, Colo.

Good Individuals—All Young and Bred to Record of Merit Bulls.
For Catalog Address

C. H. HINMAN, Stock Yards, Denver, Colo.

LEACHMAN & SNOOK, Auctioneers.



DOWN IN TEXAS

Fifteen grass-fed, range-raised Shorthorn steers witb tbe phenomenal weight of 1,475 lbs. made the high record weight and price for the year, at Fort Worth, July 16, $13 per cwt., an average price of $192.75. These were range-raised Shorthorns, mind you.

At Chicago the same week an Iowa load of Shorthorn yearlings made the high record, selling at $17.25 per cwt. They averaged 994 lbs. and sold for $171.40 per head. Weight and quality both, you understand.

It pays to grow Shorthorns.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION,
13 Dexter Park Avenue Chicago, Illinois

When You See a **GOOD SHORTHORN**

Think of Jay & Allan, Boulder, Colo.
STOCK OF BOTH SEXES FOR SALE.

MILK RECORDS

Do Not Replace Straight Bates Shorthorn Blood

FOR

Straight Bates Shorthorns are the "foundation source' of the Milking Shorthorns of England and America.

The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

Verdun Fairfax, 547803.
FOR IMMEDIATE SALE.

Six young bulls of Fairfax breeding, $300 to $500. Two choice berd bulls, and Fairfax Heifers. Also few choice heifer calves. All stock disease free, and guaranteed.

Prompt Attention to Inquiries.
SNEFFELS LAND & CATTLE CO.
RIDGWAY, COLO.

MILKING SHORTHORNS.
All Cows Officially Tested. 125 in Herd.

Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.

THE BONVUE FARMS CO.,
Stockyards, Denver, Colo.

Wallie Farm Reg. Holsteins
State Milk Record

Established by Mystic Polkadot Lottie, junior 2-year-old, 540.4 lbs. milk in seven days. Best day's milk 83.6 lbs. Fourteen other excellent A. R. O. cows developed recently. All records made without fitting or forcing.

A number of wonderful records will unquestionably be made on these cows at next freshening. Take advantage of this fact by buying a Wallie Farm bull calf now. A few 2-year-old heifers for sale.

Herd Sire KING JOHANNA SEGIS PONTIAC
"His sisters bave broken over 100 world's records."

W. G. Foster, Owner, 4800 So. Penn.
Phone Englewood 122, Denver.

World's Milk and Butter Records

And Great Show Ring Winnings Galore Are Represented in the Blood of This Great Sale

At Hall Brothers, Proprietors Western Holstein Farm, 5½ Miles Southwest of Denver, Colo., on the Morrison Road.

Mark the Date
October 5th

Mark the Date
October 5th

150 Head

150 Head

We are disposing of this great Registered Herd of Holstein-Friesian Cattle at public auction to divide our money and settle our partnership in this great breeding and producing herd. The herd represents in blood lines the blood of Sarcastic Lad, Pontiac Korndyke, Hengerveld De Kol, and is built on the families of the Johannas, the Colanthas, and the Ormsbys, and stands today as one of the great herds of the breed. Being healthy, of large size, refined, and uniform in conformation and showing great production and qualifications of show ring winnings, are the characteristics of the animals of this herd, and their official records and show ring winnings stand high in the record office of the National Holstein-Friesian Cattle Association.

Seldom is such a herd comprised of the blood of this herd and carrying the great characteristics of producing and breeding ability ever offered to the public in open market, and there are animals in this herd that could not be duplicated by private treaty anywhere in the United States for thousands of dollars. We engaged in the dairy business here in Denver, Colo., as young men with mighty little money. Our business has grown to large holdings of various propositions. The establishment of this high-class Registered Herd was started about thirteen years ago, and was established upon the leading blood of the day. We were familiar with the livestock business, for we were raised in it, and knew the value of good Blood in livestock. In a way we both regret the disposing of this great herd of Holstein-Friesians, as it has been a means of great profit and a source of satisfaction and personal pleasure, but our responsibilities are increasing and our holdings growing, and we feel that this partnership breeding proposition should be dissolved—hence the dispersion sale.

In response to our decision we are offering to the breeding public one of America's great Registered Holstein-Friesian herds of Cows, Bulls and Heifers.

October 5, 1920 *HALL BROS.* Owners and Breeders. **October 5, 1920**

Everything high-class and on the square at this sale! Come if you want really high-class Holsteins. Report at the Oxford Hotel near the Union Depot for information regarding how to get to the farm.

T. B. Regulations same as prevailed at National Sale at St. Paul last June.

CATALOGUES READY!
LUNCH AT NOON!
SALE 9 o'CLOCK SHARP!

CARLOS W. HALL, in charge of Sale.
W. H. MOTT, Herington, Kas., Assistant.
COL. G. M. BANKS, Denver, Colo. Auctioneer

Campion's Majestic Sunbeam and Beau Mischief Herefords

MAJESTIC SUNBEAM No. 364681. Calved February 25, 1911. Sire—Majestic the 24th No. 293221. Dam—Armour Sunbeam No. 85081. Majestic Sunbeam, grandson Imp. Majestic, one of the best and biggest boned Hereford bulls ever imported to this country.

BRUMMEL MAJESTIC No. 628435. Calved March 20, 1917. Sire—Majestic Sunbeam No. 364681. Dam—Don Amelia 2nd No. 135871. 56¼ per cent Anxiety, 31¼ per cent Imp. North Pole, Lord Wilton Grove the Third. 12½ per cent Imp. Majestic.

AMELIA'S BEAU MISCHIEF No. 557094. Calved April 27, 1916. Sire—Beau Mischief the 15th. Dam—Don Amelia 2nd No. 135871. Ninety per cent Anxiety blood. Secretary Kinzer says its almost impossible to write a better pedigree.

Sunbeam Farm,
8 Miles East of Wellington, Colo.

"They're Bred in the Purple"

The best types of Majestic Sunbeam and Beau Mischief Heifers and Bulls for sale.

The Big Bone Registered Poland China Sows and Gilts and Boars for sale at all times, also fullblooded bred gilts. Come and see them. Visitors welcome at "Sunbeam Farm" any time.

A. J. Campion
DENVER, COLORADO.

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And we will get you the High Dollar for your stock. Experienced salesmen in every department.

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DeWITT HEREFORDS

HERD BULL—MISCHIEVOUS JR., by THE HEIR

His dam is Mischievous 3rd, a full sister of BEAU MISCHIEF and the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of
GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

Six Registered Holstein Bull Calves

FOR SALE

Splendid individuals and nicely grown. From 3 to 12 months old. Dams with records up to 29½ pounds. See these calves, the sire, dams and granddams—then make your selection.

Priced from $100 to $1,000

See our exhibit at National Western Stock Show, January, 1921.

Ben F. Simpson, 2008 15th St., Denver, Colo.
WALTER F. ORMSBY, Herdsman.

HIGH CLASS JERSEYS

Our two cars of Jerseys bought in the east have been delayed on account of strikes. We expect them soon now. Some great cattle.

We have a few splendid bull calves, most of them by the great Majesty's Feather Lad; and we need the room, so prices are right.

Out of Duroc boars, but have a couple of bred gilts to go.

McClenahan & Dixon, Greeley, Colo.

NORTH PARK HEREFORD RANCH

Will sell any part of 1 Carload Registered 2-Year-Old Heifers; 1 Carload Registered 3-Year-Old Heifers with Calves by Side; 300 Extra Choice Grade Breeding Cows.

J. H. DICKENS, WALDEN, COLO.

Cheyenne——to——California

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Shipped from our herd to Wm. Briggs, Dixon, Calif.

They were choice ones too

We can satisfy discriminating buyers.

Write for Photo "W" with Pedigree.

Hereford Corporation Cheyenne, Wyo.

L. G. Davis Herefords ANXIETY BRED

Sires in Service:
The Great BEAU CARLOS 2nd
BONNIE WESTON, by Bonnie Brae 15th
WYOMING 4th, Champion Senior Yearling Denver, 1919.

Have for sale 20 Heifers, 10 to 15 months old.
Our own breeding.
We have a few High Class Yearling Bulls For Sale.

L. G. DAVIS, Saratoga, Wyo.

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
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JAMES PONTIAC DEKOL ORMSBY

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R. of M.—15,175 Lbs., 546.3 Lbs. Butterfat. Class A. Only a few cows of this breed exceed this record in Class A official test.

Bulls and Heifers for sale at Reasonable Prices.

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1866 WINCHESTER 1920

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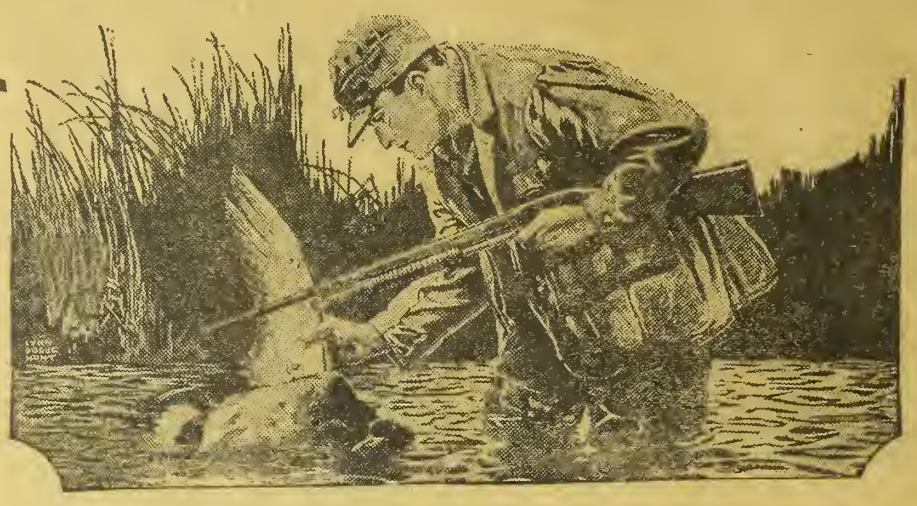
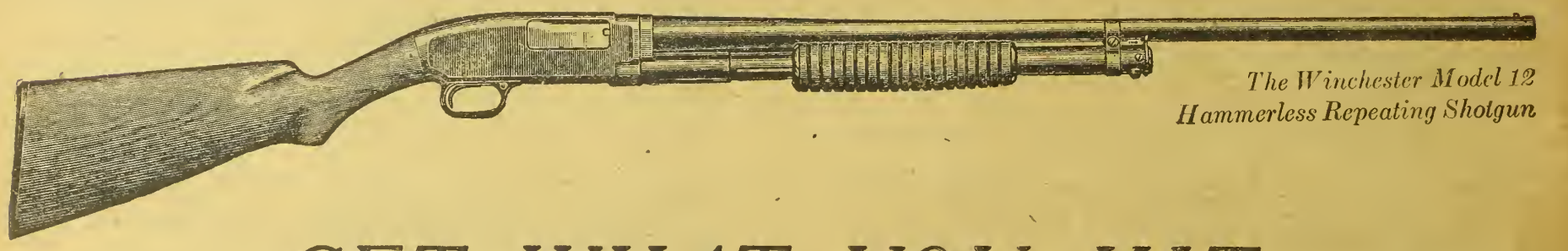


The Perfect Pattern



The Winchester Model 12 Hammerless Repeating Shotgun

GET WHAT YOU HIT

WITH THE PERFECT PATTERN

THE underlying reason for Winchester popularity among duck shooters is the Winchester *perfect shot pattern,* with which they can *regularly* bring down their birds neatly killed, close to the blind.

As a practical shotgun user, it will occur to you that there must be a special reason for this Winchester accomplishment. There is.

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The Winchester perfect pattern is achieved through *uniformity,* through great care in maintaining perfect balance throughout all details of gun and shell making.

The pattern shown above was made at 35 yards, with 1¼ ounces of *standard* No. 5 shot; 30-inch circle; mallard duck drawn actual size. It was shot with a Winchester Model 12 Repeating Shotgun of standard grade, and an ordinary Winchester Repeater Shell.

Shoot a Winchester Model 12 Hammerless Repeating Shotgun. Or if you prefer, a Model 97 with outside hammer.

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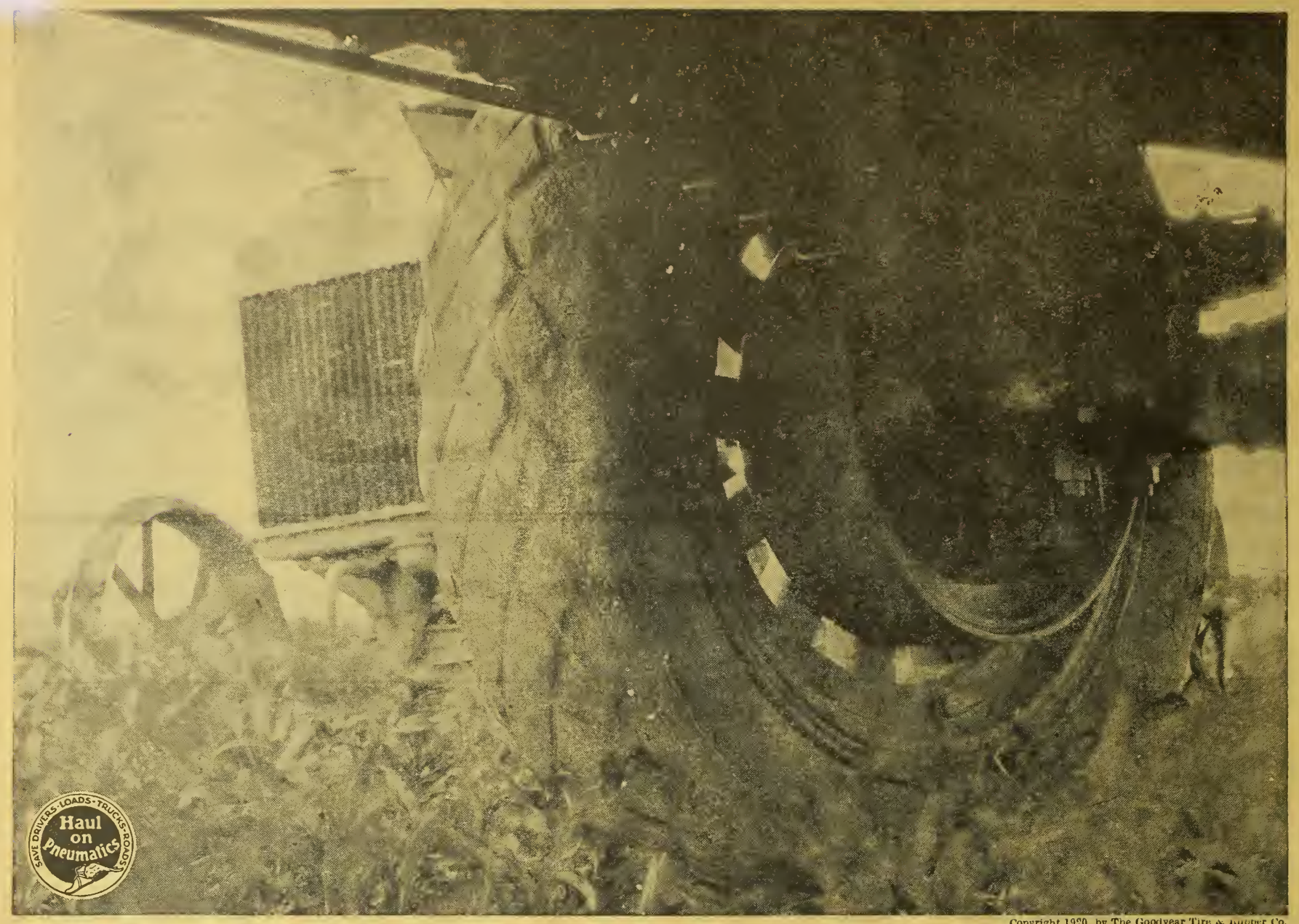
WESTERN Farm Life

Vol. XXII. *Denver, Colorado, October 1, 1920.* *Semi-Monthly*

FALL WORK SAVES WINTER MOISTURE FOR NEXT SEASON'S CROPS



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"Soon after I got my truck I made a big improvement by changing quickly to Goodyear Cord Tires. The pneumatics save time, fuel, repairs and shrinkage in livestock—they have increased my hauling radius by 35 miles and go anywhere on the farm. I figure the one truck equal to six teams on my place. Motorization offsets the labor shortage and pneumatics help the farmer to motorize properly."—Frank B. Williams, General Farmer, Cedar Bluffs, Nebraska

MANY a resourceful farmer, like this one, now saves labor, time and money by doing his farm hauling and market hauling on Goodyear Cord Tires.

He hauls steadily through plowed fields, barnyard mud, sand trails and melting snow because these tractive pneumatics grip firmly as they go.

He hauls eggs, fresh vegetables, delicate fruit and shrinkable livestock with utmost safety because these are cushioned properly on the big Goodyear Cord Tires.

He hauls quickly to pumping, grinding, shelling, harvesting and wood-cutting machinery because of the easy-rolling qualities of these helpful pneumatics.

Developed with the manufacturing care that protects our good name, the hardy strength of their Goodyear construction is repeatedly expressed in mileages of exceptional length.

Detailed information, concerning pneumatic-tired farm trucks and general farm motorization, will be sent promptly on request by The Goodyear Tire & Rubber Company, Akron, Ohio, or Los Angeles, California.

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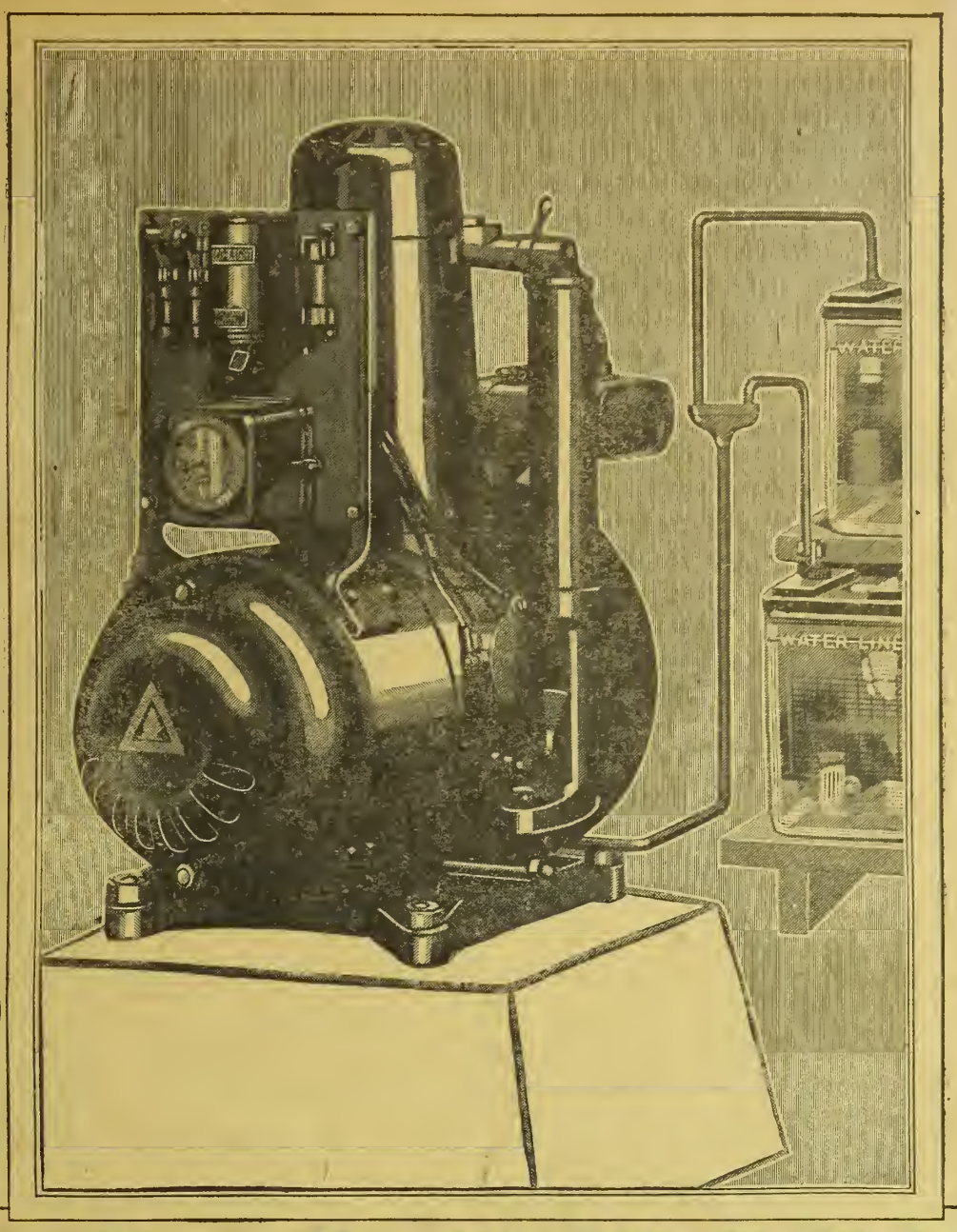
CORD TIRES

Bright, Clear Electric Light and a Happy, Contented Family

Free from Drudgery—— Easier Times for Mother



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More Than Just a Machine

When you buy Delco-Light you buy more than just a **machine.**

You buy continuous electric light and power.

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And—in the end you find that your purchase hasn't cost you anything at all. It has given you all these things and in addition has actually paid for itself in the time and labor it has saved.

In every nook and corner of the country you will find Satisfied Delco-Light Users—125,000 of them.

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DELCO-LIGHT COMPANY, DAYTON, OHIO.

E. H. FRAZIER, Distributor
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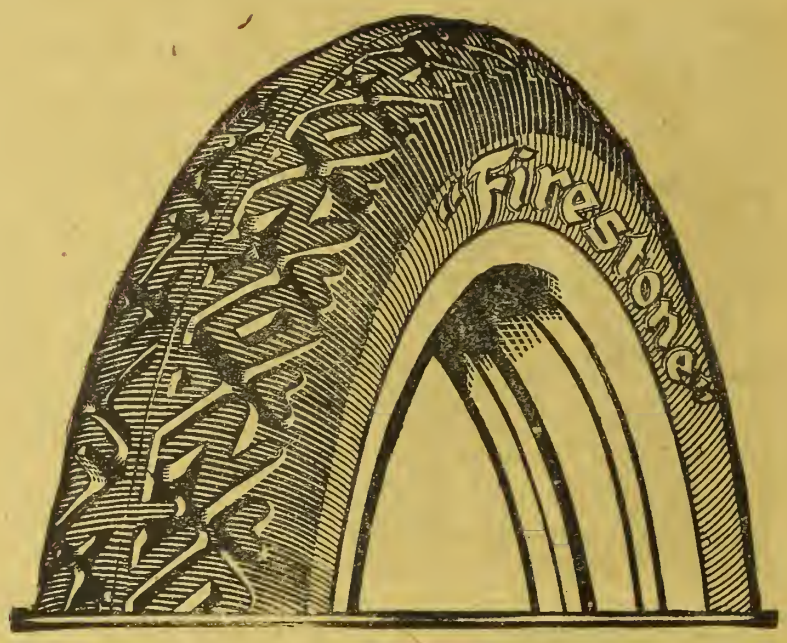
Buy a set of Firestone **3½**-inch tires and discover the big feature behind their uniform service—perfect ***balance.***

Firestone has devoted eighteen years to developing the ***balanced*** tire, giving light car owners more mileage at low cost—most miles per dollar

The answer to getting more service and more ***uniform*** service out of all four tires is the Firestone **3½.** It is more than thickness of tread or amount of rubber and fabric, greater cushioning or greater air capacity. It is proper ***balance***—the way each of these component parts of a Firestone **3½** tire **is** made to co-ordinate.

Sales of this tire increased 96% for the first six months of this year. The result justifies the effort because the stamp of approval has been set by the public on the Firestone **3½**—***the balanced tire.***



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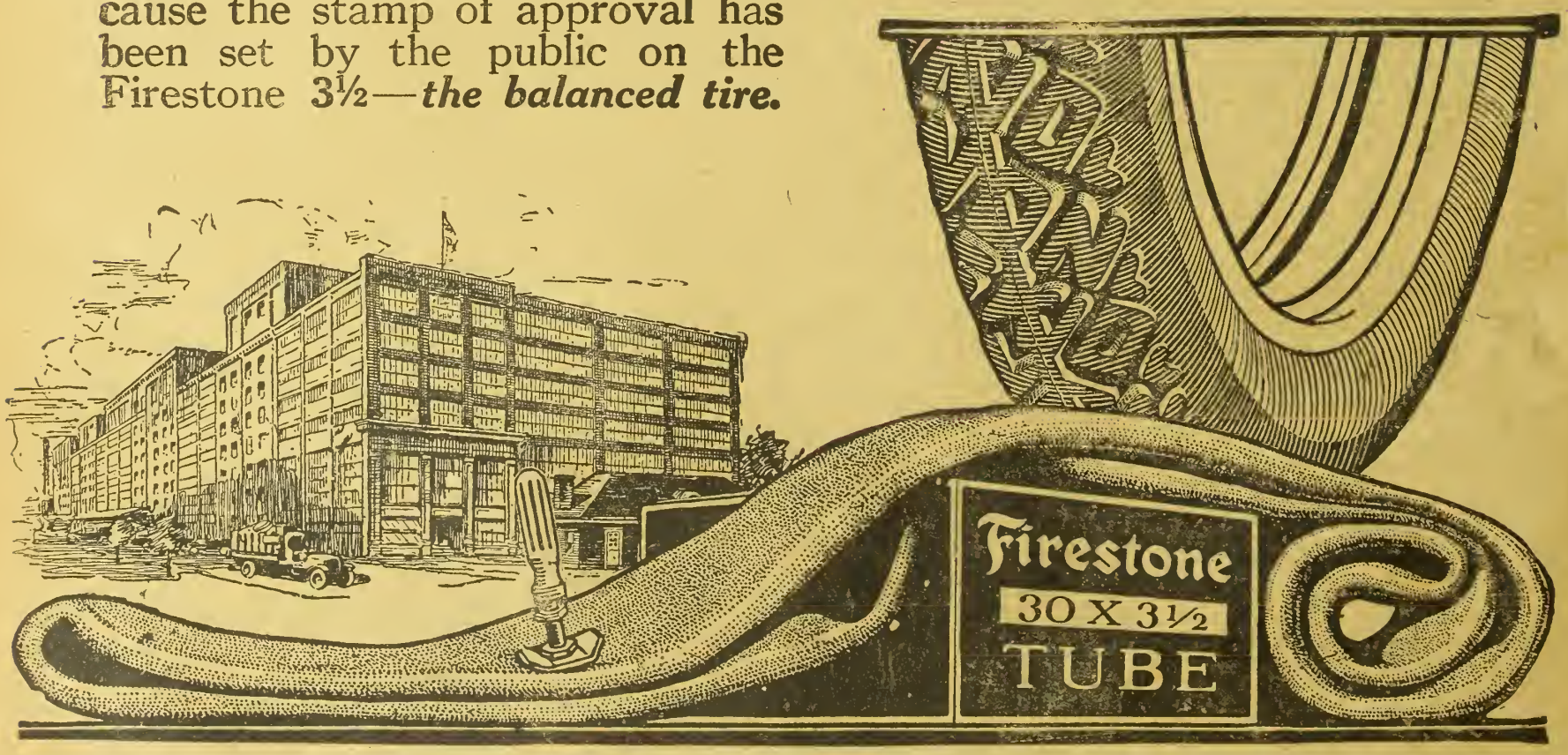
Red Tube $4.50



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Largest Circulation of Any Farm Magazine in the West

WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Published Semi-Monthly by The Farm Life Publishing Co., Denver, Colo. 1518 Court Place.

Entered at the Denver Postoffice as Second Class Matter

VOLUME XXII. DENVER, COLORADO, OCTOBER 1, 1920. Number 19.

How Community Co-Operation Builds a Strong Fair

ELEVEN NEIGHBORHOODS COMPETE FOR SUPREMACY IN LOGAN

ALVIN T. STEINEL.

Two youthful Logan county breeders. On the left is Ralph Eakin, on the right Herbert Sandstead.

COMMUNITY co-operation in handling a fair is well exemplified in Logan county, Colo., where the fair is considered a public enterprise. Sterling business men originated the fair association years ago and conducted several good expositions, but were unable to make it pay. The county commissioners then took over the association, buying the grounds and buildings from the business men and giving the fair the backing of the county. The result has been continued growth until at the present time the Logan county fair is considered in many respects the very best in the state. The educational displays have not been developed to the high state that is found in Boulder county, but from the standpoint of crop exhibits Logan county leaves nothing to be desired.

One of the big features is the rivalry developed between various communities of the county in their agricultural displays. Last year six communities made such displays, but this year there were eleven. Each tried to outdo the other in the selection of agricultural products typical of the crop program in its neighborhood. Some of these communities are exclusively dry land sections and it is interesting to note that this year as was the case two previous years, a dry land section won first prize. The winner was Fleming, a noted wheat section in Eastern Logan county. The farmers in that community demonstrated that they were not exclusive wheat farmers, but that they grow a variety of food and feed crops and that they stress quality. These community exhibits are judged 50 per cent for quality, 25 per cent on number of varieties and 25 per cent on appearance and arrangement of exhibit. The awards were made as follows: Fleming, first; Mount Hope, second; Merino, third; Peetz, fourth; Padroni, fifth; Pawnee Valley, sixth; Iliff, seventh; Kelly, eighth; Graylin, ninth; West Plains, tenth, and Willard, eleventh.

There were many uique features in these displays. Among them might be mentioned the artistic sign giving the community name, Padroni, which occupied the center of the wall space of this display. This sign was made from farm seeds, 14 or 15 varieties being used, including corn, cane, feterita, pumpkin, wheat, flax, oats, watermelon, beans and other seeds. Mrs. E. Dickenson was responsible for the execution of this unique piece.

Heretofore community exhibits had been confined to farm products and were the work of men. This year, however, through the efforts of Miss Susanne Thompson, home demonstration agent, the women became interested and six groups of community clubs prepared exhibits of household material competing for a $25 prize. Atwood won first premium; Iliff, second; Padroni, third; Peetz. fourth; Mount Hope, fifth, and Kelly, sixth. Details regarding these exhibits will be left to the editor of the home department. The value of this work not only lay in the lessons conveyed by the exhibits along the lines of household economy, but in the fact that some 35 or 40 farm women came to Sterling in advance of the fair to bring in the material and prepare the handsome displays. It also resulted in active interest among the women from each of these six communities, who were there to compare their own with the work of other groups of farm women. It is interesting to note that fully one-fourth of the space in agricultural hall was devoted to household and juvenile club exhibits. It indicated that the Logan county farmers and their wives and children are pulling together.

One could clearly note the good effect of careful organization work performed by the county agricultural agent and the county home demonstration agent. That this work is appreciated at home is quite evident from an editorial that appeared in the Sterling Advocate at the close of the fair, from which we quote the following:

"The showing in the agricultural hall, and much of that in the livestock department in a large measure, can be traced back to the work of the county agricultural agent, J. E. Morrison, whose efforts have been untiring. He has had capable and loyal assistants both among those employed to co-operate with him and among the farm people themselves. It has been largely through his work that the various communities have been organized for experiment and study. The displays at the fair do not represent the whole of his work, by any means. They are simply an index of the results of his work. The fair has many people who are to be praised for their work, but Mr. Morrison's effort, while interlinked with the fair, is more fundamental even than the fair and is actually the making of the more important phases."

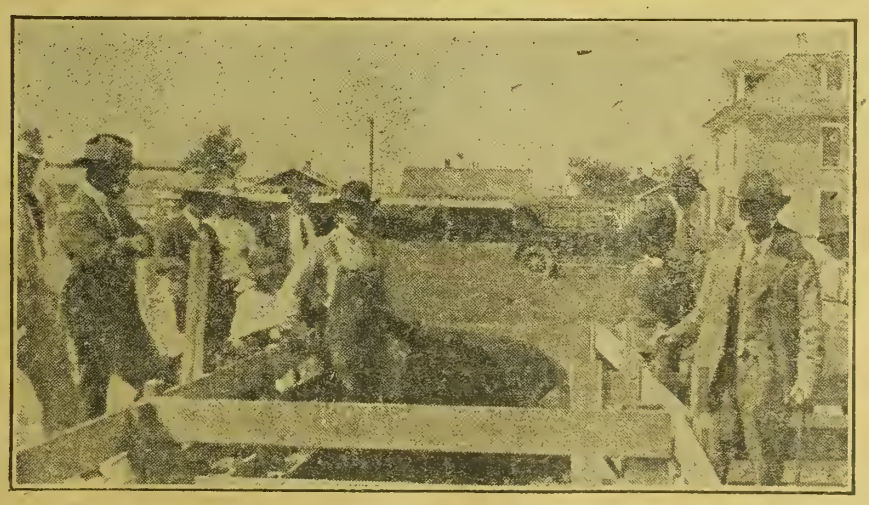
The livestock exhibits were equally as strong in their classes as were the agricultural displays. There was a good representation in beef cattle, judged by Otto Fulscher, the Hereford breeder of Holyoke, Colo., and in the dairy cattle, judged by H. D. Parker, the Guernsey man from Greeley. Hogs were judged by R. J. Harding, a practical hog raiser from Morgan county, who has a long record as judge and show man gained in the corn belt, and the horses were judged by Dr. G. R. Teeple of Denver.

Another strong feature was the poultry exhibit, judged by H. H. Chase, editor of the Inter-Mountain Poultry Advocate of Colorado Springs. Mr. Chase declared the show to be one of the strongest held in connection with any Colorado county fair in years. The poultry was housed in a new building, well arranged for this particular purpose.

In the hog division the members of the Boys' Pig Club showed themselves able to compete and win out over adult breeders. Herbert Sandstead, winner of the silver trophy cup offered by Western Farm Life for sweepstakes sow at the National Western Stock show last winter, was on hand with some of his registered Durocs and added to his winnings by pulling down first on litter; first on aged sow; first and second on boar; first on gilt and the First National Bank of Sterling prize for best pig club exhibit. These winnings were in the club classes. In the open classes this youthful breeder won first and second on Duroc boar, second on gilt, and first on aged sow. He is an enthusiastic young hog raiser, who comes by his ability honestly, his father, W. M. Sandstead of Willard, having been engaged in hog breeding in Nebraska for many years.

Another of the club members who distinguished himself was Ralph Eakin, also of Willard, whose Durocs won him first and second in pig club for sow under one year and first and third in open competition, first in junior sow in pig club and first in junior yearling sow.

One of the accompanying illustrations shows Mr. R. J. Harding, a Morgan county Duroc breeder, who judged the hogs at the Logan county fair, and P. N. Quist of Iliff, winner of sweepstakes on boar. The photographer was unable to get a good view of the winning boar, an exceptional animal of perfect conformation and type. He is Invader Chief 328831.



Judging the hogs at the Logan county fair. At the left in background is P. N. Quist, owner of the sweepstakes boar, and at right R. J. Harding, a Morgan county Duroc breeder, who judged the hogs at Sterling.

Space limitations prevent more extended mention of the livestock division which was excellent in quality and showed improvement in number of exhibits over the previous year.

Exhibitors of small grain, corn and potatoes, participating in community displays were obliged to make separate exhibits on these products if they wished also to enter the individual contest. This new ruling simplified the work of the judges and prevented the disarrangement of community exhibits, which occurs when the classification allows the individual to enter one display in two classes. Prof. Alvin Kezer, who was the chief judge of agricultural products, commended the fair management on this ruling. Prof. Kezer was assisted by Messrs. Burdick and Chase of the Agricultural College staff.

Morgan County Fair.

H. A. LINDGREN.

The Morgan county folks have just reason to be proud of their 1920 fair which was held under very favorable weather conditions August 31 to September 3. The attendance was large, assuring the management of a good sum with which to pay expenses. The fair grounds are owned by the American Legion and will be improved for park and fair purposes.

On account of the busy season the display of agricultural products was small and not anywhere near an indication of what the section produces. The display, however, was of good quality. Both dry land and irrigated crops were shown. The corn and small grains were exceptionally good. The exhibits of corn again demonstrated the possibilities of that crop for the section.

One of the strongest features of the show was the livestock display. The Morgan county people have great stock and they take pride enough in their animals to show them. One of the first things that attracted the writer's attention upon entering the grounds was the exhibit of Shorthorn cattle. Morgan county has a Shorthorn Breeders' Association of some ten members. The display was a credit to them and many of the animals were worthy of state fair and stock show entry. The exhibitors were Stewart & Shaw of Wiggins; Lake View Farms, Fort Morgan, owned by J. P. Curry; W. A. Sergeant & Sons, Fort Morgan; Cumberland Farm, owned by R. L. Ripply, Fort Morgan, and W. H. Shafer of Weldon, Colo. The Shorthorns were judged by Dick Jay of Boulder.

The junior and grand champion on female was awarded to Stewart & Shaw on an excellent young heifer, Queen Comet 5th. She was sired by a son of Dale Clarion. The senior champion female was Roan Beauty, owned by Lakeview Farms. In the bull classes the grand champion award was placed on Cumberland's Favorite, owned by Cumberland Farms. This bull is an excellent individual and a good herd sire. The junior champion bull was Royal Star, owned by H. H. Shafer.

There was but one herd of Herefords. They were shown by C. H. Gilbertson of Fort Morgan. This herd is well known in Colorado.

In the sheep section only one herd was shown, that of C. D. Turner of Hillrose. His display won all ribbons. Included in this exhibit was the grand champion Hampshire ram of the last National Western Stock show.

The dairy cattle were represented by

(Turn to Page 20).

Boulder County Fair Impresses Farm Lessons

ROTATION, SEED SELECTION AND VARIETY TESTS EMPHASIZED

H. A. LINDGREN.

NO one can visit the Boulder county fair and come away without a store of valuable information which can be applied to farming operations. Really this is what our fairs need to strive for; in other words, make the exhibits educational. Their fair held in Longmont was all that one could hope for at a county fair. The grounds, which are owned by the city of Longmont, are well fitted with neat, well kept quarters for the housing of all exhibits.

The Boulder county fair is without question one of the best held in the state. This year the livestock exhibits were valued at $175,000. Of this amount the cattle represented $100,000; horses, $60,000, and hogs, $15,000. The larger part of these exhibits were from within the county, being an excellent indication of the agricultural wealth of this section.

On account of a heavy rain the first day of the fair, the track was in bad condition for the races. They were therefore somewhat handicapped. However, the weather turned out warm and soon dried the grounds so that all was pleasant the latter part of the week.

The horses shown were largely of the draft type. In the Percheron division the interest seemed to be strongest. There were 70 mules and horses in the show. The grand champion Percheron stallion of the show belongs to the Great Western Sugar Company, Longmont, and the grand champion Percheron mare to Wm. Hansen of Longmont. In the Belgian section, Nelson Bros., Longmont, carried away the grand championship on stallion. Other successful exhibitors were C. A. Dowell, Sam Dowell and Louis Bein, all of Longmont. In the mule classes John E. Burns of Louisville won on jacks. A large loving cup was awarded to Wm. Hansen on best draft colt, the cup being given by the Longmont Farmers Milling & Elevator Company.

A. J. Campion of Wellington, Colo., had the only exhibit of Hereford cattle on the grounds. This was the same herd that was shown at Loveland. The championship on bull was placed on Brummel Majestic, his herd sire, and the grand championship on cow was given to Lorna Sunbeam.

In the Shorthorn classes there were several herds represented. The grand championship on bull was awarded to Hartnagle Bros. of Louisville, Colo., and grand championship female to Sanford D. Buster of Hygiene on a calf club heifer. Several other herds were successful in winning in various classes, including Glen Martin and W. A. Dickens.

One herd of Red Polled cattle were shown, belonging to W. N. Henry of Niwot.

In the dairy classes two breeds were shown: Jerseys and Holsteins. In the Jersey classes C. J. Mather of Longmont was the winner without competition. In the Holstein cow class C. W. Dowell, Longmont, won the grand championship, and in the bull classes the award was given to J. J. Kalberer of Broomfield. An interesting contest was conducted in the dairy barns by the Boulder County Cow Testing Association. Four cows with known production were shown and all visitors asked to place them in the order of production. Premiums were given to the successful guessers. Many people took part in this.

The hog show contained more Poland Chinas than Duroc Jerseys. There were 172 hogs of all breeds shown. They were all of good quality and created much favorable comment. The veteran breeder A. D. McGillvray of Boulder was the successful contestant for both grand championships in the Poland China breed. One of the strongest classes in the hog show was a class of aged Poland China sows, all of which were exceptionally good.

Among the other exhibitors who won premiums were W. R. Reynolds, J. A. Davidson and C. J. Mathers, all of Longmont. In the Duroc Jersey division Burt Hart was the successful winner of both championships. The boys' pig and calf club work was a strong feature of the show. The stock being developed by the youngsters was of sufficient quality to be in the money in the general classes.

Agricultural hall, where the farm crops, flowers and household displays were exhibited, was one of the most attractive features of the fair. This building is constructed in such a way that it can be used as a theater. The outside floor is higher than the center, making it possible to stand at the outer edge of the room and see the entire floor at a glance. The center floor space was occupied by an exquisite display of cut flowers, while above and around were the vegetable, grain, cooking, honey and sewing displays. The hall was decorated with American flags, streamers and hanging flower baskets, made from big yellow pumpkins, hollowed out and draped with flowers. The effect was splendid and a credit to those who so diligently worked on its arrangement. The fancy work was neatly arrayed on the stage of the building and if the writer may be permitted to judge, it was as fine as anything that could be found of its kind.

The educational features of the farm crops display was the best the writer has ever seen. It is not so much a matter of bringing in something to show, but it is of value to know how and why they accomplished their results. In one portion of the hall was a display of grains grown in the county. On each sheaf of grain, neatly displayed, was a brief but concise story about that particular variety, where it was grown, its advantages and disadvantages, if any, and where seed may be obtained. A farmer could glance at this in a few minutes' time and gather valuable information.

Boulder county through its Farm Bureau, has become noted over the state as a place in which to get pure seed. To accomplish this the farmers have worked out a plan of registering seed. Any farmer who will live up to the requirements, and whose field passes a careful inspection by a committee named for that purpose, may have his seed registered or certified, and in that case his market for it is very much enhanced and he gets a better price than for unregistered seed. The field, in order to be certified, must be at least 99 per cent pure as to variety. This work has been carried on for several years and the result has been such as to give the farmers the distinction they now hold in the seed grain line.

In the Marquis and Defiance wheat tests which have been in progress for several years, the 1920 results show a lower yield on part of the Defiance, but the same for the Marquis as the average for the five previous years. This season the Marquis matured in 142 days, while the five-year average was 134 days. In case of the Defiance, it matured this year in 128 days, while the five-year average was 136.9 days.

Some very interesting data has been gathered on Kanred wheat, which is so much sought after at this time. The farmers of Boulder county have checked on a limited number of fields of this variety and found that it yields from 3 to 5 bushels more per acre than Turkey Red. The Kanred variety stools more than Turkey Red, as was shown by careful count on fields of both varieties. Turkey Red contained 7 8-11 heads average, and Kanred 11 2-3 heads average per stool. This wheat is becoming popular on account of its yield and the fact that it is claimed to be rust resistant, although it has been found to be affected in some instances in Boulder county. Its milling quality is said to be excellent. These displays of grain had been carefully arranged and labeled by the superintendent of the department, Mr. C. L. Hover, who is familiar with the history of seed development in Boulder county.

The display of sugar beets was exceptionally good. These were judged in four different classes, namely, weight only, sugar only, shape only, and a combination of these qualities. When the judging was done, one could associate the various qualities and gather some interesting information. In the sugar beet display was another exhibit to show the results of irrigating up the beets. The farmers generally have thought that this was not a wise practice. However, the display demonstrated that even though the seed was irrigated up as late as June 15 or thereabouts, a quite satisfactory yield is obtained. It was pointed out that this method should be employed early in the season, which would insure an earlier start and consequently a better yield.

The Great Western Sugar Company Experiment Station put on an exhibit showing charts on crop rotation. The suggested system was first year small grain with alfalfa seeded; second year, alfalfa; third year, alfalfa; fourth year, corn; fifth year, beets; sixth year, small grain with manure on stubble; seventh year, beets. The importance of beets following corn instead of alfalfa has brought 1,000 pounds more sugar per acre. Prof. W. W. Robbins of the company's experiment station emphasizes the importance of keeping up soil fertility by crop rotation. The work in the sugar company's experimental farm bears out this contention. Why be content with a 10 or 12 ton yield of beets per acre when 20 tons or better can be produced in a proper rotation?

There are many other things of value in the way of information for the farmer at the fair, but it cannot all be told in this article. Other fairs can well afford to copy the educational ideas followed by the Boulder County Fair Association and Farm Bureau.

Buena Vista Head Lettuce Shipped in Carlots

NEW HIGH ALTITUDE CROP PROVES WINNER ON THE MARKET

W. H. OLIN, Supervisor of Agriculture, Denver & Rio Grande Railway.

FOR years it has been demonstrated that superior lettuce can be grown under irrigation. The succulence of the lettuce grown in the Southern California district had made a market call so insistent that trainloads of lettuce are shipped each year across the continent to grace the boards of the leading hotels and restaurants of the east.

Last year a man of lettuce experience made a reconnaisance survey of certain lands along the main line of the D. &. R. G. railroad near Buena Vista at an altitude of 8,000 feet. The altitude, he stated, was favorable, the soil desirable and irrigation plentiful for producing superior head lettuce. So this experienced lettuce raiser and handler, Mr. G. D. Isbell, made a crop arrangement with Mr. S. E. Burlison, a Buena Vista rancher, to grow ten acres, It was a type of head lettuce Mr. Isbell had found did exceptionally well in the intermountain region.

The crop did well from the very start. The latter part of August express shipments began—users of this choice relish said the sample called for more. An average of more than 200 crates per acre were taken from ten acres planted. The trade fostered encouraged the planting of practically 150 acres this present season. The study of growing habit of head lettuce reveals that it does not require an excess of water in these higher altitudes. Quite the contrary seems to be the practice at Buena Vista. Just enough irrigation to keep up normal growth. Such heads, so crisp and appetizing, as Buena Vista lettuce, has intensified the market call 2,000 miles from the place where grown. The writer had never seen such large compact heads. It surpasses the quality of the California head lettuce and this has in the past been in a class all its own.

This season's crop has not yet all been harvested, but the present shipment of two to three cars per day will soon send it all to market. The lettuce is cut by modern methods. Quickly transported to a covered loading platform by auto trucks. Here it is sorted into grades 1 and 2. Expert workmen pack the graded lettuce in crates, each containing 2½ dozen lettuce heads. To insure keeping cool and crisp in transit two big scoop shovels full of pulverized ice is placed between layers in the center of each crate and the same amount of ice on top of the last layer in the crate. Three hundred fifteen crates make a car. With bunkers of refrigerator car filled to the full capacity in starting, and renewed at regular intervals en route, these cars of head lettuce arrive at eastern destination firm and crisp.

Prices growers receive vary of course with the weekly market. The writer was told that this new crop in the Buena Vista district meant a better return than any crop ever grown there. Returns this year will average better than $500 per acre. It is a well known fact that vegetables grown in our higher altitudes have a crispiness, succulence and flavor all their own.

Mr. Isbell with his Buena Vista lettuce has started something. Why should not our higher altitudes meet these market calls for choice vegetables in the populous east? Why should we mark time, letting our enterprising neighbors on the lower Western coast fill these market calls with their trainloads of vegetables shipping them right through past us and raking the well-earned profits of their enterprise?

California is on the extreme outpost, yet is it not true they are among the greatest workers in getting market-topping fruits and vegetables into successful, satisfied consumption? Why wait for California to fill all this demand? Mr. Isbell has demonstrated for two seasons now that high altitude lettuce from Colorado, grown right, has a market all its own. Yet this is but a beginning. Who will get going with asparagus, cauliflower, commercial cut flowers? California sends tons of violets across a 1,000 mile desert and sells them at a price dealers in hothouse types cannot equal.

What about the intense and surprisingly rich colors our dahlias, sweet peas, asters and other flowers assume in these higher altitudes? Nowhere can such colors be equaled. The writer is surprised that some floral department in some Denver store has not yet made use of this opportunity to obtain superior flowers. Cut in the evening they can be on sale the next morning.

There is good money in altitude farming not yet comprehended. Why not use this beginning work as an incentive to get busy and "cop" some of the California trade in vegetables and flowers? We are more than a thousand miles nearer the market that consumes them than are our western neighbors. With the same diligence and application that a Southern Californian has, we Coloradoans would use twice the crop land we do and get four times the returns we now receive.

Let more Isbells come in and get us busy growing the things in the higher altitudes that these experienced men of the trade know the market wants and can use.

Salt and strychnine sure gets the rabbits. County Crop Pest Inspector J. C. Snow recently made this report to the editor, that rodent committeeman J. E. Jensen of the Chester Farm Bureau had recently killed over 300 jackrabbits on his farm southeast of town. Mr. Jensen states that he saved twelve acres of corn with one and one-half ounces of strychnine and seven pounds of table salt.—San Pete County (Utah) Farm Bureau News.

One way to make country life more attractive is to beautify the farm both indoors and out. It's the outdoors we think most about in summer; flowers and shrubs help.

Farm Rental Systems Used in the Wheat Belt

GOVERNMENT SURVEY SHOWS THAT TENANTRY IS INCREASING

SIX distinct systems of renting exist in typical counties of the wheat belt visited by representatives of the Office of Farm Management, United States Department of Agriculture, primarily to gather information which would be helpful in acquainting tenants in the principal wheat-producing states with the renting systems other than their own in vogue in the region. Under four of the six systems the landlord is given a share of the crops only, as one-third, two-fifths, one-half, or two-thirds. A fifth system gives the landlord a half share in both crops and stock, while the sixth is a cash-rent system.

More than 400 tenants were interviewed, and records obtained in the following counties: Burton (Kan.) in about the center of the winter wheat growing area of the Great Plains; Spink County (S. Dak.) and Barnes County (N. Dak.), in the center of the principal spring-wheat region; Renville County (Minn.) and Clay County (Neb.) both typical of farming along the border of the cornbelt. In each of these counties the organization of the farms and the practice differ more or less on account of difference in geographic location.

In only two of the localities visited, namely, Kansas and South Dakota, do a majority of the tenants think, in view of their past experience, that they can become owners in their present localities within fifteen years. The owners renting additional land in all these localities, while usually admitting that a farm is not now so readily acquired by a tenant as when they bought, think that they could still become owners, were they starting to rent. From 85 to 96 per cent of the tenants expect to own farms, if not in their present locality, in some place where land costs less.

Percentages based on conditions in 1890, 1900, and 1910, show that on the whole there is a decided increase in the proportion of tenants among the farmers in the counties visited. A number of facts may be cited in partial explanation of this tendency. The average size of the farms operated by tenants varied from 202 acres in the Minnesota area to 489 acres in the North Dakota area. The income from such a farm is sufficient to maintain its owner without much personal labor on his part. He is, therefore, likely to retire and rent his land.

In each of the localities visited there were many tenants who own some land, in most cases situated where land prices are lower than where the tenant lives. Tenants who bought in their present localities completed their purchase in an average time of 5.5 years in Minnesota to 9.9 years in Nebraska after they started renting.

Under the one-third share system the landlord receives one-third of the grain, usually delivered from the threshing machine, but sometimes temporarily stored in bins on the farm. He furnishes land, dwelling, barns, and usually all other farm structures, fences, material for repairs, and skilled help for making repairs, when necessary; grass seed when sown; usually he pays the real estate and road tax. The tenant furnishes the labor, work stock, machinery and tools, grain seed, and pays for twine and expenses of threshing.

When the tenant gives half the crop as rent, the landlord in addition to what he furnishes under the one-third share system, furnishes all the grain, pays half the threshing machine bill, and sometimes pays for half the twine and receives half the small grain delivered at the elevators. The tenant's obligations under this system differ from those under which he gives one-third only in regard to the supply of grain seed and to the threshing and twine bills. Where the land is rented for half the wheat, corn land, and sometimes land for other grain, is farmed for one-third of the crop delivered.

If the landlord receives two-fifths of the crop, both landlord and tenant contribute to expenses in the same proportion as under the system in which the farmer receives one-third, although instead of getting one-third of the crop delivered he gets two-fifths of it delivered. None of the farms in North or South Dakota are rented under this system. Only one exception was found to the custom of delivering the landlord's grain where the landlord received two-fifths share.

When the crops and stock are divided equally between landlord and tenant the landlord, in addition to what he contributes under the system in which he receives one-third, owns half the productive stock, except poultry, and bears half the general farm expenses, except those for labor and repairs to machinery. The tenant supplies all the labor, owns all the work stock, farm machinery, keeps the machinery in repair, and owns half the productive stock. Under this system each of the contracting parties gets one-half of all farm sales except those from poultry or work stock, all of which go to the tenant.

When farms are rented for a share of crops and stock, the lease provides whether the tenant's work stock may or may not be fed from the grain and hay owned in common and fed to other stock. No exceptions were found to the method as outlined here.

Under the renting system according to which the landlord received two-thirds of the crops and which was found only on a few Kansas farms, the landlord furnishes everything but the man power, that being the tenant's contribution. Under this system the tenant receives one-third of the grain only, while the landlord receives two-thirds of the proceeds from the sales of grain and of proceeds from the sale of stock.

A few of the farms in each locality, excepting the North Dakota area, were found to be renting for cash. On cash rented farms with considerable alfalfa the tenants were satisfied, but on farms without this crop they intended to give up their leases.

In general, under all of the six systems of renting described above, the landlord furnishes land, buildings and grass seed, and pays the real estate tax. He also supplies material for the repair of buildings and fences, and usually employs any skilled labor needed for making repairs. In all of these localities, however, land was frequently rented without buildings, and on some of the Nebraska farms visited the tenant owned all of the farm structures and fences except the dwelling, the barn, and the windmill. On the other rented farms visited in Nebraska the tenant sometimes paid a part or all of the real estate tax.

Under all of these share-rent systems except the one according to which both stock and crop receipts are divided and the landlord gets two-thirds of the crop, all productive stock is owned by the tenant, who gets all the income derived therefrom. However, the amount of such stock is too frequently limited by his acreage of pasture and hay land, by the amount of corn or rough feed he is allowed to grow, and by the shelter that is provided for such stock.

On the share-rented farms the use of hay land was usually paid for in cash but was sometimes given free to the tenant. Frequently it was rented for a share of the crop, and in some cases there was no hayland on the farm. Pasture was sometimes free to the tenant, but in many cases was paid for in cash. Sometimes the farm pasture was used in common by both landlord and tenant, and in other cases there was no pasture.

In the Kansas area the average distance from the market to the farms visited was 4.5 miles; in the Nebraska area 3.6 miles; in the South Dakota area 4.4 miles; in the North Dakota area 5 miles, and in the Minnesota area 5.6 miles. Very few farms were more than 9 miles from the market. The share of the crop given in no case appears to differ on account of the distance to market, except that the average distance to market of the farms renting for two-fifths share is less than the average distance of those renting for one-third share.

Farmers Must Help State Agricultural College

COLORADO INSTITUTION BADLY CRIPPLED BY LACK OF FUNDS

COLORADO Agricultural College is helping to develop the state. A little more than 25 years ago, Colorado's agricultural output was almost negligible. Today the annual value of the farm output of crops, livestock and livestock products, is more than four times as great as that of its mines and quarries.

The Agricultural College has grown with this development. In 1908 the Agricultural College had 219 students. The present year just closed the student attendance has risen to 1912, an increase of 773 per cent. Since 1915, the student body has increased from 1,098 to 1,912, or an increase of 71.4 per cent in five years. The increase in student attendance reflects the usefulness to the state.

The college is growing faster than its income. In five years student attendance has increased over 70 per cent. In 1919, although the number of teachers had increased 33 1-3 per cent, the total salaries paid to teachers had increased only 27.8 per cent. The big increase in operating expenses of the institution has come in supplies and material and not in salaries. In 1915 the coal cost the institution $3,697.65. In 1919 the cost of coal had risen to $8,839.64, or an increase of 139 per cent. This increase in coal was roughly due to 100 per cent increase in the price of coal and 40 per cent increase in price of freight and a slight increase in the number of buildings. Other materials which the institution has to buy have risen in proportion. From 1913 to 1919 food products increased on an average of 226 per cent. The state increased its support during this period only in about the same proportion as the increase in the student body. But, owing to the high cost of materials, the increased support has not kept pace with the growth of the institution. The institution, in other words, is buying its materials at the present time with a 40-cent dollar.

The Agricultural College has kept out of debt. To keep out of debt, however, it has been necessary to sacrifice many things. Almost no new laboratory equipment has been purchased in the last six years. The college has kept out of debt by reducing the efficiency of its laboratories. But it has paid its bills as it has gone along. Student attendance has increased. It has cost more to buy coal, light and power. It has cost more for all supplies. The college has kept out of debt by reducing its purchase of supplies to the minimum and going without needed laboratory material. It has kept out of debt by crowding its class rooms to the detriment of the best instruction, by getting along with too few assistants, by paying lower salaries than other state institutions or institutions of equal rank in neighboring states.

The Agricultural College renders service to the state. It is only by rendering service that the college justifies its existence. The college is here for the use of the state and not for the convenience of the college. With this idea in mind, the college has felt that it should receive students who came to it, that it should, so far as its means permit, do useful state work.

But the Agricultural College has reached a crisis. With present finances it can carry its present work until June, 1921, after which, if more money is not available, the college will be under the necessity of doing one of three things —limiting the student body, reducing salaries, or discontinuing some of the present departments. To limit the student body would not be in accordance with the policy of the institution nor of a democratic state. Every Colorado student who wants the training offered by the Colorado Agricultural College should be entitled to it. Salaries should be raised, not lowered, in order to maintain and improve the standards of teaching and state service. Other states are paying higher salaries. To reduce salaries further would mean the loss of many men who have spent years getting experience under Colorado conditions. Colorado needs more and better men in its Agricultural College. A state is developed through its men. We do not want poorer men, we want better. To reduce departments would lower the efficiency of the institution and would make it less helpful to the state than at present.

Many new lines of work are needed. The agricultural interests of the state are calling for all of the old lines of work and many new ones. The Agricultural College has delivered good service in the old lines. Consequently, agricultural development wants that service extended to new fields, such as markets and agricultural economics.

To maintain the existing work on its present basis of efficiency requires more money. To maintain the present work on a better basis of efficiency requires still more support because of increased costs and increased student attendance. To start new lines of work is an impossibility without discontinuing many of the old lines. The state wants new lines of work. It wants the old lines to continue. The state wants to support these activities. It must have a means of supplying that support.

The Agricultural College carries many lines of work besides its campus teaching. In 1919, through its Extension Department, the number of people reached by the college amounted to approximately 109,000.

The boundaries of Colorado mark the limits of the college campus. The college must not only keep pace with development, it must lead development in the agriculture of Colorado—Colorado's greatest industry.

The present constitutional levy is nearly exhausted. While the legislature has always been generous in helping develop Colorado by developing its institutions of higher education, it is limited by the constitution to a very low rate of taxation—four mills on the dollar. The legislature has done what it could, but it has not done enough. It was limited by the constitution. Colorado only spends 97 cents per capita on its institutions of higher learning—the lowest of any of the adjoining states. Arizona spends $1.51 per capita; Kansas, $1.31; South Dakota, $1.12.

The remedy. The remedy for the present situation is to pass the Educational Amendment. This would permit the legislature to finance the institutions from time to time, as in its judgment the needs of the institutions require. The Education Amendment to Section 11 of Article X of the constitution reads as follows:

"Section 11. The rate of taxation on property, for state purposes, shall never exceed four mills on each dollar of valuation: Provided, however, that in the discretion of the General Assembly an additional levy of not to exceed one mill on each dollar of valuation may from time to time be authorized for the erection of additional buildings at, and for the use, benfit, maintenance, and support of the State Educational Institutions; Provided, further, that the rate of taxation on property for all state purposes, including the additional levy herein provided for, shall never exceed five mills on each dollar of valuation, unless otherwise provided in the constitution."

It must be borne in mind that this amendment does not create a dollar of tax. The amendment simply provides a means under which the legislature can constitutionally act. It removes the restrictions from the legislature. The institutions must go to the legislature and justify their needs. If the amendment passes, it will be possible for the legislature to develop Colorado by developing its institutions of higher learning. Vote for the Educational Amendment, which will permit the legislature to develop the agricultural educational service according to the state's needs.

The Heart of Virginia Keep

· BY EDWIN BAIRD ~ COPYRIGHT ·

CHAPTER I.

Fifteen Minutes Flat.

THE woman's voice rose to a scream. "You sell my husband another drink and I'll wring your neck for you! Maybe you think I can't do it—ha? Just wait! I got yer measure, you rat! You rob a hard-workin' woman of all she's got and then send her husband home to thrash 'er. Try it just once more on me—just once—and I'll learn you some'in'——"

The stout potman, polishing glasses behind the St. Louis bar, went imperturbably about his employment, glancing at the angry woman from time to time in a disinterested sort of way. He had the air of one who is very much bored.

Three other men lounging about the saloon watched her curiously. At the height of her fury, a side door opened and Otto Kraus, the proprietor, entered. As he closed the door behind him a church clock in the neighborhood began tolling ten. Kraus paused a moment, surveying the woman; then walked unsteadily towards her, his thick thumbs in his lower vest-pockets.

"Vhat's der row, Gus?"

Though he spoke to his potman, he looked at her. An ugly scowl disfigured his face. Also, his sagging under-lip, his heavy, dull eyes, and his loud, wheezy breathing indicated that he had been drinking deeply.

The woman wheeled upon him violently.

"You!" she blazed. "You hound! You scum! You—you German rat——"

He broke in roughly.

"Gedt from oudt! Undt qvick aboudt idt!" he warned, doubling his fists. "I don't gif a cuss for you, nor your husband needer!"

She showed no intention of complying. He seized her arm in a sudden grip that made her cry out shrilly.

At this juncture one of the three hangers-on took part in the argument. He was evidently a workman of the unskilled sort, being dressed in a suit of shoddy grade, a flannel shirt, cheap shoes, and a cracked derby hat spattered with mortar. There was a certain distinction in his features, however, which set him apart from his companions. He was a young man—probably not more than twenty-six—with black hair and eyes, a cleft chin, and a rugged jaw. His eyebrows were uncommonly heavy; they nearly met at the apex of his nose.

Of only average build and height, there was yet a suggestion of abnormal strength, an iron endurance; and, notwithstanding his facial marks of dissipation, his broad forehead and deep, calm eyes denoted an intellect of no mean order. His strength and endurance were in fine trim because of daily use; his intellect, no doubt, was dulled by long neglect.

He walked over—closed his strong fingers around Kraus's arm.

"Don't hurt that woman," he said quietly.

The saloon-keeper glared at him over his shoulder.

"Ach! Go chase y'self!"

The strong fingers tightened.

"No man's going to hit a woman and get away with it while I'm around."

"No? Vell, whatcher know about dis?"

Taking a firmer hold on his victim, who was fighting like an infuriated cat, Kraus drew back his bulbous fist and would have struck her squarely in the face had not a blow caught him beneath his jaw that broke his hold and sent him reeling dizzily. He fell heavily against a table, upset it, and crashed to the floor.

No immediate commotion ensued. Indeed, for an instant there was a deadly silence. Then a Greek, named Gorkos, who had been hovering near with a view to aiding his friend Kraus, attacked the assailant from behind, and a fracass was the outcome. But the third patron—a one-eyed youth with a weak chin and a sensual mouth—and the barman took no hand in the combat, though both were watching matters with sharp interest.

Kraus struggled to his feet, his face mottled purplish-red. Without a word, he staggered behind the bar, took a revolver from a drawer, and returned to where his adversary and ally were struggling. The woman's young champion, holding off Gorkos with his powerful right arm, seized Kraus' revolver-hand and flung it upward, rigid as steel. The Greek closed with him, and the three went struggling violently about the room, swearing, clawing, spitting vile names, upsetting chairs and fighting savagely in a catch-as-catch-can confusion.

Once Gorkos had the weapon; but the younger man, as quick as he, snatched the handle as Gorkos seized the barrel. There was a brief scuffle for its possession, then a loud report, which in the walled place burst like a cannon-shot; and the saloon-keeper with scarcely a gasp, crumpled unnaturally against the foot rail of the bar, a blackened cavity in his neck.

Almost at the same moment a blue-eyed, flaxenhaired girl of perhaps fifteen came clattering down a stairway near the lunch-counter and stopped, dumbfounded, staring aghast at the man on the floor, her childish mouth distended, her eyes round with horror.

Like a person dazed, the young man stood over the fallen one, the smoking revolver in his hand. A sharp cry of warning from the one-eyed youth caused him to turn swiftly, though too late. He threw up his left elbow as Gorkos lunged for him with a knife, but a poignant pain, burning as molten metal, darted through his forearm, and he knew the blade had been buried there.

Then seemingly he became maddened with blood-thirsty lust. He sprang after the Greek, who had turned to flee, caught him as he reached the front door, rammed the muzzle of the revolver against his side, and pulled the trigger thrice. Gorkos twisted half-way around, swayed uncertainly a second, and sank sickeningly to his knees.

The little girl, who had seen all, broke her shackles of dumb terror and fled, screaming, up the stairway.

The air hung thick with the pungent odor of burned gunpowder. A drab-colored cat lazily chewed a piece of sausage behind the lunch counter. From an overturned beer bottle on a table a thin stream widened and trickled to the floor.

The young man returned, laid the revolver on the bar, and asked for a drink of whisky, passing his hand before his eyes as if his vision were befogged. The barman, breathing heavily, placed a bottle and a glass before him. The woman and the one-eyed youth, who had crouched against the wall throughout the affray, gazed at him with a sort of awestruck fascination as he stood quietly at the bar, one foot resting carelessly on the foot rail, drinking whisky and knotting a handkerchief above his left elbow.

Feeling a touch on his shoulder, he looked around, wiping his mouth with the back of his right hand, and found the barman standing behind him. The man's face was the color of raw dough.

"You done 'em both in! You croaked 'em both!"

A door at the rear opened, then shut.

For the first time the slayer seemed to recognize his position. Tightening the knotted handkerchief as he ran, he made frantically towards the front door. Before he reached it the one-eyed youth faltered after him, paused, then started on again, calling tremulously:

"Oh, Alf! Alf!"

But the fugitive gave no sign that he heard. He flung the door open and banged it behind him.

An empty furniture van rumbled down the street, thunderously splitting the still night. He sped after it, caught it, and with his good right arm swung himself up behind. As he crawled in among a heap of rags and matting he heard the clock on the church strike the quarter-hour. It was fifteen minutes past ten.

Meet the Author of "Virginia Keep."

Edwin Baird.

THE editor told you in the last issue about the very interesting letter he received from Mr. Edwin Baird, author of "The Heart of Virginia Keep, the opening chapters of which appear in the present issue. I assured you then that you would like the story and would appreciate getting better acquainted with the author, so here goes another quotation from his very warm-hearted and human letter: "Right now (this was written in the spring) I am buried to my eyebrows in garden activities, putting out tomato plants, cultivating corn, beans, peas and onions, to say nothing of the strawberry bed and the raspberry bushes, and trying to raise four broods of baby chicks. All of which is exceedingly fascinating to me and supplies me with an idea of the joys that await me when I finally own a farm. To my way of thinking, the farmer's life is as nearly ideal as any life can be."

We instinctively like a man who writes in that appreciative way about growing things. He has a love for the soil and we wish him well in his desire to become a real farmer. It will not take many books like "The Heart of Virginia Keep" and "The City of Purple Dreams" to bring him to a realization of his great ambition. And yet we don't want a good author and an entertaining story teller spoiled by making a farmer of him, because we all know that farming requires hard, manual labor, which leaves us little leisure for exercising the gift of writing. So let our hope for Mr. Baird be that his royalties from copyrighted books reach such a figure that he can buy one of our big western ranches and come out here and live with us, enjoy all the advantages of the free outdoor life and let the cares of management rest on the "help."

Four novels, six or seven novelettes and dozens and dozens of short fiction stories have been written and published by Mr. Baird. And he finds time to "sit in" at a desk on one of the big Chicago dailies and do a day's work as a sub-editor. With this introduction of the author and his portrait (which is a good one by the Chambers Studio, Chicago), we shall leave our readers to enjoy "The Heart of Virginia Keep."

CHAPTER II.

Twenty-five Years After.

"I wonder," mused Virginia Keep, "why I ever promised to marry you."

Grant Mattock, sitting beside her on the library divan, smiled in his odd, serious way.

"Because," said he, "you love me."

She shook her head slowly, at the same time lowering her dark eyes, and slightly curling her lips.

"I don't—love you."

"You will," he declared. "I'll make you."

She reclined lazily among the silk and leather cushions at her end of the divan and regarded him, half playfully, half in earnest.

"Millions of men," she observed, "have said that to millions of women."

"And millions of women," he rejoined, "have thought it of millions of men."

"But the women succeed!" she triumphed.

Mattock bowed. A lean and wiry man of thirty, whose face was purposeful rather than shrewd, his most striking attribute was his eyes, which were of a peculiar slate color that somehow suggested a latent cruelty. Now, however, as they rested upon the fresh, white beauty of the girl beside him and drank in her virginal loveliness, in the flower of youthful purity, a light shone in their hard grey depths which manifested what passed with him for love.

He leaned towards her.

"Virginia," he said, and his voice, though tender, was serious, "I believe so powerfully in my love that I think I could make you care, even if in the beginning you hated me."

"Well, anyway," she decided, plainly amused by his ponderous sentiment, "we haven't announced it yet, so if worse comes to worst we can call everything off without making a mess."

Mattock drew back, visibly annoyed.

"I wish you wouldn't say things like that," he objected, with perhaps a slight stiffening of his wiry body.

Virginia laughed softly. One concealed from her within hearing distance might have said it was the laughter of a happy child. Her voice had a warm, golden quality which nothing brought out so richly as merriment.

"Now, I've ruffled your dignity, haven't I?"

"No. Only I'd rather you weren't so frivolous about—some things."

She patted his thin hands with mock tenderness.

"There, there!" she cooed. "I won't do it again. I promise. Stay where you are, and I'll play something for you."

She rose and crossed the library, her slim young body swinging with a freedom that implied a life spent more in the open than in drawing-rooms.

When presently the opening bars of the "Flower Song" from "Faust" floated through the tapestried doorway dividing the music-room and library, Mattock moved quietly to a seat where he might watch her unobserved. The music-room was the largest chamber in Alfred Keep's house, having been built to contain a pipe organ. Within its mammoth depths the small, girlish figure at the grand piano was all but swallowed up. Against her snowy evening gown her black hair seemed a dusky shadow, and the clean outline of cheek, throat, and bare white shoulder, silhouetted by the purple recesses, but heightened the cameo.

Mattock, contemplating her, experienced one of the rare vagaries which strangely gambolled beneath his unemotional reticence. He thought her all soul, all spirit, a vestal far removed from anything material; and as he watched her fingers—which were long, slim, and beautifully fashioned—ripple over the keys, he likened them to snowflakes fluttering in the dark. He was very well pleased with both conceits, but not for the price of an empire would he have shared them with another.

The strains of the "Flower Song"

(Turn to Page 23).

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Support for State Fair.

The Colorado State Fair deserves better treatment from the legislature. Colorado has taken high rank as an agricultural and livestock state in the last eight or ten years. Our county fairs have been developed to keep pace with the growing importance of agriculture, but the state fair lags behind. The fair commissioners are doing their utmost with the means at hand to give agriculture an exposition that is worthy of the industry's primacy. But these efforts are hampered by lack of suitable buildings and equipment. This year's fair is in progress as these lines are being written and attendance reports are encouraging while the exhibits are greater in number and better in quality than ever before. But in spite of all this—in fact, because of its growth—there must be more and better buildings. It is time the ramshackle frame structures were torn down and replaced by permanent buildings of ornamental design and convenient arrangement.

Colorado is a leader as a breeding ground for beef and dairy cattle. In hogs, too, our breeders are showing with the best blood from the corn belt and winning their share of the premiums. In agricultural production we are unique. We are the largest sugar beet producing state in the Union; we are doing things in corn production at high altitudes that are attracting national attention; we are developing the giant sunflower for silage; we are supreme for quality in potatoes; we rank with the best in cantaloupes; our fruit is a nationally famous product. And yet our state fair is in the second or third class when compared to other state expositions. The sum contributed by the state toward the fair is trifling when compared to what other states are doing.

Take Iowa, for example: The state fair buildings alone are appraised at $687,764 exclusive of a $200,000 cattle barn built this year. The total assets of the Iowa fair are estimated at $2,500,000. Since 1885 when the fair was permanently located at Des Moines, the state has spent over half a million dollars in improvements alone. The land on which these buildings are located is valued at $582,000. With equipment of this size and value, Iowa' agriculture finds the state fair a suitable and adequate medium for display and the attendance is in accordance with the importance of the fair. The total attendance for fair week this fall was 380,000. The total receipts this year were $400,000, and the net profits $80,000.

Colorado cannot hope to compete with Iowa, but we can at least have a fair that is more in keeping with our agricultural development than the present institution at Pueblo. The farmers of the state should demand from the coming session of the legislature proper consideration of state fair needs.

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Proof From France.

Devastated France is now a fertile agricultural country, rich with red clover and alfalfa. German shells did the plowing and German poison-gas fertilized the soil. The great need of France today is labor-saving devices which can be wielded by the old men and boys who are the only farmers left. This report, brought back from France by Hugh Fullerton, of the Long Island Agricultural Experiment Station, on behalf of the American Committee for Devastated France, is printed in the New York Tribune. Mr. Fullerton discussed the needs of France at a meeting at the headquarters of the committee. He said:

"The French agriculturists believed that the devastated areas would never again be productive. I went over two months ago convinced that this was not true, because I had had experience in tearing up Long Island soil with dynamite and had found the subsoil fertile. It is an old axiom of agriculture that the subsoil cannot be productive, and the French government acting on this premise, had condemned large portions of what used to be the most productive areas of France. In company with Miss Morgan and representatives of the French government, I visited one of the worst bits of the Aisne war zone. It was Red Monkey Plateau, which was taken and retaken eighteen times. Not a trace of cellar wall remains to tell of its villages, and the soil was overturned to the depth of two to five feet. At the foot of the hill the French experts were still maintaining that nothing would grow there. When we reached the top we found ourselves wading knee-deep through the richest red clover I have ever seen. The leaves were as big as silver dollars. Alfalfa covered the deepest holes. I will say this for the French: They were prompt to admit their error. Within two days the order condemning this territory was revoked. Four thousand people returned to their old homes in one day. It appears that the plowing done by the shells brought to the surface the deep soil which contains valuable materials of which the top soil, used for generations, had been depleted. Riding through France, one can trace the lines of the trenches, now filled in and planted, by the richer, darker green of the wheat growing in the deep-plowed soil."—Literary Digest.

We have been waiting for some time for this verdict from the trenches of France. Of course, it was a foregone conclusion and the wonderful results obtained on such an enormous area leaves the opponents of deep work in agriculture not a leg to stand upon.

In this matter of dynamiting and subsoiling the French Department of Agriculture have acknowledged that their old ideas about it were wrong, and now would be a good time for some of the western representatives of our own Department of Agriculture to retire gracefully from an untenable position. —E. R. Parsons.

✦ ✦ ✦

The A. F. B. F. and Politics.

Digests of both the Democratic and the Republican platforms showing comparisons with the fourteen planks presented by the American Farm Bureau Federation at both conventions, were sent out from the offices of the Federation recently to the state farm bureau headquarters located in each state. Accompanying this digest is a brief of the principal bills in which agricultural interests will center their attention during the coming session of Congress.

Each state farm bureau is appointing delegations to confer with all senators and congressmen and ascertain their positions with respect to the various items of legislation desired. Those that are up for re-election this fall will be interviewed with particular care, but all will be put definitely on record.

Both parties have promised agriculture adequate support on practicallly every principle involved. Every agricultural plank presented by the American Farm Bureau Federation is included in both platforms and since confirmed by both the acceptance and the campaign speeches of both Senator Harding and Governor Cox. The Federation now proposes to make certain that all candidates and supporters of both parties fully understand the nature of all promises made and take the necessary steps to place themselves in position to fulfill these promises through legislative action.

Some of the important bills on which candidates will be asked to definitely commit themselves are:

The Capper-Volstead bill, legalizing collective marketing by agricultural producers' organizations.

The Nolan bill, imposing an additional tax on land.

The Truth-in-Fabrics bill, requiring manufacturers to honestly label their fabrics so as to show the percentages of wool and the percentages of shoddy used.

The Kenyon-Anderson bill, to control the meat packers.

A German credit bill, providing a credit for Germany against the net proceeds of the Alien Property Custodian's sales, the money to be used in purchasing raw materials such as wool and cotton in this country.

The Kahn-Wadsworth bill, authorizing the government to operate the air fixation nitrate plant at Mussel Shoals, Ala., for the production of nitrate for fertilizer.

Farm financing measures, including the strengthening of the Federal Farm Loan act, the amendment of the Federal Reserve act and the enactment of a Rural Credits bill.

In addition to these bills already definitely drawn, a number of other measures involving tax revision, tariff policies, conservation and utilization of our water power and forest resources, the improvement of highways and adequate financial support for the highly important activities of the Department of Agriculture, will also be subjects on which the attitude of the prospective members of the Congress will be asked to express themselves before election.

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County Show Herds.

Our State Fair could be strengthened very materially by a classification for county show herds. Many of our counties have breeders' associations. There is nothing that would assist them more in their advertising than to exhibit their association stock in a county show herd selected from the best in each herd. Let us take for an example the various Shorthorn associations in the state. We have the Elbert county, Morgan county, Saguache county, Rio Grande county and several other associations of these breeders. If they would select a herd from their various breeders taking in their best animals and show them as a herd and also in the individual competition, it would add a great deal of interest to their showing, establish a cooperative spirit and offer an opportunity for them to advertise their stock as no other method would. All breeds could be handled in the same way. This plan is now being followed by states on certain breeds at national shows. It has a wonderful effect in establishing a name for a particular section.

Not every breeder feels that he can afford to go to the expense of showing his herd as an individual. However, he may have one or two outstanding animals that he could show where a herd to represent the county is gotten up. The premiums on the individual animals should go to the owner, while on the herd, if shown as an association herd, it should go to the association. This plan is worth thinking about.—H. A. L.

✦ ✦ ✦

What Breeders Should Know.

In these days of salesmanship every breeder is his own salesman. As such he often overlooks the value of a thorough knowledge of the leading families and animals of his breed. As a result he fails often to make a sale to a prospective purchaser. Every fancier has his favorite strain which may be different from what another breeder wants. In selling an animal one should have all the leading strains in mind represented in the particular animal so that he can recite them accurately. Aside from this he should know the good and bad points in conformation of his breed. This requires careful study of pedigrees and types. Time spent in this study is what makes our livestock breeders successful in selling their breeding stock.—H. A. L.

Farm Loan Information.

Kindly send me the address of a Land Bank where I can borrow money to improve my place.—A. H. W., Arizona.

The Federal Land Bank in Berkeley, Cal., has charge of loans in Arizona. You can get information by addressing them. At present no loans are being made, the system being tied up in the Supreme Court as stated in the article which appeared in our issue of July 15. However, by writing to the bank at Berkeley you will be able to obtain information and be prepared to make application when the banks resume business.

The Branding Iron

Diner: "What on earth is this broth made from, waiter? Surely it isn't chicken-broth?"

Waiter: "Well, sir, it's chicken-broth in its infancy. It's made out of the water the eggs were boiled in.—Tit-Bits.

* * *

Mrs. Ess: "My husband goes out every evening for a little constitutional. Does yours?"

Mrs. Tee: "No, he has quite a stock on hand at home."—Utica Globe.

* * *

Climatological Note.

Mr. Hale, county agriculturist, and Miss Snow, home demonstration agent, were introduced to the crowd assembled at Ellicott at the fair by the chairman. They made a favorable impression on the people attending from Calhan and voiced the expressions of pleasure by those lucky enough to be there in as few and appropriate words as possible. We say, here's hoping that it not only "Snows" and "Hales" but that they may reign for years to come around Calhan. —Calhan Notes in El Paso County Democrat.

To this The Democrat adds editorially: "Does our county, with Hale for an agent and Snow for home demonstration work, propose to defy the elements? We hope both may dew well and that their reign may be long."

* * *

This season's crop of weeds was fully up to normal. Isn't it funny that we always have a bumper crop of weeds when we give them the least attention?

* * *

Horticultural.

A teacher in an Englewood school asked the other day: "How many kinds of flowers are there?"

Three pupils held up their hands. She chose one to reply.

"Well, Isidore, how many kinds of flowers are there?"

"Three, teacher."

"Indeed? And what are they?"

"Wild, tame and collie."—Philadelphia Lutheran.

* * *

Brown: "That new cook of ours makes everything out of the cook book."

Derby: "Then that must have been one of the covers I tasted in the pie last night."—Cornell Widow.

* * *

She: "Tell me truly why you gave up drink."

He: "Well, dear, the last time your mother was here, I came home late and saw three of her. The shock cured me." —Detroit News.

* * *

Poor Finance.

A famous financier was taken seriously ill at the age of ninety, and felt that his end was near.

"Nonsense!" said the doctor. "The Lord isn't going to take you till you've passed the hundred mark."

"No, my friend," said the aged banker, "that wouldn't be good finance. Why should the Lord wait until I reached par, when he can pick me up at ninety." —Argonaut.

* * *

A Black and White Quarrel.

Two colored men in a quarrel expressed themselves thus:

Rastus: "Look here, you big stick of licorice, you big ton of coal, you big ace of spades, don't you look at me again."

Mose: "Look here, brother, you ain't no barrel of flour, no bottle of milk, and no snow bank, either."

* * *

Evidently Not.

Bess: "Somebody passed a counterfeit dime on Bob a year ago and he hasn't been able to get rid of it since."

Maiden Aunt (horrified): "What! Does that young man never go to church, then?"—St. Paul Dispatch.

Forming New County.

What are the requirements for forming a new county as regards population, area, taxpayers, etc.? Would it be possible to form a new county out of a part of two old counties and just what steps would have to be taken to accomplish this?—R. H. B., Montezuma county, Colo.

County boundaries are in charge of the legislature. You will have to get the matter through the legislature, and the matters you speak of are in the discretion of the legislature. Parts of counties may be stricken off and added to adjoining counties under the statutes which provide for elections.—Hamlet J. Barry, 724 Equitable Building, Denver, Colo.

Comment by Farmer Putnam

OUR MISSOURI FRIEND HAS THE USUAL GOOD TIME AT THE LOGAN COUNTY FAIR IN STERLING

I was to the Logan county fair and I seen what a good farmin' community could do in the way of exhibits which was composed of a ferris wheel, a fortune tellin' tent, several hot dog stands, cane throwin' and ball throwin' attractions, the Christian church and the Epworth League tents, a wild west show, some livestock and farm produce exhibits, runnin' races and the like. The Sterling band was on deck with some fine musick. I got acquainted with the saxaphone player. I told him about my nephew playin' the saxaphone in the Rosendale, Mo., band and he sez he was glad to meet me, because he liked fur people to be interested in music. I told him I was and that I could play the juice harp and the mouth organ and used to could fiddle a little.

He sez: "You don't look like a artist," and I told him looks was deceivin'; that all my folks could play some instrument and some of 'em could read notes and others could play just by ear. I asked him if he played by ear and he sez no, he plays only by mouth, because no wind instrument could be played any other way.

While I was follerin' the band around Mr. Morrison, the county agent, sez: "Farmer Putnam why don't you come in and see them agricultural exhibits?" I told him I'd leave the editor to do that because my work was to write up them outside attractions; I kin see all the crops that I want to at home and when I go to a fair I go to be entertained. I started right in with the first tent which was run by Madam La-somebody the fortune teller, who reads your life from the cradle to the grave. (No, Josephine wasn't along.) I sez: "Mrs. La, I don't believe in fortune tellin'; I'm a septick when it comes to them kind of things; you got to show me. Now, who do you reckon I am, where I am from and where I am goin' to."

Right off the reel she sez: "You're name is Farmer Putnam; you're from Missouri and if you don't change your ways you'll go to hell. One dollar please."

"Here's your dollar," I sez, "but don't you say nuthin' more, because that's all the money I got to spend fur foolishness."

She was lookin' at the lines in my hand and she shook her head and sez: "You are a leader of men; you are amiable and kind of disposition; you love musick and art and good books; you like to take a gambler's chance." (Gosh she must-a knowed I was married.) "A dark man will cross your path soon; look out for him. For fifty cents more I will give you a complete reading."

I jerked my hand away and run and before train time that evenin' I was a-settin' in a pool hall in town and a darkey was brushin' my shoes when it all come back to me, " a dark man will cross your path," and before I knowed it he worked me out of 15 cents fur a shine and 10 cents fur brushin' my clothes. How do you-all reckon that fortune teller could-a knowed all that?

Well I went on from one tent to the other tryin' out all the games and by dinner time I was good and hungry and I went up to the Epworth League booth to git a hamburger and some coffee. I sez to the young lady:

"I didn't know Sterling played in the Epworth League; I reckon the money fur them lunches goes to buy uniforms fur the team?"

She turned her back to me and sez to a lady: "Maw, listen to this funny man; he thinks the Epworth League is a ball team!"

"Oh what a heathen," the old lady sez, lookin' at me like she knowed the future the fortune teller said I'd come to.

"Ain't it a baseball league?" sez I, "and don't the Epworth, Nebraska, team play in it?"

"What dreadful ignorance about religion," sez the old lady. "No this is the Methodist young people's society and we're a-raisin' this money fur to buy a piany fur the church. Our new pastor is comin' next week; you know the conference was held in Denver this week."

"You're mistaken," sez I, "about the conference; it was three weeks ago. I was right thar and I seen Mr. Howard and Mr. Strivings and all them big Farm Burro men right with my own eyes."

The old lady turned to her daughter and sez: "May, don't charge the gentleman fur his lunch; he seems to be kind-a childish. His wife ought to be lookin' after him. I told them fair directors they hadn't ought to allow the sellin' of near beer on the grounds. This poor old man don't know what he's sayin'. Mister, if you're in town Sunday we'd welcome you to come to our church. Men of your age ought to take up religion and prepare fur the future. Do you care fur any more doughnuts?"

"One more and another cup of that good coffee," sez I tryin' to show the ladies that I liked their cookin'. A woman'll furgit and furgive anything if you tell her she's a good cook and I didn't haye to lie to 'em; them Methodist ladies of Sterling knows how to make good hamburger sandwiches.

The fortune teller was right when she said I'd take a gambler's chance; any man that'll order hamburgers does it at his own risk, but I thought by gittin' mine at the Methodist or at the Christian church booth I would be safer then tryin' them professional hot dog men. At them county fairs they're showin' certified corn seed, pedigreed hogs and cattle, and purebred chickens, but a feller takes his chances on the grub, onlessen he happens to strike them church booths of which the ladies in charge belongs to the sewin' circle or the bible class and they takes this means of raisin' money fur foreign missions—and generally comes out in the hole and the poor missionary has to go hungry or eat coconut soup.

Our county fairs is gittin' so they cain't run 'em without college professors to judge the stock and the farm products. I seen Prof. Kezer and two others from the college, Mr. Burdick and Mr. Chase, all of 'em enjoyin' theirselves to their heart's content with corn, wheat, oats, melons, squashes, beans, alfalfa, potatoes, and other crops to judge. It ain't no fun to judge at one of them fairs like the Logan county and Prof. Kezer was all in when I seen him after he finished the corn. I reckon a feller has to count purty accurit not to miss any kernels in judging which corn has got the most feed per inch of cob surface.

But if it's hard to judge the men's exhibits how'd you like to have the job Miss Douglass and Miss Kennedy has got of judging the wimmin's? Miss Douglass you all know; she's the one over on the household page. I seen her and Miss Kennedy lookin' at glass jars of fruit and vegetables—just look at 'em and say which is to git the blue and which the red ribbon. They must be worse experts then the men judges; that is, more expert in judgin' sight-onseen. Now if I had it to do I'd say use the taster method, cook the vegetables and serve 'em to the judge and let him decide by eatin'.

They got a home demonstration agent in Logan county—Miss Thompson. She does the same kind of work the county agents does, only instead of improvin' the pigs and cattle she gives advice on improvin' the children by preparing the right kind of grub. Her work ain't so important as that of the men but it's got to be done too. The wimmin is gittin' so they demands the same things as the men and times has changed so that we mostly give 'em their rights without quarrelin' over it. I believe in humorin' 'em whenever it ain't too expensive. Them home demonstration agents puts a lot of fancy notions in their heads about water in the house, bath tubs, sinks in the kitchen, hot school lunches, patent cookers, and other luxuries, but I say let 'em meet and discuss modern improvements if it makes 'em happier. When it cames to buyin' them things why then it's up to us men to put our foot down on extravagance; that is, if our foot is the biggest. Now in my family it's different; Josephine has got the size foot that covers the ground and all I kin do is to make suggestions.

I seen some of the wimmin's work at the Logan county fair. Some of 'em is makin' imitation wax figgers of theirselves on which they fit dresses. That teaches 'em economy by makin' their clothes at home, which is a good thing. Water in the house is a good thing when you kin afford it, but they is two sides to that question. Most of the farm wimmin' don't git enough exercise and a short walk to the windmill ain't a-goin' to hurt 'em even in winter. Bath in the house is a luxury fur the rich. A good wood tub costs a coupla dollars and is sanitary; it kin be cleaned out easy and set in the sun to kill the germs and then hung up in the kitchen fur use the next Saturday. I don't believe in buyin' expensive equipment to use only onct a week. Them things kin be overdone, but as I was sayin', let the wimmin meet and talk about 'em; while they're a-doin' that they ain't a gossipin'.

County fairs is a good thing and I like to encourage 'em but I wish they wouldn't all come at onct. I cain't git around to more'n a quarter of 'em, specially when they has so many places to spend your money as they had in Sterling. I left $3.65 on the grounds besides my ticket and all I got to show fur it is the kind words of the fortune teller who sez I'm a leader of men. I'm glad she said men and not wimmin'; I been tryin' to show my authority in leadin' a woman fur the last thirty years or so and she won't lead. The only way I kin git Josephine to do anything is to do like when I cain't git a pig back in the pen—pull it back by the tail in the direction I don't want it to go and it goes forward every time.

Now in closin' my article about the Logan county fair I want to say a fiew words about my friend John Henry Shaw, the editor of the Enterprise, and Mr. Gilbert, who runs the drugstore in Sterling. Them two I used to know at Fort Collins when I was graduatin' from the agricultural college. (Farmer's 2 wks. Short Course, '08.) Mr. Shaw helped make Sterling the good town it is by boostin' fur progressive

(Turn to Page 12.)

IDEAL-Arcola Radiator Boiler Farm Home Heating Outfit

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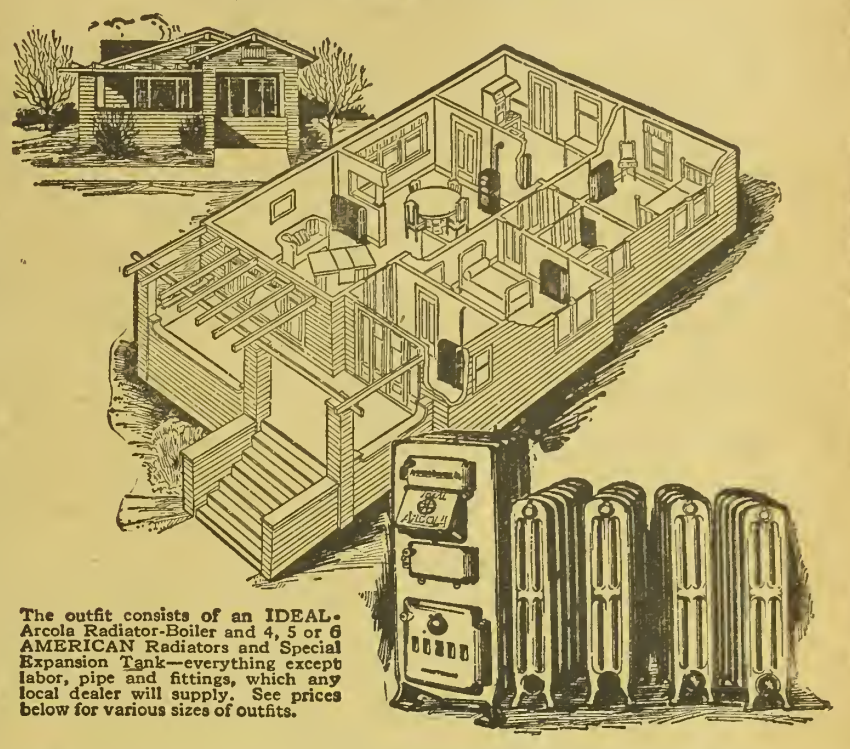

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	" 4-A	" " " 330 " " "	299
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Prices include Expansion Tank and Drain Valve. Prices do not include labor, pipe and fittings used in installation and which are supplied by the local dealer at extra charge. Radiation is of regular 38-in. height 3-column AMERICAN Peerless, in sizes as needed to suit your rooms. Outfits shipped complete f. o. b. our nearest warehouse, at Boston, Providence, Worcester, Springfield (Mass.), Albany, New York, Philadelphia, Harrisburg, Pittsburgh, Baltimore, Washington, Richmond, Buffalo, Cincinnati, Indianapolis, Birmingham, Detroit, Chicago, Milwaukee, Minneapolis, St. Paul, Des Moines, or St. Louis.

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and through the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Preventing Moldy Silage.

Could you give me some advice regarding green mold in silage? It was in good condition after April. Reduced my herd to four milk cows, fed these till the first of June. While the cows did well there was a good percentage of waste in silage on account of green mold, which started to develop around the sides of the silo. Do you think salting silage around the outer edge against the wall would be advisable, or will it hurt its feeding qualities?—V. D. S., Otero County.

Salting silage might prevent mold at edge of silo if it could be done efficiently. However, it would not be practical as it would be next to impossible to get the salt distributed evenly. You should have no trouble from mold forming if the tramping was carefully done, so that all air is excluded. Besides a good tramping next to the edge, would suggest the addition of water to the cut feed at time of filling. This will induce better packing. Keep the middle full when filling, otherwise it will settle in the center and tend to draw the mass away from the walls, making an air space. This will develop spoiled silage.—H. A. L.

Wants Federal Farm Loan.

Please tell me where I can get a federal farm loan on my 44 acres of irrigable land and 45 acres of dry land.—S. V., Adams County.

Just at present no loans are being made by the Federal Land Banks, as the system has been attacked by the American Mortgage Bankers' Association and suit is now pending in the U. S. Supreme Court. However, you should write to Ralph Voorhees, Registrar, Federal Land Bank, Wichita, Kan., asking him to advise you where you can reach the secretary of your nearest loan association. You can take the matter up with the secretary and be prepared to file an application whenever the banks resume. The bank at Wichita serves the Ninth district, of which Colorado is a part.

Filing Never Completed.

In July, 1907, a party filed on a reservoir right for the storing of storm waters in Lincoln county. He made his survey but did nothing to complete the project. This filing was made on land which was subsequently sold and has since come into the hands of one of our subscribers. He wants to know whether the filing made on the reservoir is still good or whether there is a limitation in the law on filings of this kind when the project has not been carried out. Our inquirer wants to build a dam and store water on his place, but not on the same site. His proposed dam is to be built lower down in the draw. Before starting to build he wishes to know whether the man filing in 1907 could cause him any trouble.

The man who filed first, in my opinion, has no rights now. The title to the reservoir site is never completed until the water has actually been put to a beneficial use. Your correspondent may go ahead and the former filing will not interfere with him in any way. —Hamlet J. Barry, 724 Equitable Bldg., Denver.

Property and Heirship Rights.

Answers to G. J., Washington County, Colo.:

1. If a woman owns property before she marries, and dies leaving no children, who inherits her property? Her husband.

2. If she should wish to sell her farm, is it necessary for her husband to sign the deed? No, unless the farm has been "homesteaded."

3. Can her property be sold to pay debts contracted before or after marriage by the husband? No, excepting for necessaries purchased after marriage.

4. Can she make a will leaving her property to others besides her husband, or does he get a share regardless of a will?—Half her property she must leave to her husband. The other half she may dispose of as she sees fit in her will. Of course, during life she may sell regardless of her husband.—Hamlet J. Barry, 724 Equitable Bldg., Denver.

Children Are Part Owners.

I had an abstract brought down to date and it reads: United States to A. A. has five children. A. writes a warranty deed to B. for 80 acres. B. takes possession. Later this land comes back to A. A trust deeded this 80 and redeems it. B. never moves from the place, but asks A. to give him a second warranty deed signed by A.'s children. It gives the name of the five children of which three sign and it states: "This instrument is not signed or acknowledged by ——— or ——— as shown by the record thereof." Have these two children that didn't sign any legal right of this land? Which of the two deeds holds the title?—E. P. A., Boulder County.

If I understand the question, a warranty deed from A. at this time is what is desired and that will be sufficient. If A. is dead and he left his five children as his heirs, then the five children own the property. If three have deeded then the other two own undivided fifths each.—Hamlet J. Barry, 724 Equitable Bldg., Denver.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Spinal Affection Indicated.

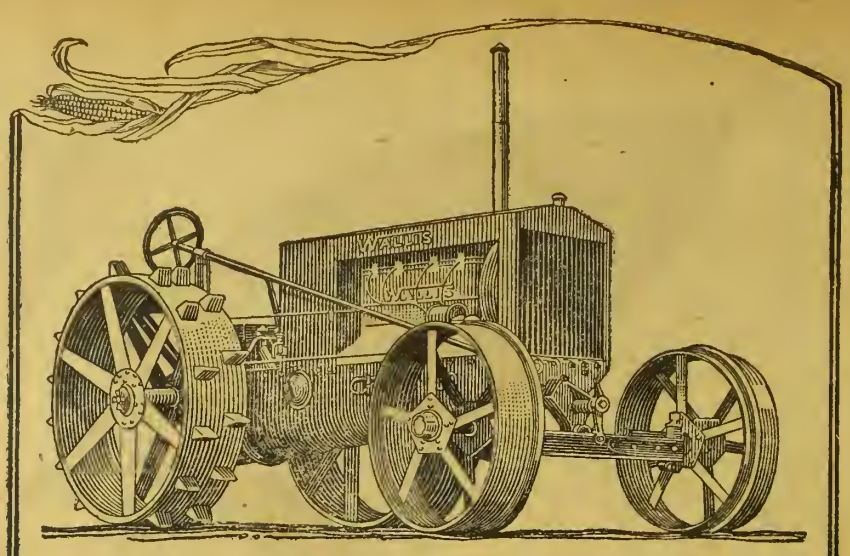
I have a registered Holstein cow that has gotten lame, but we could not locate the lameness. She was tested for tuberculosis when I bought her and again 30 days after I bought her. She is now five years old. She has gotten worse ever since I bought her two years ago. I have called a veterinarian three times and he seems to be puzzled about her ailment. Her feed has been ground oats and corn; one pound to five of milk. Ensilage and alfalfa with some light grass pasture. She lies down most of the time and if I make her get up her hind legs tremble when she starts to walk. Her hind feet turn over forward before she gets straightened out and when standing still she stands mostly on her front feet, by leaning forward with a hump on her back.—S. S. K., Mesa County.

The symptoms given indicate chronic affection of the spinal cord. There are strong indications of tubercular meningitis, although you have reported that she failed to react to tuberculin. Possibly this may be a case of rheumatism, but if so it is most unusual. In either case treatment is practically hopeless, since the disease has progressed steadily for nearly two years. Keep her off the cement and plank floors and discontinue feeding ensilage. She will probably become completely paralyzed and have to be destroyed. Medicinal treatment is not considered worth while since we have no definite knowledge as to the nature of the disease.—G. H. G.

Contagious Foot-Rot.

My cows are all going lame and decreasing their milk. Their feet swell up just above the hoof and it looks as though the hoof is going to fall off. I thought at first it was the foot and mouth disease, but their mouths seem to be all right. It only seems to affect one foot of each animal. There are four out of twenty in my herd affected at the present time. Would you kindly give me some advice on the foot and mouth disease and if you think I have it among my cattle.—H. H. E., Eagle County, Colo.

Foot and mouth disease is a highly contagious and infectious disease of cattle that spreads rapidly, but with ultimate recovery in most cases. It is one of the five great bovine scourges and in the five times that it has appeared in this country its eradication has cost the government many millions of dollars. The symptoms given in this case do not indicate foot and mouth disease. Very likely it is contagious foot-rot, which is caused by the specific germ bacillus necrophorus. This micro-organism also causes "lip and leg disease" of sheep, calf diphtheria, bull nose of hogs, etc. When the yards have become infected the infection is easily passed from the feet of one animal to another, associated always with slight wounds. A careful examination should be made of each of these animals, and this will only be possible by tying them down and securing the legs in such a way that manipulation of the diseased foot will be possible. The wound should be thoroughly cleaned, dead tissue removed, drainage secured and the wound thoroughly disinfected. It not infrequently happens that the feet of cattle become sore from mud that dries between the claws. This may happen with a considerable proportion of the herd and in the absence of any specific infection.—G. H. G.



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Time waits for no man—the farmer knows this better than any one else. If he doesn't get his work done when it should be done, his crop and his profit both suffer. Wallis—AMERICA'S FOREMOST TRACTOR, *removes* this danger.

Because of its powerful light-weight construction the Wallis works steadily where heavier tractors fail. There is no packing of the soil, which makes for the best kind of a seed bed. To gain this desirable light weight the Wallis does not sacrifice one iota of power. Bulk is eliminated by the use of high grade steels and by advanced design. The powerful U-shaped frame (to be found only in the Wallis) is a shining example of rigid strength combined with light weight.

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This is the light for you — the Coleman Quick-Lite, most up-to-date of all home lamps. Gives a brilliant, mellow light of 300 candle power, without glare or flicker. Easy on the eyes. No wicks to trim; no chimneys to wash; no dripping oil; no smoke; no smell.

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Comment by Farmer Putnam.

(Continued from Page 11.)

idees. He sometimes rubs a feller the wrong way in his paper; you cain't put nuthin' over on him, but if he thinks you're on the square he'll be for you. If he don't agree with you he'll tell you so. That's what made Horace Greeley a success as a editor. None of them big editors was soft soapers. Fur Mr. Gilbert I kin only say that I like them marshmeller Sundays he serves at his sody fountain and I ought to collect one next fall fur this here free ad.

I liked the fair and I liked the town, but it needs more hotel room. I had a nice front room in Dr. Smith's chiropractic parlors and the Doc offered to straighten out my backbone free of charge in addition to givin' me the use of the room, but I told him I was a magazine writer and didn't have no backbone.

Thos. Jefferson Putnam

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Keep the "Luck" in Your Shooting Where It Belongs

GAME—especially ducks—is wily, suspicious. It is part of the sport to be patient and cautious. Finding the game is one of the uncertainties which make shooting a pleasure.

This is what some hunters call luck—where the novice enjoys the same opportunities as the more experienced shooter.

There is another kind of uncertainty which used to be called luck, but which is no longer known among hunters who have learned better.

Ordinary shells will frequently swell or broom out when wet. They sometimes refuse to work through your gun at all.

Remington
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In such a case it's a form of "bad luck" which is unnecessary, because Remington development has provided WETPROOF shells that are sure fire even when wet.

WETPROOF shells cost no more than ordinary shells—made in the popular "Nitro Club" and "Arrow" (smokeless powder) and "New Club" (black powder) brands. All Remington shells are WETPROOF.

Asking for a box of "12 gauge No. 4" is taking unnecessary chances—luck. Ask for Remington UMC WETPROOF shells in your favorite load and keep the luck of hunting where it belongs—with the game.

The Remington dealers' stores in your town are known as "Sportsmen's Headquarters"—at the sign of the Red Ball. Each is one of 88,000 local representatives with authority and service as broad as the largest makers of firearms and ammunition—Remington.

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Successor to The Remington Arms Union Metallic Cartridge Company, Inc.

Colorado State Farm Bureau News

Matter appearing in this department relates to the activities of the State and National Farm Bureaus, including official communications from the Colorado State organization and general reports, calculated to keep farmers informed regarding progress of this great educational movement.

What a farmer thinks of the Farm Bureau is aptly told in the following quotations from an address delivered by J. M. Rodgers of Wellington, Colo., president of the Larimer County Farm Bureau, at a convention of county superintendents of schools held recently in Fort Collins. Mr. Rodgers takes up the subject strictly from the farmer viewpoint, and his practical presentation so impressed the superintendents that they asked that the address be published.

What a Farmer Thinks Of the Farm Bureau.

J. M. RODGERS.

Agriculture was the first, is the oldest, the largest, and the most important enterprise in the world. There is more steel used on the farms of the United States every year than on the railroads or in any other industry. The distances separating farmers make their lives more free and independent than those of any other class of people.

All other industries are more or less dependent upon the tastes, wishes, or whims of man for a return for their labors. The agriculturist is dependent solely upon God for a return for his labors. His associations are more direct than those of the people engaged in any other enterprise. The growing grains and grasses, the fruits and flowers, the animals that must receive his daily care and be more or less his daily companions, bring him closer to nature and nature's creator than does the environment of the votaries of any other enterprise.

I believe there is a serious danger that the agricultural products may fall to so low a level that there will be a food shortage. The way to avoid this is to make agriculture not only a profitable enterprise, but it must be a pleasurable enterprise as well. It must be surrounded by those things which attract our young folks from the farms, or better, bring to them a substitute that lacks the sting and retains all the sweet.

No person from the outside has the opportunity of knowing the conditions under which the farmer works and lives so well as the teacher of the country school. The parents, by years of practice, may be able to throw off the home influence and environments to a certain extent and not reveal the true home conditions when they go among their neighbors or to the outside world, but to the keenly observant teacher, the children coming from their homes to be under her daily surveilance bring to her an accurate index of the home life, the moral and intellectual atmosphere, the financial conditions, and even show her the kind and quality of the food served in the various homes. The time is past when a teacher has fulfilled her obligations when he or she has attended to the mental needs of their pupils and has taught them what is laid down in the course of study. Their physical well-being, their habits, their choice of a career, in fact, everything that will in any way affect their success or failure in after years is a part of the teacher's work and must be so considered by the teacher who can call his work full and a success.

You county superintendents have been through the country school teacher period and now, in your official capacity as superintendent, you come in daily contact with your teachers from the various farm communities of your respective counties. In your work of visiting the schools of your counties you have an opportunity to make a more general survey of the agricultural conditions and the conditions surrounding agriculture and the agriculturists of the entire state. You know the home life, you know the pleasures, you know the social atmosphere, you know in a general way the financial status of the farmers of the state, you even know how many of the children of the state come to their daily school work handicapped by under-nourishment, and by your experience, you are able to judge quite accurately how many are under-nourished not from insufficient food, but from food improperly selected or improperly prepared food. So, I feel that it is indeed fortunate that I have an opportunity to present the plan of the Farm Bureau to you at this time, for if you recognize it as a plan that will to a certain extent at least, help to correct the conditions that you know to exist, you will recognize the Farm Bureau as an educational work and there will be no question about your aid in pushing the work.

The Farm Bureau owes its existence to the needs of rural communities; all its problems arise from these needs of rural communities and must be solved by rural betterment. The time is past in this state and in most other states when the Farm Bureau is thought to mean a piece of furniture belonging on the farm. The Farm Bureau has become so well known and its activities so well advertised that most people have at least a vague idea of its purposes. The Farm Bureau is non-political, non-religious and non-secret. It is not intended to take the place of any other farm organization, nor to encroach upon their fields of activity, but it is in a position to co-operate with any other farmers' organization for the betterment of agricultural conditions. The story of a farmer who advertised for summer boarders and when a letter was received from a prospect who wanted to know if they had a bath, the wife said: "Write and tell them that if they need a bath to take it before they come," is not a joke in many farm homes.

The county agent, the county club leader, and the home demonstration agent, are the active agents of the County Farm Bureau. Their work is quite largely accomplished through demonstrations, and no one better than yourselves know the value of demonstration, for the demonstrating teacher is the successful teacher.

Suppose a county agent goes to Tom Henderson's place and says, for instance: "Tom, you are making a mistake in pruning your trees. They should be pruned so as to let the sun in to all parts of the tree. By this method you will have better colored fruit, your trees will be more easily sprayed, and the remaining branches will produce larger, more saleable, and higher priced fruit." That sounds reasonable to Tom and, if he and the agent have time, the agent will demonstrate the method on a few trees and Tom will trim the rest, following the suggestions received.

The county agent is much encouraged and goes to the next neighbor with the same suggestion. He is of a different turn of mind. He listens to the agent's suggestions, but finally says: "I have been pretty successful here for the past fifteen years and I have never trimmed my trees that way. I guess I will be satisfied and let well enough alone, and let the trees grow as nature grew them." At the third place the agent receives practically the same response as at the second, and does not feel that his efforts have been very successful as a whole. On the other hand, if he had called a meeting of all the farmers of the neighborhood for a pruning demonstration at the orchard of one of them who was willing to have his orchard used for demonstration purposes, and had done the demonstrating himself, or had some leading orchardist of the county who has made a decided success of fruit growing by following improved methods, or an expert orchardist from the college, those who are willing to accept advanced methods will express themselves as favoring what appears to them to be an improvement over the old way and declare their intentions of using this method in the future. Their neighbors who have confidence in their judgment will acquiesce in this opinion and profit by it, where they would refuse to change if approached by the county agent alone on their own farms.

The same is true of the silo tour. Men who think they cannot afford a silo and do not begin to realize the benefit a silo would be to them, if induced to attend a silo tour, note the effect on the livestock production directly attributed to the silo, the saving of feed and nutritious juices that would be otherwise wasted, are brought in line for more economical meat production, are shown the way to economically maintain a larger livestock production on their farms, to increase their profits and the fertility of their land at the same time.

By a dairy tour farmers who have considered any cow that gave milk a dairy cow have, in one day, learned to feed and breed for milk production, to weigh their milk and feed and thereby determine which cows are profitable for milk production and which are expensive boarders. To many it opens an entirely new, pleasing, and profitable farm industry. The farmer who has imagined that it took too much time to clean, test and treat his seeds and that the difference in yield did not justify such exertion, has oft-times been convinced by a Farm Bureau demonstration tour that slack methods in seed selection was one of the most expensive parts of farm operation. The inspection of purebred herds and grade herds that have been brought to a higher standard by purebred sires has changed the whole farming outlook for many a farmer.

The demonstration by the Farm Bureau in many counties of the dragging of roads at the proper time has been a large factor in improving the highways in many parts of the state and, by co-operative effort through the Farm Bureaus a number of communities have been provided with well graded and graveled roads where for years they

(Turn to Page 21.)

Two coats in one

One garment combining two practical coats of style and service. One side a soft glove leather coat, just the thing for Motor and general hard service—built to withstand all kinds of weather. The other, a substantial all Wool Tweed or Gaberdine overcoat of distinctive style. Every

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WILL saw your winter's wood in a few hours and then you can make money sawing for others. Many users say they make upwards of $11.00 a day cutting wood for neighbors. Expensive cumbersome rigs used in the past are made unnecessary by the Ottawa Saw Rig. Does all practical work any other saw rig can. For a small part of the cost of one of these high-priced and obsolete rigs you can now own the

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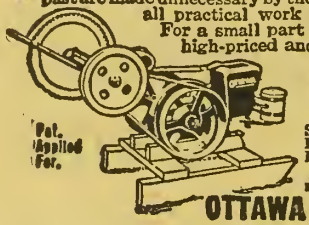

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Say "Bayer" when buying Aspirin. Then you are sure of getting true "Bayer Tablets of Aspirin"—genuine Aspirin proved safe by millions and prescribed by physicians for over twenty years. Accept only an unbroken "Bayer package" which contains proper directions to relieve Headache, Toothache, Earache, Neuralgia, Rheumatism, Colds and Pain. Handy tin boxes of 12 tablets cost few cents. Druggists also sell larger "Bayer packages." Aspirin is trade mark of Bayer Manufacture Monoaceticacidester of Salicylicacid.

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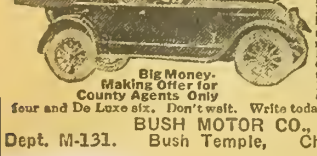

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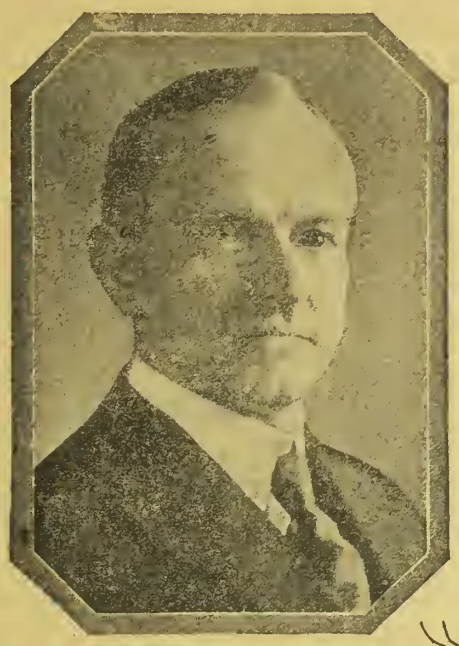

For Vice President
CALVIN COOLIDGE

A Square Deal for the Farmer

If the farmers of the United States think they have nothing at stake in this election—if they think it is simply a contest between the political "ins" and "outs" and that it makes no particular difference to the farmer which wins—they are making a very great mistake, and are likely to realize it when too late to help themselves.

In some matters of interest to the farmers the two parties agree.

For example, both favor strengthening the rural credits statutes; both recognize the right of farmers to form co-operative associations for the marketing of their crops; both favor extending our foreign markets; both are pledged to the study of producing farm crops.

Now, the matters mentioned are important, but not nearly so important as certain other matters; and in the way they look at these tremendously more important matters we find a radical difference between the Republican and the Democratic parties.

The difference is so vital that if the farmers of the country once understand it, there will be not the slightest doubt as to which party they will support at the polls in November.

The farm voice in government

The Republican party in its national platform is committed to "practical and adequate farm representation in the appointment of governmental officials and commissions."

Are not farmers entitled to such representation? The Republican party thinks they are.

Under Republican rule, for sixteen years that sturdy and faithful Iowa farmer, "Tama Jim" Wilson, was at the head of the great Department of Agriculture.

What happened when the Democrats came into power?

Why, they turned out "Tama Jim" and put in a university professor who knew nothing about agriculture and gave no evidence of caring anything about it.

Farm interests are vitally affected by the administration of the Federal Reserve banking system, by the Farm Loan system, etc. Should not thoroughly competent men who understand the farmers' needs and who have a sympathetic interest in agriculture be on these boards?

The Republican party thinks they should and says so.

Price fixing and price drives

Both parties were asked to promise to put an end to price-fixing on farm products and to government drives to beat down prices of farm products.

The Democrats refused to make such a pledge. The Republicans agreed and in their national platform are pledged to "put an end to unnecessary price-fixing and ill-considered efforts arbitrarily to reduce prices of farm products which invariably result to the disadvantage of both producer and consumer."

Do you remember what happened when we got in the war? Do you remember President Wilson's definition of a "just price"? He said:

"By a just price I mean a price which will sustain the industries concerned in a high state of efficiency, provide a living for those who conduct them, enable them to pay good wages, and make possible the expansion of their enterprises," etc.

And then do you remember what happened? Government contracts of all kinds were let on a cost-plus basis. That is, the manufacturer was allowed to figure all of the cost of every kind which he incurred (and he was not restricted in his expense) and in addition was allowed to figure a handsome percentage on top of all his expense and fix his price to cover everything.

Was the farmer allowed that "just price" which was granted so freely to others? He was not. Prices on some of his products were absolutely fixed, and without investigation of the cost of production.

One prominent member of the Democratic administration when asked about the cost of production of farm crops is reported to have said that this was no time to investigate farm costs of production; that it was the farmer's business to produce and not bother his head about the cost.

Throughout the war the farmer was frantically urged to produce by one crowd, while another crowd was using every device of market manipulation to hold down prices of farm products. Was that fair?

Government drives against farm prices

But, someone will say, we were in war, and the farmer should not complain about what it was necessary to do, even if they didn't do it to others.

Very well. Let us overlook what happened during the war. Let us wipe the slate clean up to the signing of the armistice. Let us consider what has happened to the farmer since the war ended.

The farmer had been urged to produce to the limit and had been assured that even if peace came, all he could grow would sell at profitable prices.

Do you remember the price drive in January, 1919, within three months after the armistice had been signed?

Do you remember the more determined drive in July, 1919, when hogs dropped from $22.10 on July 15 to $14.50 on October 15, although pork products to the consumer dropped on an average less than 10 per cent? In June, 1920, hogs were selling at $5.50 less per hundred than in June, 1919, but retail ham prices were $3.00 per hundred higher.

As a result of the government drive the producer received less and the consumer paid more Who benefited?

And do you remember the government drive of the last three months, and what it has done to the prices of grains and livestock? Within two months the prospective value of the 1920 corn crop decreased three-fourths of a billion dollars. Great advertisements announced that the government proposed to cut down the cost of living by dumping on the market the millions of pounds of government surplus meat at bargain prices.

Have you been making so much money on your cattle and hogs that you can afford further reductions in prices?

In July, 1919, No. 2 corn sold in Chicago for $2.19 per bushel; in July, 1920, for $1.56, a decrease of 29 per cent. In July, 1919, steers sold in Chicago for $15.60; in July, 1920, for $15.00, a decrease of 4 per cent. In July, 1919, hogs sold in Chicago for $21.85; in July, 1920, for $14.85, a decrease of 33 per cent. The decrease in wool prices was 25 per cent. In beating down prices of these products did the government help the consumer?

According to the United States Bureau of Labor Statistics, the consumer paid 24.1 per cent more for his food articles in July, 1920, than in July, 1919. He paid 12.4 per cent more for his clothing; 47.4 per cent more for his fuel and lighting. During the same time, metals and metal products increased 20.9 per cent, lumber and building material 79 per cent, house furnishing goods, 47.8 per cent. But according to the same authority all farm products had decreased over 4 per cent in July, 1920, as compared with July, 1919.

We shall not deal further with this sickening story of incompetent and inefficient government meddling. You know the story in most of its details.

As you think it over, remember this one outstanding fact: That the Democratic party, if continued in power, is committed to the same sort of a policy in dealing with the farmer and stockman that it has followed during the past two years. It was asked to promise to stop officious meddling which benefits only the speculator and the profiteer, but it refused to make such a promise.

In justice to themselves and their families and the generations to come after them, the farmers of the United States should put in power the Republican party, which realizes its obligations to them and to all other classes of citizens, and which further realizes that if the farmer is not given a square deal, our agriculture is going to be wrecked.

Talk to your neighbors about these things and make sure that they understand what a vital interest the farmer has in the presidential election November 2.

Republican National Committee

Republican National Committee,
Auditorium Hotel, Chicago, Ill.
Please send me, free and postpaid, copy of Senator Harding's Address on the present day problems of the farmer.

Name .....

Address .....

Dairying and Hog Raising

H. A. LINDGREN

All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, Western Farm Life, Denver, Colorado.

August Report of Colorado's Cow Testing Associations.

	Arkansas Valley.	Douglas County-Melvin.	Johnstown Greeley.	Otero County.	Platte, Boulder and St. Vrain Val.
No. of cows tested.....	214	457	304	203	354
Aver. pounds milk produced per cow	515	582.5	760	504.0	509
Aver. pounds butterfat produced per cow	19.3	21.0	28.0	18.48	22.3
No. of cows producing over 40 pounds B. F. per month. ...		19	56	...	24
High Cow—					
Pounds milk per month.....	1749	1727	2058	1206	1426
Pounds B. F. per month....	70.0	*70.8	65.6	38.58	58.5
High Herd—					
Number of cows	19	22	10	9	12
Lbs. milk produced per cow..	875	911.4	1348	732	807
Lbs. B. F. produced per cow.	30.2	31.9	**40.7	25.7	35.8

*The high cow in state, purebred Holstein, owned by E. J. Lindquist, Denver.
**The high herd in state, purebred Holstein, owned by Letford & Crowley of Milliken.

Cows all over the state showed a marked decrease in production this month. However, many are well along in their lactation period. Many of the best cows in the association are being shown at the county fairs this year, due to the efforts of the various testers.

Johnstown.

Brown Brothers of Greeley have purchased a purebred bull. Whowell & Polley, proprietors of the Virginia Lynn Dairy, are setting an excellent example for other dairymen. They are whitewashing their dairy barn which is a step toward better sanitary conditions. —W. G.

Rocabie, purebred Holstein, again is high cow in the association, producing 65.6 lbs. butterfat from 2,058 lbs. milk. W. A. Purvis of Johnstown is owner. Letford & Crowley's purebred Holstein herd of ten cows averaged 40.7 lbs. butterfat from 1,348 lbs. milk.

Platte, Boulder and St. Vrain.

Four "boarder" cows have been sold and replaced with three purebreds. One registered Guernsey sire purchased, and one silo completed and another under construction.—L. S.

H. S. Andrews of Boulder has the high cow again this month. Holstein producing 58.5 lbs. butterfat from 1,426 lbs. milk. C. L. Vollmar's herd of twelve produced 35.8 lbs. butterfat from 807 lbs. milk. They are the high herd in the Platte, Boulder and St. Vrain Valleys C. T. A. this month.

Arkansas Valley.

At the present time the dairy situation is very bright and much interest is shown in the dairy industry by the dairymen. The breeders' association has received twenty-five inquiries desiring locations here. There is an immediate demand for good quality cows. There are still several dairy farms for rent. About seventy head of dairy stock changed hands in the last few days. Forty head were sold averaging $215 each. Thirty head, mostly springing heifers, for $118.—R. M. R.

High cow this month belongs to Harry Heath, Lamar. No. 15 produced 70 lbs. butterfat from 1,749 lbs. milk. This is within eight-tenths of a pound butterfat of the high cow in the state this month. A. B. S. company have the high herd of nineteen cows averaging 30.2 lbs. butterfat from 875 lbs. milk.

Douglas County.

Several members are feeding grain and have been well pleased with the increase in the size of their milk checks. The association has acquired one new member. Several of the dairymen will have stock at the county fair. The high herd this month belongs to N. D'Arcy. Twenty-two cows averaging 31.9 lbs. butterfat from 911.4 lbs. milk. Mr. D'Arcy is the oldest purebred Holstein breeder in the state. E. J. Lindquist of Denver has the high cow, Jennie, a purebred Holstein, producing 70.8 lbs. butterfat from 1,727 lbs. milk. Seven boarders sold, one more silo completed. —R. E. S,

Otero County.

The herds feeding grain through July and August held up their production much better than herds not feeding grain. Mr. J. F. Conder and R. K. Huff's herds were tied for high herd in milk production, both averaging 732 lbs. milk. Mr. Conder's nine cows averaged 25.77 lbs. butterfat, which is .61 more than Mr. Huff's average. Both herds increased their average over July. A. O. Showalter of La Junta has high cow this month, Snowball, a Holstein, producing 38.58 lbs. butterfat from 1,206 lbs. milk.—A. A. E.

Colorado Feed Quotations.

	Fort Collins.	Arkansas Valley.	Douglas Co.-Melvin.	Johnstown-Greeley.	Otero Co. La Junta.	P., B. & St. Vr. Val.
Alfalfa	$15@18	$17@20	$ 20	$12@15	$17@20	$14@16
Silage	.....	10.00	10	7@10	.....	7.00
Beet pulp	.....	4.00*	.....	1.75‡	.....	1.75‡
Bran	2.70	2.10	2.75@3.35	2.55	2.60	3.00
Cottonseed meal ...	65.00	.....	6.00	4.00	4.00	4.00
Linseed meal	74.00	.....	6.50	4.40	6.50	4.50
Oats	2.85	2.25	4.00@4.40	2.80	3.00	4.00
Barley	2.75	1.85	4.00	2.70	.....	4.00
Corn chop	3.05	2.35	3.25@4.00	3.05	3.50	3.50
Maize	.....	2.10	.....	2.25	.....	.....
Shorts	.....	2.60	.....	.....	2.95	.....
Paid to dairymen for 3.5% milk per cwt.	.32 gal.	3.20	.75§	.75§	3.10	.70§
Sweet cream	.65 B. F.					

Milk—Pueblo, .33 gal.; Denver, .85 B. F.
*Wet. ‡Dry. §Butterfat.

Market Terms on Hogs.

"Top" is the day's extreme high price for carload lots.

"Bulk" is a term meaning the preponderance of sales for the day or period.

"Dockage" is a specified weight deducted from sows and stags originally used for breeding purposes which are coarse and rough—on sows dockage is 40 pounds.

"Prime heavy," hogs weighing 300 to 400 pounds, prime condition, form and quality. Usually 10 months to 18 months and are heavier as well as older than the majority of the hogs marketed.

"Medium heavy," good hogs weighing 240 to 300 pounds. Both the prime heavy and medium heavy hogs depend largely for outlet upon the packer. Most popular in fall and winter.

"Butcher hogs," most popular class on this market. Must be of right weight for the butcher block, from 190 to 220 pounds in most cases (although at times lighter or heavier), of good quality and proper condition. Nothing grading less than a good hog has a place in this class.

"Shipping hog": Shipper is a hog of good form, condition and quality used to supply order trade. The requirements vary, but for the most part call for animals weighing 175 to 200 pounds.

"Lights" are hogs weighing 160 to 190 pounds, consisting principally of young light weight barrows or clear sows. Graded good, common and inferior.

"Light lights," weigh from 130 to 160 pounds; graded good, common and inferior.

"Pigs" are graded as choice, good and common, and are subdivided as follows: Strong weights, 130 to 150 pounds; medium, 110 to 125 pounds; light, 90 to 110 pounds.

"Pewees," young small pigs from 60 to 80 pounds. Usually sell at a considerably lower figure than the heavier pigs.

"Roasters" are pigs weighing 15 to 40 pounds. They are rarely seen, except around Thanksgiving or Christmas.

"Roughs" are throwouts too common to grade, lack condition, form and quality.

"Stags" are male hogs castrated after maturity. As they are wasty in dressing, a dockage of 70 pounds is imposed.

"Boars" are not usually marketed until their days of service are over and are therefore old and coarse. As most stockmen have found from experience that it does not pay to send in boars, very few of them come to market.

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against all defects in material and workmanship. We ship you the size machine you need and let you use it for 30 days. Then if pleased you can make the rest of the small monthly payments out of the extra profits the separator saves and makes for you. If not pleased, just ship the machine back at our expense and we will refund what you paid. You take no risk. Write for FREE Catalog Folder now.

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Cuts Up Branches

Cuts Down Trees Level With Ground

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Does Work of 10 to 15 Men at less than one-tenth cost. Saw makes 310 strokes a minute. Mounted on wheels. Easily moved from log to log and from cut to cut along the log by one man. No more back-breaking cross cut sawing. The Ottawa falls trees any size As one-third of the tree is in the branches, a specially designed fast cutting branch saw is now offered. Engine also runs pumps feed grinders, cream separators.

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They sell at a much lower price than stags.

"Mixed packers": This class involves the heavy hogs that do not have the quality to grade as prime stock and the lighter weights that are not good enough for butchers or shippers. In short, it takes in all of the throwouts of the aforementioned classes, except those too coarse.

"Singer": A hog of narrow back and straight belly, particularly used for its lean bacon. Weight 160 to 200 pounds largely, although there is no standard weight. Must be of good quality, not necessarily fat. Popular in Canada and England, but not common in this country.—National Livestock Exchange.

Solving the Labor Problem.

With the growing scarcity of farm labor, and the excessive prices demanded by everyone able and willing to work on a farm; the high rate per hour now asked by the corn cutting crew, the solution of the silo filling phase of the dairyman's puzzle is not so simple. Big crews of farm hands are no longer easily assembled and cannot be paid off when the job is done, within any reasonable amount, so that the actual filling of the silo looms up each year a bigger and more appalling specter.

However, a great many dairymen, especially in the east, have after long study, hit upon a plan of filling the silo at what appears to them the rockbottom limit of expense. Briefly, the plan works out like this: On nearly every farm, or in fact, on the majority of them, may be found a gas engine—either gasoline or kerosene, sometimes stationary, sometimes portable, of from five to eight horsepower. These engines are used during the year for feed grinding and wood cutting. In almost any neighborhood will be found such a power equipment on at least one farm out of three.

Let us suppose that three silo owners live within working distance of each other. If each does not own an engine, some one of the group will. The men combine and purchase one of the smaller ensilage cutters of which many may be found on the market, most of them being excellent little machines, equipped with a blower. When three men buy such a cutter the initial investment of each is reduced to a minimum. Such a machine will last for years, if not too many silos are filled each year.

When the time arrives for filling the silos the three or more dairymen "change works" and with the labor found on the three or four farms, with the possibility of additional help of about two extra men, all three silos can be filled quickly and at very low cost. One of these small cutters operated by a five or six horsepower engine will keep three teams hauling corn, if the corn field is not too far distant from the silo. In that case an additional team would be needed to keep the machine cutting steadily. Two good men in the silo will keep the ensilage pretty thoroughly tramped down, and one man can operate the cutter and look after the engine. With a man on each wagon all the additional help needed is a couple of husky men to load the wagons and the trick is done.

As soon as one silo is filled the entire outfit moves to the next farm and repeats the operation until the three silos are filled. When the ensilage has set-ed pretty well in each silo, if necessary, and if there is a surplus of corn, ey can easily be filled to the top again. In this event a few loads can be cut into the silo by the men on each farm without even "changing work" the second time, as all that is necessary is to move the machinery from farm to farm.

This plan has, where it has been tried, worked out to perfection, and it has cut the cost of silo filling fully 50 per cent. —John W. Robinson in The Dairy Farmer.

The Truth About Hebe.

What about Hebe? Information as to a new and extensive advertising campaign to market this much discussed product is coming to attention both in the columns of the farm papers and the city papers. The fiction behind which this product hides should be punctured so every one understands it, not as an attack on Hebe, nor as a criticism of its manufacturers, who are scrupulously careful to sell it for what it is, a mixture of skimmilk and vegetable and other oils, but as a statement of the actual facts.

The sale of Hebe does not open a market for a farm product, for it is sold not as a separate product, but in direct competition with condensed, whole milk. Every can of Hebe which is sold comes very nearly preventing the sale of an equal can of condensed, whole milk. The trouble with Hebe in spite of every camouflage is that it is an imitation product, in the same class with oleomargarine and nut margarine. It makes its appeal to the public because it contains a fat, in spite of the fact that that fat does not contain the vital elements which set milk fat or butterfat out and above every other human food in importance. The undivided attention of the public must be centered on this vital value of butterfat, that which makes the dairy cow the foster mother of the human race, and when this is understood, then the necessity for legislation to protect whole milk, condensed whole milk, and butter from imitations which do not contain any appreciable amount of butterfat, will be well understood. Hebe stands on the counters of hundreds of grocery stores alongside of the recognized brands of condensed milk. A customer who asks for "condensed" or "evaporated" milk is asked which he wants, "Hebe" or some other brand, and on learning the price decides, without the necessary information by word of mouth—no matter if the label says that Hebe does not contain butterfat.—Hoard's Dairyman.

Scrub Bull Funeral.

One of the most impressive and inspiring funerals ever held in Waupaca county occurred on Wednesday, July 28th, when the Bear Creek Cow Testing Association commemorated the passing of the scrub bull in that vicinity. Twenty-two cars followed the likeness of such a bull from Bear Creek to Chain o' Lakes, where it was dumped overboard with due ceremony.

Mr. Ralph Spillman, tester of the Bear Creek association, and five other young men acted as pallbearers while "Chub" Raisler, prominent Holstein breeder of Bear Creek, officiated as undertaker. The casket was covered with beautiful bouquets of bull thistles, presented by members of the association. Remarks of tribute were made by Tom O'Conner in view of the deceased having so long resisted the inevitable coming of the purebred sire.

The procession was interrupted by stops at farms where registered bulls hold places of profound respect and high esteem.

The herds visited were those of Christensen Bros., W. P. Kissinger, John E. Erickson, A. B. Rowe, A. E. Smith, W. H. Taggert & Sons, and George Lindsay & Sons. It was a long, hot trip and the place on the county agent's Ford where a speedometer should be, registered about 125 miles. The members of the association have voted in favor of corporal punishment and are already looking for a victim for next year's excursion.—James H. Dance, County Agent, in Hoard's Dairyman.

Poland Chinas Increase.

Good strong competition between breeds of livestock is a healthy thing for the industry. Within the last few years the Duroc Jerseys have led in numbers at most of our fairs and shows. It is interesting to note the increase in Poland Chinas at this time. From all appearances it will be nip and tuck between the reds and blacks in the next few years. Both these popular breeds are efficient meat producers and the good qualities of one are offset by the good qualities of the other. A recent Poland China Breeders directory for Colorado shows 240 breeders in the state. In viewing the exhibits of this breed at our recent fairs, one cannot help but be impressed with the wonderful scale and good feet our breeders are maintaining.—H. A. L.

Heavy Drafters Sell High.

Percherons of the heavy drafter type sold high at the farm sale of Louis Bein near Berthoud, Colo., recently. One span of registered Percheron mares brought $2,000, and seven registered mares averaged $705. One span of grades brought $1,000, another sold for $735, and seven grade mares averaged $435. These prices indicate that horses of the kind that furnish farm power always bring big figures. Col. Joe Hayes of Loveland and Col. H. E. Buchanan of Denver were the auctioneers.

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First Essex
San Francisco to New York —4 days, 14 hours, 43 min.
Lowers Record 12 hours, 48 minutes.

Second Essex
New York to San Francisco —4 days, 19 hours, 17 min.
Lowers Record 22 hours, 13 minutes.

Third Essex
San Francisco to New York—4 days, 21 hours, 56 min.
Lowers Record by 5 hrs., 35 min.

Fourth Essex
New York to San Francisco—5 days, 6 hours, 13 min.
This car took a longer route and also ran into storms. Yet it broke the former record by 11 hours, 19 minutes.

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The first test of an automobile carrying U. S. Mail across the American continent was made with the light weight, moderate priced Essex. And it resulted in establishing the Essex as holder of the trans-continental record both ways.

The performance while of momentous importance in the world of speed and automobile sportsmanship—is of greater value to the motorist. For it removes all doubt about the reliability of light weight in the most difficult and hardest road service.

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Many other unmatched Essex records forecast its ability to break the transcontinental records at will. For instance it holds the official 50 hour endurance record of 3,037 miles in 50 hours. It holds the 24-hour dirt track mark of 1,261 miles, made by an owner-car, which had previously seen over 12,000 miles service. And it holds the world's 24-hour road mark of 1,061 miles, made over Iowa country highways.

Yet these records are significant only because they show the endurance and reliability of every Essex car. They speak for the ability of any Essex to duplicate these feats.

Essex Motors, Detroit, Michigan

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ESSEX MOTOR CARS — WATCH the ESSEX — ESSEX MOTOR CARS

Standardize Dual Purpose Type

BREEDERS DISAGREE ON IDEALS TO STRIVE FOR

H. A. LINDGREN.

IT is interesting to note the gradual change we often experience in our ways of thinking. We may be set on some particular point and change our viewpoint entirely within the period of several years.

Not many years ago many of our people scoffed at the idea of a dual purpose animal. Many leading livestock men declared that it was either beef or milk and that it was not possible to develop an animal that was adaptable to both purposes. Such leading stockmen as Prof. Shaw, who selected so many of the leading Milking Shorthorns in our country today, and Dr. James Withycombe, of the Oregon Agricultural College and later governor of Oregon until his death, argued this question from both angles. Prof. Shaw supported the dual purpose idea of beef and milk, while Dr. Withycombe contended that it couldn't be done. Their arguments brought out some interesting facts. Many of our western colleges in their animal husbandry work argued against the idea.

The past three or four years have brought a considerable change. Colleges now are giving instruction in judging of dual purpose animals. More breeders are taking to the idea until we find that real progress is being made toward the standardizing of an animal that can bring us both milk and beef.

The strong demand for dual purpose animals, especially Shorthorns, at this time creates an alluring field for breeders. There are not enough to go around. In fact, it looks as though it is going to be one of the strongest types within the next few years. There will always be those who desire a single purpose animal, either beef or dairy. There is no question but those branches will each retain their place, but the farmer who has been running the stuff on the range and who finds himself cut off from that source of feed, is going to look to the farm pasture idea. He wants beef and he wants cows that can produce milk. His feed will be more expensive and he wants an animal that will pay a profit in the milk pail and, when turned, will sell for a reasonable price for beef. Our more substantial small stockmen are looking that way and we are sure to see some real progress in the dual purpose breeds in the future as there is a practical place for them.

In order to place the dual purpose where it rightly belongs we are in need of a standardization process. So many men, even those who are breeding dual purpose cattle, have different ideas in regard to type. There is no question but that there is a definite type, but let us get the idea of what it is and standardize our efforts along that line. The way the outlook is at this time the man who goes after the dual purpose type in breeding, especially Shorthorns, will have a mighty good market in the next period of years.

Some of our leading authorities on this subject state that we cannot get an animal too beefy for a dual purpose type. Then that being the case, we cannot expect an animal to be a compromise between dairy and beef type and still be a dual purpose animal. We do know that there are many cows that are strictly of the beef type that are excellent milkers. But as one breeder has said, we cannot afford to go out in a beef herd and expect to buy that kind. And if we should be able to do so could we expect to transmit that characteristic in the offspring?

There is a great deal being said on this subject and the man that is starting in the business is apt to be misled. It would seem that the Milking Shorthorn Record Association could do no better work than to state definitely what constitutes a standard type of dual purpose animal.

Farming Handicapped By High Prices of Lumber.

Farm development and the production of crops and livestock are being seriously handicapped by excessive lumber prices, according to a report recently made by the Forest Service of the United States Department of Agriculture to the United States senate. Livestock raising and dairying seem to be the hardest hit because of the large barn equipment and shelter necessary. Heavy losses of implements and crops due to lack of proper storage facilities are said to have taken place in some sections. From all parts of the country come reports that present conditions are tending to lower the standards of living and to make it more difficult to hold the farmer's own children and desirable classes of labor on the farm.

Cheap high-grade building material, the report points out, has been a powerful aid in the rapid development of farm lands. The middle west, for example, was built up with the output of white pine lumber from the lake states. About 1880 the best quality of white pine lumber, such as now can hardly be found in any market in the country, commonly retailed throughout the middle west for $15 to $20 per thousand feet. In February, 1920, the farmer in Kansas paid $70 per thousand for yellow pine framing and about the same for Douglas fir. For No. 2 common lumber suitable for sheds and rough construction, either fir or southern pine, he paid $72.50. For B and better yellow pine finishing lumber for house construction he paid $147.50. Silo stock cost him $185.

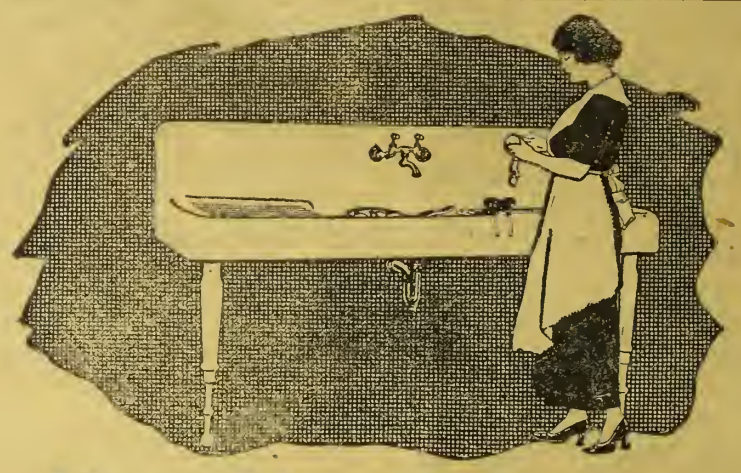
Out of information received from 220 counties in 32 states, only about half a dozen localities reported more building than in the past. New building is reported as going on normally, or in excess of normal, in only 10 out of every 100 counties, and this in regions of exceptional prosperity. In the prairie states from Illinois north and west, lumber dealers reported that repairs have been deferred to an extent of about 32 per cent and that new construction is something less than 50 per cent of normal. The widespread deferment of building is almost uniformly laid to a combination of high lumber prices and shortage of labor.

Apparently throughout much of the region covered supplies of lumber can usually be secured in the desired amounts and quality if the prices could be paid. Locally, however, the pronounced changes in lumber distribution of the past year made it difficult to secure materials and qualities without delay. These difficulties were greater with the better grades than with common lumber, and they occurred in the heart of the lumber-producing district of the south because of excessive demands and competition for this class of material.

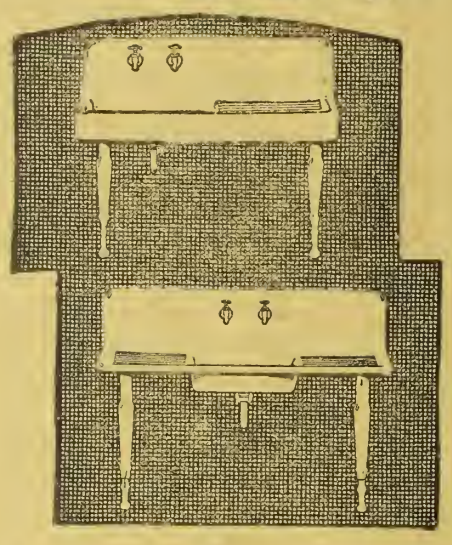
Estimates received from county agents indicate an average annual utilization per farm unit of about 2,000 board feet and increased future demand for lumber in practically the entire region covered is predicted in order to take care of improvements looking toward better equipment and improved living conditions, provision for increasing population and the development of new farm units. In the face of this demand we are confronted by a decreasing lumber production in all of the forest regions of the country except the extreme west.

Farmers of the country were also affected by the inability of the manufacturing concerns to secure adequate supplies of hickory, ash, and oak, for use in construction of agricultural implements. The demand for these woods has become so great that it is impossible to secure needed amounts. Prices have gone so high that a number of concerns are making purchases in the open market only when prices do not exceed a prescribed maximum, and the amounts secured have fallen to about one-fourth of their utilization. In the case of farm implements it has been found that it is impossible to increase the price of the product beyond a certain point without a marked falling off in sales

One cause of the conditions outlined above, according to the report, is the cutting of our forests without making provision for growing adequate new supplies of timber. The original softwood forests of New England and the lake states have been almost exhausted. The pine forests of the south are being depleted at a rapid rate and in ten years will not produce more timber than the south itself will need. The only remaining supply lies on the Pacific Coast and this must be called on to supply increasing amounts for the country as a whole. The hardwood forests are likewise rapidly disappearing and such woods as oak, ash, and hickory, that are used by makers of vehicles and agricultural implements are becoming increasingly scarce. The only remedy for the situation, it is pointed out, is for the federal government, the states, and private individuals to grow timber systematically.



Have More Pleasure In Kitchen Hours



Why not make the kitchen more attractive? Install a "Standard" One-Piece White Enameled Sink—have hot or cold running water ready instantly when wanted—save yourself that disagreeable trip of running out to the well—save time in preparing meals and washing dishes.

You can install "Standard" Sinks in any home. Ask a Contracting Plumber or write us for color-printed catalogue of "Standard" Plumbing Fixtures for the Farm.

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"Standard" KITCHEN SINKS

Heppe Succeeds Sweet.

W. F. Heppe, agent in marketing, U. S. Bureau of Markets, has been appointed director of marketing work in Colorado to succeed Stuart L. Sweet, who resigned on June 15 to become manager of the livestock department of Sweet Seed Farms at Carbondale, Colo.

Mr. Heppe has been associated with the Office of Markets since January 14, 1919, when he was engaged by the Colorado Agricultural College in the capacity of investigator. On September

W. F. Heppe, Agent In Marketing.

2, 1919, he was appointed agent in marketing. Mr. Heppe is a graduate of Kansas State Agricultural College and holds the degree of master of science from Iowa State College of Agriculture. After leaving the college he engaged in farming in Fremont county, Colo., thus coming in contact with marketing problems from the practical side.

The work in Colorado, with headquarters in Denver, is maintained cooperatively by the U. S. Bureau of Markets and by the State Agricultural College through its extension service and experiment station. Mr. Heppe will leave for Washington before the close of the year to confer with officials in regard to forwarding the marketing work in Colorado.

Ever since its organization three years ago the Colorado Office of Markets has rendered practical and consistent service to the farmers of the state in furthering the organization of cooperative shipping associations for vegetables, fruits and livestock, organizing and maintaining honest market reports, keeping producers closely posted on crop movement, rendering aid in car distribution and developing new markets. No branch of activity under the Department of Agriculture has been of more direct, practical benefit than the marketing work, and farmers hope that its usefulness will not be further curtailed by Congress through failure to appropriate ample sums for efficient service.

Spreading the Gospel Of Better Agriculture.

The gospel of Better Farming is being carried to thousands along the Burlington and Colorado & Southern railroads in Colorado, Wyoming and New Mexico by means of an exhibit car that started on its journey in August and will continue en route for weeks to come. In charge of the car are Earle G. Reed and H. L. Ford, agriculturists, whose principal business is to answer questions from farmers. The eye is relied upon rather than the ear in impressing lessons of value principally to the dry land farmers. A crop rotation for the non-irrigated plains region is graphically shown by a miniature farm. This is a real dirt farm with actual crops growing. By reason of being under roof of a railway car it is not open to the natural rainfall, hence water must be supplied from a sprinkling can. That, however, is not a handicap, for the lesson conveyed by the exhibit is not so much that of moisture conservation, but the value of a cropping system that permits of the handling of the largest number of livestock. The original model was designed and constructed by Prof. O. S. Rayner, formerly farm management extension specialist at Colorado Agricultural College (now of Hugo, Colo.), and it was shown at the National Western Stock show in Denver last January. A complete description of this rotation was given by Western Farm Life in the issue of February 15, 1920. In addition to the rotation, which may vary somewhat with local conditions in the three states covered by the tour, this model farm also illustrates the practical grouping of farm buildings, shows a windbreak that will prevent soil blowing and visualizes in a very effective manner the methods and practices that make the dry land farm profitable as well as beautiful.

Models of various types of silos are shown, including the pit and several kinds of high silos, such as the cement stave, solid concrete and hollow tile.

Dairy equipment of various types is shown and there are photos, charts and diagrams, all calculated to convey practical lessons.

The writer visited the car at Parker, Colo., where the farmers passed in and out during a six-hour stay, discussed the rotation while leaning on the "fence" surrounding the model farm, examined the silo models and dairy equipment, looked at the pictures, asked questions and furnished information to the men in charge. Many a pointer was picked up by Mr. Reed and his associate that will be carried along the way to other farmers. This is one of the ways these agriculturists have adopted of serving the people along the railroad—namely, to give them the benefit of practical ideas picked up in contact with farmers.

The farm home is not overlooked in these exhibits, various labor and time saving devices being shown for the benefit of the women.

At some points where night stops are made an illustrated lecture is delivered on "Better Agriculture."

A bulletin board is a unique feature of the car. On this are displayed notices of farm products and livestock wanted or for sale, as per example:

"Stewart & Shaw, Wiggins, Colo., have a few registered Shorthorn females for sale."

"Ernest Snow, Chugwater, Wyo., registered Poland China gilts. March and April farrow. Open. Write for prices."

"6,000 bushels Kanred seed wheat raised by Hart Bros. for sale by First National Bank, Wellington, Colo. $3 per bushel."

"Wanted, dairy cows; 6 to 10 good grade Holstein cows to freshen this fall. Address A. Wayne Wilson, Alliance, Nebr."

So the farmer in Las Animas county who wants Shorthorns was able to get in touch with a breeder in Weld who has stock for sale, and the wheat raiser in Union county, New Mexico, learned that he might get Kanred wheat seed from a Wellington bank. The farmers made use of this unique marketing bulletin service.

On a portion of the tour the agriculturists had the aid of a practical farmer as lecturer. He was Roy Marple of Cope, Colo., whose own success in dry land farming with livestock as a basis, enabled him to tell others how to succeed under plains conditions. Mr. Marple proved to be an excellent lecturer, because he spoke from experience. He answered questions from practical farmers in a practical way, because he had proved the theories of scientific agriculture. He is growing wheat as a profitable cash crop but putting his main reliance in cattle and hogs, for which he raises ample feed. Mr. Marple will be remembered by readers of Western Farm Life as secretary of the Cope National Farm Loan association. The splendid results accomplished by that association were recently discussed in this magazine.

Brief bulletins on practical subjects were distributed, including what is known as the "silo series," which takes up Co-operative Pit Silo Building, Why Have a Silo, Requirements of a Good Silo, Types of Silos, Reasons for Constructing Above-Ground Silos, Reasons for Constructing Pit Silos, Requirements of a Good Silage Crop and Feeding Silage.

Improved seed, better livestock, handling and loading potatoes, home curing of meats were other single sheet bulletins that summed up each subject in a concise way. Much good is being accomplished by the exhibit car.—A. T. S.

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See if you can find such a fine car at these Mitchell prices: *Six* passenger Touring Car, $1750; *six* passenger Sedan, $2900; *four* passenger Coupe, $2800; *three* passenger Roadster, $1750.

Visit a Mitchell dealer now. Then contrast different cars of the above prices and higher.

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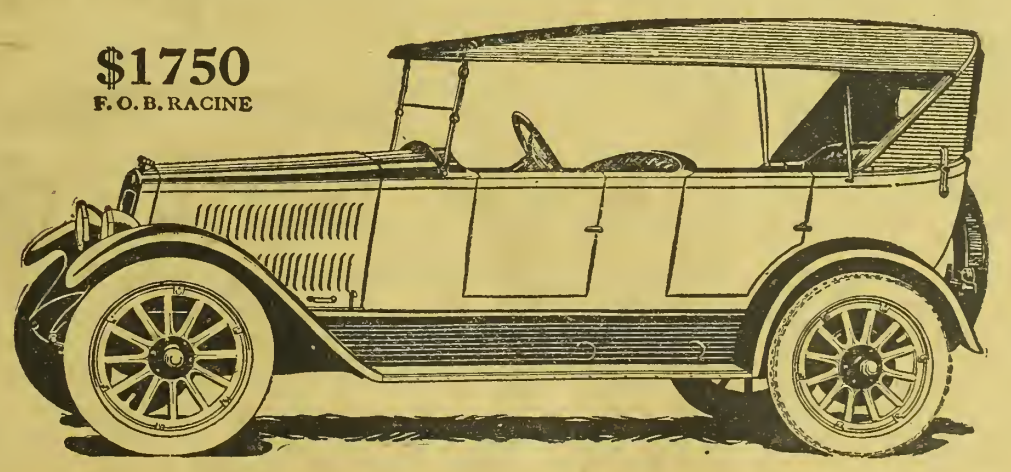


Mitchell

Prepare for Trapping Season.

If you are going to trap this winter, you should make preparations now, even though it is too early to start trapping. The professional trapper always locates his trapping ground early in the fall, as animals make more sign then than later in the winter.

Traps should be bought and everything got ready so as soon as fur is prime, trapping can be started.

Where trapping is to be done on a small scale it is probably best to use victor traps, as they are the least expensive and at the same time they are reliable. The New House trap is stronger than the Victor and will last much longer, but most beginners do not care to invest so much money in the start, so the Victor is the most used. The jump traps are a great advantage to a trapper as they can be set where traps with the springs cannot, as in the mouth of holes for example. If the beginner can afford it he will find the jump trap best for the skunks, mink and muskrats.

The No. 1 trap is made to catch rats, weasels, and other small animals such as rabbits and prairie dogs. It is used for skunks by some trappers, but I have found the No. 1 or the No. 1½ better for them.

The No. 1 trap is known as the muskrat trap, but it can be used for either skunk or mink.

The No. 1½ trap is the proper trap to use for skunk and mink.

The No. 2 is probably the best all-around trap. It can be used for small animals and will not ruin their hide as a larger trap would. It is the right size for fox and will hold coyotes, badgers, lynx and wildcats.

The No. 3 or the No. 4 are the best sizes for coyotes. It is always best to use large enough traps or valuable fur will be lost by the animals pulling out. The larger traps may cost a little more to start with, but they soon pay for the difference.

The beginner does not need over three dozen traps and in some cases a dozen will be enough. It all depends on how much time is available and the kind of animals to be trapped. If muskrats are to be trapped more traps are needed than if trapping for coyotes. For the general trapper one dozen No. 1's for muskrats, one dozen No. 1½ for skunk and mink, six No. 2's for fox and badger, and six No. 3's for coyote will be enough traps to begin with.

The time to begin trapping is when fur is prime. There is a saying that fur is prime during all months that are spelled with an R in them. This is not true, as fur will not be prime in the south as early as it is in the north. In Colorado the time to begin trapping varies according to the weather. But the fur is usually ready to be taken about the first of November, although some does not get prime till December or January. The Indians always started trapping as soon as the leaves on the cottonwood trees turned brown. This is a good way of telling when fur is worth taking. Fur should not be trapped for till it is prime, as pelts are of little value. The early trapper always looses money by starting too soon. —H. L. Lucas, Colorado.

Farmers' Sugar Factories.

Keen interest is being evidenced by sugar-beet growers in various sections of the country in the possibility of producing their own sugar on the farm by some simple process or of establishing and operating their own sugar mills. Owing to the scarcity and high price of sugar numerous inquiries on the subject are being received by the Bureau of Plant Industry of the United States Department of Agriculture.

According to specialists of the bureau who have made a close study of all phases of beet-sugar production, there are several fundamental features to be taken into consideration in the establishment and operation of sugar mills. In the first place, no simple or inexpensive method of making sugar from beets on a home or small scale has been devised. Therefore a fully equipped sugar mill is necessary in producing sugar from beets. The smallest beet-sugar mill, say the bureau specialists, to be successful should slice not less than 500 tons of beets a day for a period of 100 days each year. Since the average yield of beets in the United States is 10 tons per acre, not less than 5,000 acres of beets must be grown annually for each mill of this size. A smaller acreage would probably cause the mill to operate at a loss under normal conditions. There is almost always a larger or smaller loss of beet acreage during the season in every community where beets are grown, hence in order to bring 5,000 acres of beets to maturity it would be wise to plant bout 5,500 acres. In order to insure the production of from 5,000 to 6,000 acres of beets annually in a given area there should be available in that area at least from fifteen to twenty thousand acres of good beet land, so that proper crop rotation can be practiced. This acreage should be so located that from 25 per cent to 50 per cent of the beets grown can be delivered at the sugar mill by wagons, and the remainder of the beets should have a freight haul of less than 100 miles, in order to avoid heavy freight charges.

The construction and equipment of a mill of 500 tons slicing capacity would cost under present conditions approximately $750,000. This is about 50 per cent above pre-war costs owing to the incresed price of materials and the higher scale of wages. In addition to the initial cost of the mill approximately $500,000 of working capital would be required in cash for overhead charges and operating expenses until returns can be expected from the sale of the sugar.

Probably the most important of the other items to be taken into account in the operation of a beet-sugar mill is that of a supply of sugar-beet seed. A 500-ton mill would require about 100,000 pounds of seed annually to insure the production of sufficient beets for a 100-day run. Sugar-beet seed of good quality has been produced in the United States each year for several years, and those who are considering the erection of beet-sugar mills should look into the possibilities of producing their own seed. This minimum-sized mill would require in addition to its permanent employes about 300 workmen for the operating period and a good supply of pure water, high-grade lime rock, and plenty of coal for fuel, besides numerous other supplies.

Morgan County Fair.

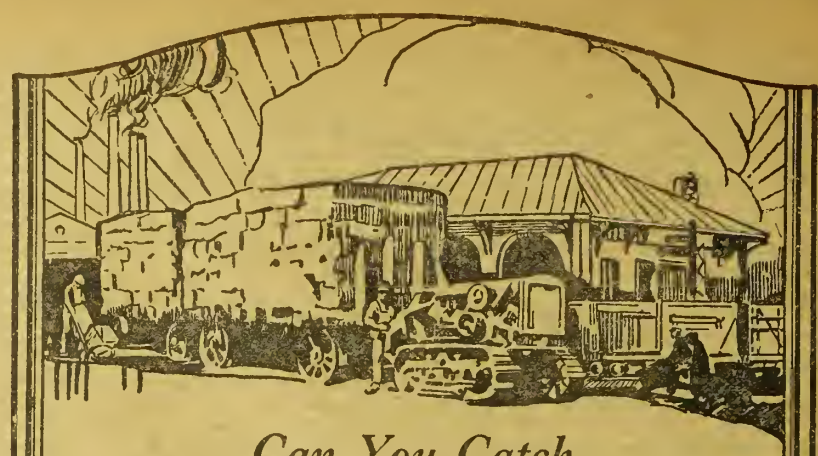
(Continued from Page 5).

three breeds, Holstein, Jersey and Guernsey. The grand champion bull in the Jersey breed is owned by the Work Bros. of Fort Morgan and grand champion cow by Ralph R. Drennen of Fort Morgan. The Works had the largest herd and their display was a credit to them. They are the oldest Jersey breeders in the county. The Holstein grand champion bull is owned by the Great Western Sugar Company. This sire, Avoca Lodge Upland Johanna, is an outstanding bull of unusual size. The grand champion cow, Telden Rust Snowflake Pontiac, is owned by the same company. The Guernseys shown were all in the grade classes.

The horse show was exceptionally fine. The Morgan county people have good horses in the draft classes. The teams in harness were very good. The horses were judged by Prof. C. I. Bray of the Colorado Agricultural College. Most of the winnings were captured by Sergeant & Sons, breeders of Percherons. In the mule classes the Great Western Sugar Company won first on team.

Morgan county is noted for its hogs. The Duroc Jersey and Poland Chinas were the main breeds shown. These were judged by Prof. Bray. In the Duroc Jersey class R. J. Harding won grand champion on R. J.'s Cherry King, a boar brought to the state by Mr. Harding. He also won the prizes on herds as well as grand champion sow. Mr. Harding is a newcomer to Colorado. However, he is an old breeder, exhibitor and judge of Durocs from Iowa. He will develop the breed in Morgan county and will be heard from in future state shows. Some exceptional Durocs were shown by Ralph Simes of Fort Morgan. He was in the money several times.

Some of the best Polands we have in the state are to be found in Morgan county. Mr. I. L. Mathison, Fort Morgan, showed an excellent quality and type. He was in the money on some young stock. He showed somewhat at a disadvantage in that his animals were not fitted. The grand champion boar in the Poland China classes is owned by G. W. Yearous of Fort Morgan. His herd shows excellent breeding. His grand champion boar Slim Jumbo, by old Jumbo, is an excellent animal. In the sow classes an interesting fact was that the junior champion on both sow and boar was won by a youngster, E. E. Johnson, a member of the pig club. He also owns the grand champion sow who was the mother of the two junior champions. They in turn were sired by the grand champion boar of the show. This was an interesting fact and the boy has just reason to be proud of them.



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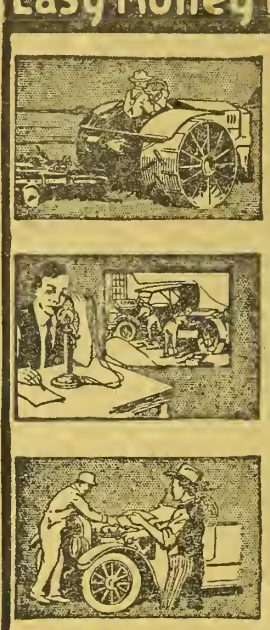

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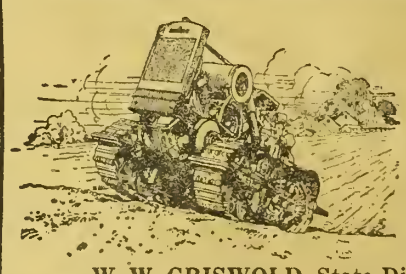

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Larimer County Fair.

The Larimer county fair was held at Loveland, August 31 to September 3. The usual good showing of what the county produces was on exhibit. The attendance was said to be somewhat less than previous years, although the weather conditions were quite favorable. The Larimer county fair has been established for a long time and is a successful institution in every way.

One of the most important departments in the agricultural show was the boys' and girls' club work. The management of the fair acted as host to 170 club members this year, paying their expenses at a camp on the grounds. This work was under the direct charge of County Club Leader W. S. Hill. The boys and girls were shown a good time, and besides they put on a very good club show, consisting of 45 club pigs, 15 pens of poultry, 16 exhibits of Minnesota No. 13 corn, 8 calves and 48 sewing exhibits, consisting of 252 articles. The club members also staged two sewing demonstrations, 1 canning and 1 poultry culling demonstration. A stock judging contest was also staged.

In the pig club showing pigs were divided into breeds, sow and boar classes. In these the Poland China sow class winner was Ben E. Rodgers, Wellington; Poland China boar, Charles McGaughy, Berthoud; Duroc Jersey sows, Wayne Watts, Timnath; Duroc Jersey boars, Geo. Morton, Jr., Fort Collins. In the second year work Rufus Klein, Berthoud, was winner on Poland China class and Chandler Blanchard, Wellington, on the Duroc class. The showing was very good in every way and a credit to the able leadership of Mr. Hill.

The display of farm crops was very good of all such crops as are matured at this season of the year. The Kanred wheat shown was excellent. It is reported that this wheat yields 6 to 8 bushels more per acre in the county than the other varieties grown. Some of the best livestock to be shown in the state are raised in the northern Colorado section. They were well represented in the livestock department. In the Shorthorn show, Warnock & Sons, Loveland, won a goodly share of the premiums, including grand championship on cow, Secret Susan. The grand champion bull award was taken by Maxwell & Son of Fort Collins on First National.

In the Hereford classes only one herd was shown, that belonging to A. J. Campion, whose farm is at Wellington, Colo. His bull, Brummel Majestic, was the leader in bull classes, and Lorna Doone in the cow classes.

The dairy cattle were of excellent quality and well represented in all breeds. J. W. Dickey of Loveland was the winner of both championships on Guernseys.

In the Jersey classes Jake Stroh of Loveland won the championship on bull and J. D. Pancake, Loveland, championship on cow. The Holsteins shown were mostly from Johnstown. In this the championship on bull was awarded to W. E. Letford of Johnstown on Goodro Johanna Fayne. This bull was bred and raised by Lohry & Wailes of Milliken. The championship on cow was won by Virginia Lynn Dairy Co., owned by Whowell & Polley of Johnstown, on South Anondago Favorite, a cow of wonderful conformation.

W. A. Purvis of Johnstown was pres- with his two excellent producers, -bie and Alice, two of the highest -ucing cows in Colorado.

he horses shown were mostly of the Percheron breed. A large string from the firm of J. Dunham, Loveland, was in the first money several times. Most of the premiums were awarded to Louis T. Bein of Berthoud, Colo., including grand champion mare and grand champion stallion. This herd won fifteen firsts. Mr. Bein is selling his horses.

The hog show was well filled with Poland Chinas and Durocs. Several of the animals shown are well known to hog breeders over the state. In the Poland China classes C. J. Mather of Longmont won grand championship on boar, and D. D. Kessler, Loveland, won grand championship on sow.

In the Duroc Jersey classes the championships were won by Geo. E. Morton & Sons, Fort Collins. The Duroc futurity was well filled. The National Duroc Record Association gave $400 in the fall and spring futurities. The first prize litter was exhibited by the Agricultural College. Second litter by Burt Hart, Longmont, and third by H. G. Sitter, Fort Collins. The hogs shown in both breeds were of excellent quality. The people of Larimer county have built a wonderful fair. The close harmony between the departments in every line was a pleasure to see. They work together not only in fairs, but in all things that tend toward the development of their community. This spirit is bound to win wherever it is prevalent. —H. A. L.

What a Farmer Thinks Of the Farm Bureau

(Continued from Page 14.)

have been all but impassible for a number of months out of each year.

The county agent is in close touch with the needs of all sections of his county. Each community has a community chairman and a community leader for each project chosen by the people of that community as being the ones needing special attention for this year. The people of all the communities of the county have a voice in choosing the projects that will receive special attention, as county projects of work for the year and the men or women who shall act as county leaders of these various projects.

The County Farm Bureau organization consists of a president, vice president, a secretary-treasurer, and an executive committee composed of the chairman or chairwoman of the county wide projects. The county executive committee meets once each month and hears the report of the work accomplished in the various projects, makes suggestions as to the methods of improving the work, takes up emergency questions that have arisen during the month, makes plans for demonstrations and tours of inspection where better and more successful plans are in operation.

The county agent is a practical farmer. He knows the conditions and the needs of all the communities of his county. He is in close touch with the agricultural college and knows what the experiments there have shown to be the best varieties of grains and grasses which are best adapted to the different sections and altitudes of the state. The county agent of each county of the state meets the agents from all the other counties of the state in conference and knows what has been successful in each of them, and is able to apply some of them to the production of better agriculture in his own county. The county agent learns from the entomology department of the college about the various pests that will endanger the crops and the best methods of avoiding or checking them. The same is true of diseases of stock and the veterinary department and all other departments of the farm and college. It would be impossible for the county agent to find all the improvements that would be beneficial to his county or apply the remedy for all the pests, so he must have the assistance of the farmers. This must be an organized assistance. * * *

When you consider the waste of food because of the lack of knowledge of the best methods of preservation, when you get the report of the percent of undernourished children in the schools of your respective counties, the wasted feed and wasted energies expended in attempting to raise chickens and garden without the necessary knowledge of the proper modus operandi, when you realize that in many farm homes there is no bath room or any modern convenience, when you see the farmer's wife carrying water long distances from the well, then the need of a home demonstration agent is apparent and it is likewise apparent that she cannot do the necessary work without the assistance and guidance of an organized, effectively working body. No other agency than the Farm Bureau has attempted this work or are at present in a position to attempt it.

The department of the Farm Bureau which touches your work as school superintendent most closely and in which you can take a more active part than in any other, is that of the boys' and girls' club work It is this department that is doing more to satisfy the boys and girls with farm life, and instill in them an interest and permanent determination to be progressive, scientific agriculturists than any other. Club work is the greatest back to the farm and stay on the farm movement that has ever been proposed. During the year practically every club boy and girl in the county has an opportunity of studying the methods and noting the effect of every other club member who is doing the same line of work. The competition is keen but friendly, the interest is unbounded, and the results are hard to grasp. * * *

The State Farm Bureau is a federation of the county Farm Bureaus of the state. It was organized for the purpose of unifying the county Farm Bureau and dealing with those problems which were statewide in their nature and could not be properly handled by county organizations. * * *

The American Farm Bureau Federation, as the national farm bureau is named, was organized for the purpose of dealing with questions having a national scope. While the permanent organization was not perfected until March of this year, the fairness and clearheadedness of the leaders of the movement is so apparent, their attitude on national farm questions so conservative, that the organization is already recognized as a strong national force and promises to be of great benefit to the agricultural interests throughout the entire country.

"THE HEART OF VIRGINIA KEEP"

CHAPTER I.

Fifteen Minutes Flat.

The woman's voice rose to a scream. "You sell my husband another drink and I'll wring your neck for you! Maybe you think I can't do it—ha! Just wait! I got your measure, you rat! You rob a hard-working woman of all she's got and then send her husband home to thrash 'er. Try it just once more on me—just once—and I'll learn you some-'in'!——"

Thus opens the new serial story "The Heart of Virginia Keep," starting in the October first issue of WESTERN FARM LIFE, and it is one of the most interest compelling serial stories we have ever published.

Written by Edward Baird, author of "The City of Purple Dreams," a master in the art of story writing.

"The Heart of Virginia Keep" is a story of an American girl and all the scenes are laid in the United States. Every chapter contains a thrill—there is not a dull moment in the whole story. Every member of the family will enjoy it.

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Registry Association Is Slow.

I bought three registered Duroc Jersey sows last December with papers and sent the papers to the association to have them transferred to me on January 26, and have written them twice for the papers as I have sold one sow and have not heard from them. Please tell me what steps to take to get them returned. —C. W. T., Arapahoe County.

Several of the registry associations are crowded in their work and are very slow in returning the papers. However, they have been unusually slow in your case. The best advice we could give on that would be to just simply keep writing continuously until you get results. There is nothing else that can be done except that you ask the man from whom you bought the hogs to write also. I do not think there is any question but what you will get the papers, as I have known of quite a number of cases where there has been a delay of six months to a year in getting them through. The only reason for this is that they are crowded and no doubt do not take care of their correspondence in regular order in which it comes in. It is important, however, to remind them every now and then that they have neglected to send the transfers.—H. A. L.

Crops for Grand County.

I would like some advice on the best crops to raise in Grand county. We had a killing frost the other night; it nipped some of our potatoes. Will it hurt the tubers? Will berries do good up here?—C. T., Grand County.

Your section is primarily a livestock section and you should consider that as your leading industry. Barley, oats and rye are being successfully grown at that altitude, all of which are very helpful in the feeding of livestock. For your particular locality the Petkus rye has been recommended. As a silage crop I would suggest Russian sunflowers. They are being tried out at an altitude of 8,400 feet this year. They have been very successfully grown as high as 8,000 feet. This crop furnishes an abundance of feed for silage purposes and the result in silage has proven very satisfactory. You should be able to produce most any of the root crops. Of course, all but the potatoes could be used as a livestock feed. Your potatoes could probably be made a commercial crop to a certain extent. Cauliflower has been grown very successfully in the higher altitudes where the yields are excellent. I do not believe a slight nip such as you mention will affect your potatoes enough to stop their growth. It takes frost enough to practically kill the growth of the vine before the potatoes will be affected. I would suggest that you get in touch with the County Agriculturist, A. A. Croll, at Hot Sulphur Springs, who no doubt will be able to give you more specific information regarding the crops to grow in your locality.—H. A. L.

Concerning Line Fence.

A. and B. own land adjoining, but in different sections. In case the section line has not been declared open by commissioners, if A. erects a fence must B. furnish half of it? Must the 30 feet required to be left on A.'s side, or may the fence be placed directly on the section line? It is to be borne in mind the section line has not been declared open. —L. E. T., Weld County, Colo.

In my opinion if the fence is built as a line fence on the section line then A. and B. share the expense, and it may be so built. If the fence is built on the land of either of them it is not a line fence. Maudlin vs. Hanscombe, 12 Colo. 204, discusses a phase of this question which may interest you.—Hamlet J. Barry, 724 Equitable Building, Denver, Colo.

The farmers of Apache County, Ariz., sold their oats crop through their farm bureau, as an entire crop, and made considerably more money than they could have done by selling it a little here and there as individuals.

Trench Silo for Corn.

Can corn be successfully trench siloed without cutting it? Is it of as good feeding value? Could I mix Russian sunflowers with it? What depth would you make it and how long?—G. W. W., Utah.

The trench silo is being successfully used for beet tops and it has been used in a few instances that we know of for ensiling corn. However, for corn it is a rather difficult proposition and the crop must be quite green when put in. We are quoting the following statement made by Prof. H. M. Cottrell, who when he was in charge of livestock work at the Kansas Experiment Station, successfully ensiled corn in a trench:

"A man can put up ensilage even if he does not have a dollar to spend outside of the labor of himself and team. In 1889, while connected with the Kansas Experiment Station, I took a team to a knoll in the center of a corn field and with a scraper made a pit 30 feet long, 15 feet wide and about three feet deep. The green cornstalks with the ears just as they grew in the field were carefully piled into this excavation, alternating butts and tassels, so that the material would pack close and leave few and small air spaces as possible. A heavy two-horse roller was run repeatedly over the top of the green corn as soon as filling was completed. Four inches of straw was put on for a covering and this in turn was covered with 20 inches of soil. A ditch was run with a plow so that in case of rain or snow no water would get into the silage.

"This crude silo was opened in midwinter and even the leaves on the stalks had hardly changed color and the kernels were milk white. For years I put up each year 1,600 tons of silage in expensive silos where it kept perfectly, but I never saw better silage than that made in that hole scooped out in that corn field. The objection to such a silo is that it has to be constructed every year and it is difficult to feed the silage from it in stormy weather, or when the ground is frozen deeply."

We have also seen corn siloed in the bundle. A sheep feeder in northern Colorado some years ago built a pit silo and being unable to secure a cutter he piled the corn into his silo in bundles and packed it down well. It went through the process of fermentation and made a very good feed, being easily forked out. However, these are just experiments and where one would succeed another might fail. We see no reason why Russian sunflowers should not be mixed with corn either in the trench silo or in cutting it up and ensiling in the usual way.

World Wool Situation.

Reports from the United Kingdom indicate that the British wool industry is passing through the same sort of depression as the American. These reports show that there is a "want of confidence all round and that the public demand is small on account of the view generally held that prices will soon fall. Retailers have been clearing off stocks on hand and are not inclined to place fresh orders unless compelled to do so."

This situation has resulted in a general stagnation in the industry, which, coupled with the cancellations of orders and impending labor troubles, have caused the manufacturers to curtail somewhat the production of woolens and worsteds. Generlly, this means the elimination of night work.

Sufficient business is left to keep most firms going, according to the London Times Trade Supplement, though at present no new business is coming in, consequently the tone is depressing.

Meanwhile prices are moving downward, and there are complaints about the government policy of refusing to sell the stocks of wool in its possession, especially the medium and lower grades of crossbreds, except at prices far above the market. The statement is made that, in order to assist the marketing of the new British clip, the Director General of Raw Materials will not reduce the price of these qualities this year. Private dealers have been holding the lower grades of wool in the expectation that the continental countries, especially Germany, will soon be in the market for large quantities.

A statement of the stocks of raw wool owned by the British government on June 30, 1920, gives a total of 2,905,554 bales.

The London Times Trade Supplement states that "the scheme for control of wool proposed in Australia, to follow termination of the contract for sale to the Imperial Government which came to an end on June 30, appears to have been abandoned. It is stated that the Australian sales by auction will be resumed on October 1, and that there will be no government regulation or restriction compelling all wool to be first offered for sale at the colonial sales before being exported. If this is so, there is a chance of wool quickly finding its natural level."

Figures also indicate that while there will probably be a shortage in the production of wool this year, the carryover will enable manufacturers to meet all demands.

There are no official data on the wool production of the world, and therefore this estimate should be taken for what it is worth. The number of sheep in the world has slightly decreased according to the best figures available, and the estimate is evidently based on this reduction. It should be borne in mind that since the armistice there are large accumulations of wool, principally medium and low grades, and the world consumption is evidently smaller. The periodical states:

"The coming of July finds the world production of wool below requirements, while the market is steadily declining and thousands of bales are being 'passed' at the auctions, only, of course, to come up again on some later occasion.

"The world production for 1920 may be estimated in millions of pounds about as follows:

	Pre-war.	1920.	Remarks.
United Kingdom	120	100	Good clip; 3,000,000 fewer sheep.
United States	288	250	Good clip; 4,000,00 fewer sheep.
Canada	11	10	Good clip; rather fewer sheep.
Argentina	264	300	Many more sheep.
Uruguay	143	150	Rather more sheep.
Central Europe	70	35	Half the sheep only.
Mediterranean Europe	90	90	Little change.
France	75	60	Good clip; 3,500,000 fewer sheep.
Russia	380	190	Even lower figures are current.
South Africa	156	172	10 per cent increase estimated.
Australia	570	570	Little change.
New Zealand	200	220	10 per cent increase estimated.
Other countries	400	360	Southeast Europe fewer sheep.
*Woolly animals	50	60	A distinct increase.
Total	2,817	2,567	

*The term "woolly animals" relates to the designated in the Argentine and other reports. South American semi-domesticated animals so

"Assuming that the position immediately before the war was one of stable equilibrium, the present season is 250,000,000 pounds short of wool. But if Russia be left out of the question the next 12 months can carry on without any stinting of manufactures. There is none the less an absolute absence of margin which makes it most desirable that wool should be acquired promptly and at a figure encouraging farmers to keep more sheep."

Serious thought has been given to the possible utilization of part of the large stocks of wool on the Continent, with the result that a syndicate has been proposed to finance the marketing of wool to Germany, Austria, Czecho-Slovakia, and other countries where machinery is idle for lack of raw material.

Recently a conference representing the wool, cotton, and flax industries was held at The Hague, where a scheme was drafted which it is expected will cause a definite movement to the Continent of wool which has been accumulating in England, Australasia, and other sources of supply.—U. S. Bureau of Markets.

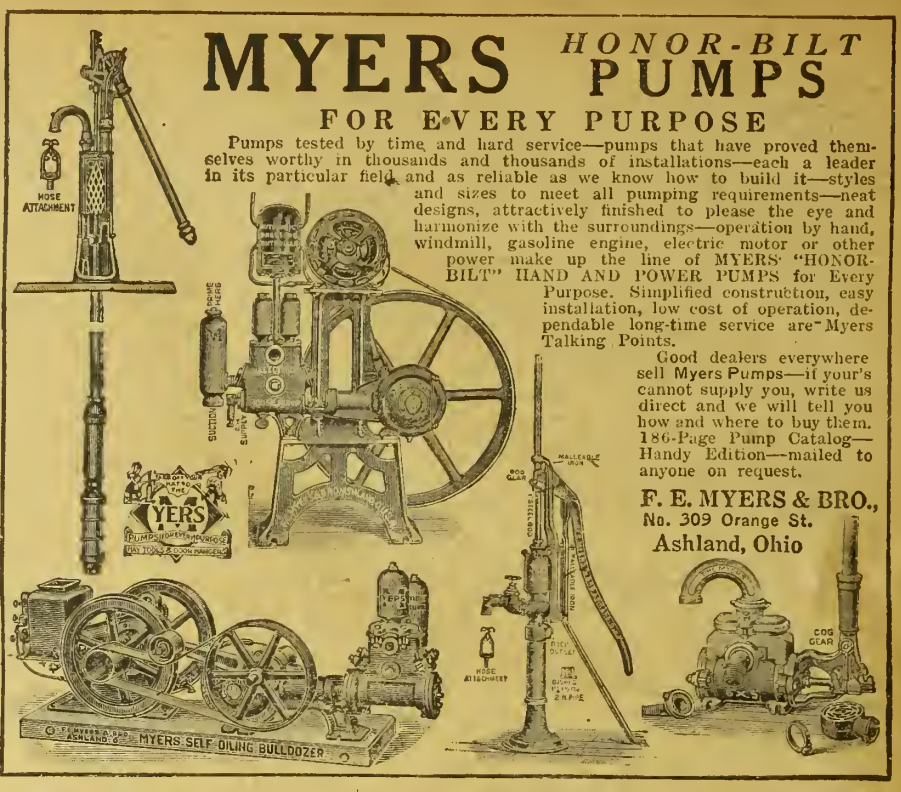
Co-operative Livestock Shipping.

The county wide livestock shipping associations are bringing results. It has been proven beyond a doubt that this is our best marketing system for small owners of livestock. They are developing a manager who is constantly studying market methods and even the larger owners in some counties have found it to their interest to take advantage of the shipping association experience and market their carlots through it. We have several county associations in Colorado, all of them showing good results. Larimer, Morgan and Kit Carson counties are now under that system with county managers.—H. A. L.

Judgment On a Homestead.

Can a judgment be served on a homestead where the judgment is taken before you get your patent for your land?—G. A. D., Utah.

If the entryman has not proved up the creditor cannot come against the homestead; if proof has been made the judgment can be served.



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The Heart of Virginia Keep.

(Continued from Page 8).

died out in a minor finale. They were followed by a sprightly air from a Victor Herbert operetta. She had played scarcely more than the prelude, however, when a servant entered to say:

"A young person, miss, is inquirin' most pertinent f'r Mr. Keep. I told him——"

Before he could speak further a shabbily dressed, stub-nosed boy of twelve or thereabout darted past the man and into the room. Snatching off his ragged cap, he confronted Virginia.

"You Mr. Keep's daughter—ain't you, lady?"

"Yes."

"Well, I got a note for 'im; and this gent"— jerking a blunt thumb toward the servant—"was for pinchin' it. 'No!' I says to 'im. 'My orders is: Don't give it to nobody 'cept Mr. Keep pers'n'ly.'"

"My father is not home now," said Virginia, sitting sidewise on the piano-bench. "But you may safely leave the note with me."

"No, lady." The urchin shook his head firmly. "My orders is, 'Don't give it to nobody 'cept Mr. Keep pers'n'ly.'"

"Very well. Bartley, let the boy wait in the hall until my father returns."

When the two had left the room Virginia returned to the library.

"My thoughts aren't on music," she complained in answer to Mattock's request that she play something more. "I can do nothing but wonder what is happening in town tonight."

"You mean the bank directors' meeting?"

"Yes. They are electing the officers for the new term, and I think papa is going to get the presidency. I can't contain myself, I'm so eager to know!"

"You will rejoice when you do, I'm sure," said Mattock conventionally. "Your father is decidedly the strongest man the directorate of the Second National has."

"Of course he is. Everybody knows that."

Virginia sat down in a double chair shaped like an "S" and crossed her knees.

"Now let's talk about you," she said, signing to him to sit opposite. "Tell me what you've been doing all day."

"I'm afraid I'd only tire you with the recital." He hesitated as he took the other half of the S-shaped chair. "My duties in court today were mostly dull and sordid—as indeed they are every day. The daily life of a State's attorney is not at all the humanistic round of interest some people think it is."

"But surely there are exceptions?"

"Yes, there are exceptions," he went on reminiscently. "There was the Morris gang, for instance—a trio of fiends I sent to the gallows last spring. The case was unusual inasmuch as the men were not brought to trial until many years after the crime, which, by the way, was of a peculiarly atrocious sort. If you think you can stand it I'll tell you what I know of the thing."

She nodded as he paused, and he narrated something of the case; but that her interest was tepid became plain when he had finished.

"Positively," she remarked, "I'd give anything to know what's happening in town this minute."

With a trace of impatience she glanced at a tall clock between two Elizabethan bookcases. The bronze hands united at eleven. "I can't think why papa doesn't telephone."

"If your father gets the presidency ——" began Mattock.

"Grant, he will get it!"

"——it will be the crowning touch to a wonderful career," he finished.

"One would need to delve deep into fiction before finding a parallel," she proudly declared. "Why, Grant, do you know that when papa arrived in Lexington twenty-five years ago, he came on a freight train and had less than a dollar in his pocket? He's never told me about it, for he never discusses such things with me; but it's so, just the same, and I'm proud of it.

"Later, after he had risen to the position of cashier in a Lexington bank, he met mamma, a gently reared woman of the old-fashioned South, and they fell in love with each other and were married—almost clandestinely, because there was opposition to the match."

"Real-life romance," Matlock observed.

"Wasn't it?" Presently, and with a slow wistfulness gathering in her eyes, she said in a subdued tone: "He became a different man after mamma died. Aunt Harriet has told me. He came here to St. Louis with the sole aim of making money. Goodness knows he has made it!

"I don't believe any two persons in all the world are more contrasted than mamma and papa were," she resumed after a silence. "Mamma, emotional, born to luxury, sheltered all her life, never coming in contact with the work-aday world; papa, virile, rugged, the son of a poor family in Seattle, having only hardships for his heritage, only grime and toil for his daily lot. I often wonder, Grant, if I haven't two opposing forces tugging within me."

Mattock's cold smile flitted gravely at the corners of his mouth.

"What a fanciful child she is!" said he to himself. "And to think that I once believed her old for her nineteen years!"

The cathedral chimes in the tall clock announced the quarter-hour. He said something about going. She made the customary protestations, and he settled back in his seat. The talk drifted easily into ordinary paths, where it tripped evenly along at a jog-trot until the soft-toned clock again spoke, when he murmured some commonplace about the lateness of the hour and rose to take his departure.

Going into the hall, they saw the boy of the stub nose and shabby apparel sitting alertly on the edge of a Louis XVI chair, wearing the rapt expression of one transported into fairyland. But his sharp little eyes brightened like a ferret's when he beheld them.

"You had best leave your message," Virginia told him. "My father may not be home until very late."

Again the firm shake of his head. "My orders is: 'Don't give it to nobody 'cept Mr. Keep pers'n'ly.'"

Mattock, noting Virginia's slight frown of displeasure, turned upon the boy sharply.

"Hand over that message!" he ordered.

"I won't!" defied the youngster, springing to his feet and backing away. "My orders is: 'Don't——'"

"You're making a fool of yourself," cut in Mattock, taking the envelope by force.

Pressing a coin in the boy's dirty fist, the lawyer propelled him, still stubbornly protesting, out of the front door.

Outwardly at least the missive merited its bearer. The envelope was of cheap quality. The superscription, written with a lead pencil obviously moistened and held in a shaking hand, was as follows:

"mr. alfred. hamp. Keep, esqwire,
westMoreland. place.
st. louis.
mizzoury."

Also it was thumbed and soiled, like the dog-eared page of a public library book, and there clung to it a peculiarly unclean odor.

Virginia held it gingerly away from her between finger tips.

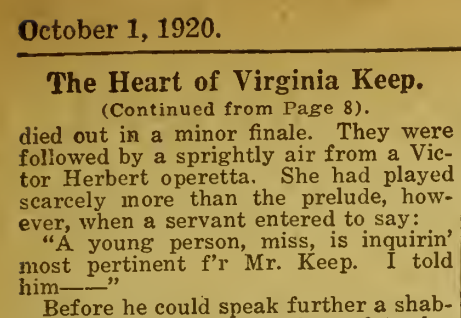
"It's only a begging letter, no doubt. Papa gets bushels of them. Well, good night, Grant! Wrap yourself up well. It's a raw, cold night."

With her right hand she helped him button his spring overcoat. Mattock, feeling her delicious nearness, scenting the delicate perfume of her hair and body, experienced a sudden amorous impulse to embrace her ardently, to kiss her, to fondle and caress her in palpitant passion. He certainly would never have done any such thing, however, even had not the letter, which she was holding in her outstretched left hand, fluttered from her fingers to the floor. He stooped, picked it up, and gave it back to her. Then, following his usual custom, he kissed her sedately on the brow and bade her good night.

Virginia, holding the door open, watched him until he reached the street. As she closed the door her slender shoulders moved the merest trifle and a sigh escaped her lips. Then somehow there flitted across her mind a passage from "Hamlet."

"'As chaste as ice,'" she thought, and walked slowly toward the staircase.

She placed the grimy epistle on the desk in her father's study, together with some other letters for him, and went to the dining-room to supervise the finishing touches to a tasteful supper spread for two. Having seen that the candles,



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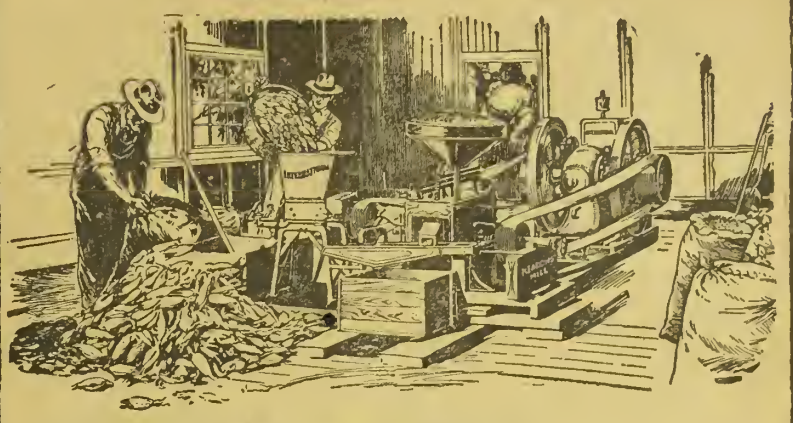

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"They must make good or we will"

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flowers, and other table decorations were properly arranged, she returned to the library, where she rustled through books and periodicals, with frequent glances at the clock.

Presently she selected a recent novel, and made herself comfortable beside a reading lamp. But in ten minutes she was standing at a front window, with the curtains drawn back, looking down the street.

The big, round, white lights of an automobile flashed suddenly into view, and the next minute a limousine stopped with shining importance at the curb outside. She sped into the hall and threw the door wide just as her father came toward the house.

CHAPTER III.
The Mysterious Letter.

Alfred Hamp Keep was like a powerful statue chiselled from granite by stern adversity. His rugged features and deep-set eyes, his heavy, cleft chin and strong jaw, the crow's feet at his eyes, the lines from nose to mouth, were symbolical of not only an iron will that seemed to radiate power, causing the air surrounding him fairly to tingle with nervous energy, but of frowns of fortune turned to smiles, of misadventures overcome. His hair, once black as his daughter's, was now snow-white, though his thick eyebrows, which nearly met, had lost none of their jetty sheen. The vivid contrast did not lessen the impression of virility, but rather enhanced it.

He closed the door behind him and held out his hand.

"Well," said he, and his lips moved after a manner of smiling, "you might shake hands with the president of the Second National Bank."

Virginia proudly took him by the hand, her dark eyes aglow.

"I'm proud of you papa—so proud!"

"But not surprised, I hope."

"No, indeed; it's just what I expected."

As they moved toward the library he interrupted her flow of effervescence with:

"Where's your mother, Virginia?"

"She went over to the Le Pages'."

"What's going on there?"

"Some sort of post-Lenten thing. It's the last of the season, I think."

As Virginia spoke the youthful radiance in her eyes was supplanted by a certain pensiveness, a look too often seen there when alone with her father, and therefore significant.

Keep's object in marrying a second time was primarily to procure a woman's care for his child, who had been left motherless at an early age. The discovery that he had essentially failed was offset by the realization that Virginia, in the absence of a mother's protection, had evolved a code of conduct all her own and developed a self-reliance capable of meeting at least ordinary emergencies. Perhaps she had been allowed too much freedom; perhaps she was a little too sure of her ability to take care of herself. If so, the iron wall of reticence which gradually, almost imperceptibly, had grown up between father and daughter since the mother's death rendered the situation doubly dangerous.

Bartley presently announced supper, and by the time they were seated at table the first fine edge had been worn from the topic of the bank presidency. Said Keep with studied carelessness:

"I suppose Grant was in tonight?"

She smiled at him across the shaded candles.

"How did you guess?"

He nodded at the diamond on her engagement finger.

"You weren't wearing that this morning."

Virginia put down her salad fork and held the jewel against the light, her head perked on one side, presumably to watch its fire. She did not look at her father.

"I—— How do you like it?" she faltered, vexed to know her face was crimsoning.

"It looks all right."

Keep rolled his eyes around to see if Bartley was in sight. The servant had left the room, so he said:

"I thought your engagement to Grant was 'only a tentative affair.'"

"So it is."

"Then why that?"

"The ring, you mean? I suppose it does lend an aspect of finality. But since Grant went to the trouble of getting it I thought I might as well wear the thing. It's such a beauty, too!"

"Then you've accepted him once for all?"

"Not necessarily. I still have the option of——"

"Virginia, I want to ask you something I should have asked long ago. Do you care for Grant Mattock?"

"Dear me! You quite take my breath away. Of course, I like him—more than any man I know."

"But do you love him?"

"I admire him. I admire his sincerity, his bravery, his determination to do the decent thing in the face of all opposition. I think I have always admired Grant, ever since I first met him."

"But do you——"

"Now, papa, I refuse to be pinned down by any such question. How can one know—definitely? There is no standard to go by."

"I should think you would know, all the same, if you loved him."

"Anyhow, I don't know," she decided, holding an olive daintily between thumb and forefinger, "so please let's talk of something else. I'm sure you haven't told me half of what happened at the meeting tonight, and I'm so anxious to hear!"

Bartley entering at this juncture with some ices, Virginia was given a respite from the subject. Yet it was she who revived it when she left her father at the door of his study, where he intended to write a letter before going to bed.

"Papa, you don't object to Grant as a son-in-law, do you?"

"Not in the least."

"And you do like him, don't you?"

"Very much. He is a thoroughly conscientious and fearless young man, and one of the few public officials who are not afraid to do their duty. He has shown that by going after the big offenders as well as the small. But, Virginia, my girl"—and she noticed the worried frown between his brows she so often saw there—"I wouldn't have you marry the greatest and finest man on earth unless you knew in your heart you loved him. Now run along to bed, dear. It's nearly one o'clock."

And with that he kissed her good night.

Entering his study, Keep switched on the electric "art lamp" in the center of the wide, flat topped desk, sat down and selected a cigar from a cabinet, which, like all the furniture and panelling of the room, was of rich mahogany. Before starting the letter he meant to write he laid the cigar, unlighted, upon a bronze ash tray, and ran through the mail lying on the green blotting pad.

When he came to the thumb-marked epistle he turned it over curiously before slitting it open with the silver paper-knife he held in his hand. He dropped the soiled envelope into a waste-basket, opened the single sheet of scratch paper it had contained—

And an instant later a low, involuntary gasp of horror broke from him, and his fingers clenched so convulsively that the cheap paper cracked. Then, very steadily, he picked up his cigar and lighted it with grave deliberation. Rolling it slowly between his lips, drawing in on it with short leisurely puffs, he became absorbed in the note that lay before him.

There were less than ten lines, pencilled by the same nervous, semi-illiterate hand that had addressed the envelope, but when some fifteen minutes later Bartley stopped at the doorway to see if he should put out the lights and lock up, Keep was still poring over them, forehead on the palms of his

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hands, fingers thrust stiffly through his thick white hair, his elbows resting heavily on the green blotting pad.

He was crouching rather than sitting in his chair. When he looked up, on hearing Bartley at the door, his face was the color of salt.

He dismissed the servant, speaking in a voice pitched an octave deeper than its usual conversational tone. A little later he got laboriously to his feet, the sheet of paper crumpled in his fist, picked the envelope from the waste basket, and started toward the open fireplace.

He moved as a man grown very old and infirm. He stirred the fire with a poker, tore the paper and envelope to bits and dropped them piece by piece among the flames.

Long after nothing remained save a last blackened wisp dancing merrily up the chimney, long after a silken petticoat had swished along the corridor, paused a moment outside the door, then rustled on again, he stood there, leaning for support against the mantel, staring beyond the blazing fire into vacancy.

* * * * *

When Virginia entered the dining-room late next morning she found her stepmother breakfasting alone.

The second Mrs. Keep was a slender, elderly lady with an aquiline nose, hair going grey, and thin, bloodless lips. Her maiden name was Priscilla Dibblee; her family one of Boston's oldest. Primly patrician, she retained many of the characteristics of her spinsterhood. One of her habits was to give each word she uttered a very precise and sometimes affected enunciation.

Priscilla Dibblee's marriage was emphatically one of convenience. In her old-maid-and-weak-tea days she had loathed matrimony; but times with her grew pitifully slim, and finally she yielded to what she termed her "worldly side" and capitulated for bread and meat—with wine and cake added to make the crime mor heinous.

Keep's desire was quite as unsentimental, though less illiberal. Both repented the bargain. They were no more suited to each other than skimmed milk is to port. She typified the old-fashioned, conservative, decorous formality of a bygone day; he the intensive, restless spirit of modern America.

She was poignantly ashamed of his humble origin, and his reminiscences before her guests often cut her to the fastidious quick. He, on the other hand, was as frequently annoyed by her aristocratic mannerisms. The outcome: Priscilla, with an unstinted check-book for the first time in her life, became a late-blooming flower of fashion; Virginia left to herself, waxed independent; and Keep had his business.

"I suppose papa has gone to the office," said Virginia by way of making table talk.

"I do not believe your father has risen, my dear."

"It's awfully late. Perhaps I had better go and see."

"Pray do not trouble yourself. I have already sent Bartley."

"It's not like papa to sleep late," remarked Virginia, immersing a plate of strawberries in rich cream.

"He may very probably desire to do so this morning, however. It was fully half-past one when I returned from the Le Pages' and he was still up. I noticed him in his study as I passed."

Virginia nodded, buttering a hot Vienna roll.

Mrs. Keep went on:

"I particularly wish to see your father so that I may congratulate him on the well-merited honor paid him last evening."

"You've heard, then. Isn't it splendid?"

"I read of it," corrected Mrs. Keep with a prim nod at the morning newspaper beside her plate. "Quite naturally I was, and am, very pleased."

Bartley appeared at the door, evidently much perturbed.

"Well, Bartley? Will Mr. Keep be down presently?"

"Y-yes—er, no, mem!" stammered the servant in some confusion. He was a young man and easily excitable, especially in the presence of Mrs. Keep.

"What am I to infer by that answer?"

"I—I don't know, mem—that is, I knocked persistent, mem, and gettin' no answer I made bold to enter the room, the door bein' unlocked, and I found—"

He paused, actually trembling.

"Yes, Bartley?" said Virginia encouragingly, with whose democratic manner the man was more at ease. "Tell us what you found, please."

He turned to her gratefully.

"Mr. Keep ain't in his room, miss. There's no trace of him whatsoever. His bed ain't been teched. H-he's—disappeared!"

"Nonsense!" exclaimed Mrs. Keep.

Bartley made a grotesque grimace of alarm.

"I'm afeared somepin' turrible's happened, mem. When I went to the study last night to get my orders I seen him settin' at his desk, and the look on his face——"

"You may go," interrupted Mrs. Keep.

When the servant had withdrawn, she placed knife and fork on her plate with precision, and, pouring out a second cup of tea, said primly:

"My dear, something has occurred to me. When I came in this morning the door of your father's study stood partly open, and through the aperture I saw him standing near the fireplace in an attitude suggestive of deep melancholy. I was on the point of calling to him when I noticed his face. My dear, his face was not pleasant to look upon. I scarcely knew him, really, he was so dreadfully changed."

Virginia could not resist asking:

"And did you call to him?"

"No," admitted Mrs. Keep, sipping her tea. "I thought he would rather I did not."

"Do you remember the time?"

"It was half-past one. The hall clock struck as I entered my room."

Virginia smiled. "I'm afraid our dark and sinister mystery is all a bubble. I was with papa until nearly one, and I never saw him happier."

"I dare say it amounts to nothing," conceded Mrs. Keep. "Your father very likely passed the night in one of the guest chambers."

"Why, of course. I'll go myself and awaken him."

Virginia rose, her breakfast unfinished, and left the room. In the hall she met Bartley, furtive-faced, nervous, apparently very frightened.

"Two men 've called, miss, inquirin' f'r Mr. Keep."

"Where are they?"

"I—I tried to stop 'em, miss, and that's a fact. I asked f'r their cards, but——"

"Where are they, Bartley?"

"They went upstairs, miss."

If Virginia was surprised to find two strange men in her father's study, she was more surprised, and a little shocked, that both had their hats on; and she was disgusted to smell the odor of alcohol. As she stopped on the threshhold she thought she saw one of them—a sandy-haired man, standing near her father's desk—hastily conceal something in his pocket. The other, a stockily built fellow with a red nose and heavy moustache, lifted the front of his derby hat a quarter of an inch and allowed it to fall back upon his head.

"Mr. Keep's daughter?" he asked civilly.

"I am accustomed," said Virginia, her eyes beginning to flash, "to seeing men remove their hats when entering this house."

She waited until they had complied with the hint.

"If you wish to see my father you will have to go to his office. He is never here during the day."

"We been to his office," said he of the sandy hair; and the red-nosed gentleman grinned. "Yes, we went there first off. Then we come here."

"You have had your trouble for nothing. My father cannot see you this morning."

"Then he's here?" concluded Sandy Hair quickly.

"I did not say so," she retorted.

"But you meant so," grinned Red Nose, flirting his walrus moustache.

The other added:

"Kindly tell 'im we're waitin'."

"My father," said Virginia, "will see you nowhere but at his office. I must ask you to leave."

She moved aside, stood waiting.

Sandy Hair muttered something below his breath and made a sudden movement toward an inner pocket; but his companion stayed his hand, counselling him with whispers. They stood conversing in undertones until they seemed to have reached a common opinion; then Red Nose turned to her and said:

"Sorry we had to disturb you, miss. We'll go now."

As they passed her at the door, the alcoholic odor assailed her nostrils afresh, and for an instant an overwhelming desire, experienced divers times in her nineteen years of life, swooped irresistibly upon her. She wished she were a man.

A minute later she had walked to her father's desk and was running her eye over the objects thereon. On the wide, green blotter were four or five opened letters, a silver paper knife, and a slender, partly smoked cigar. Suddenly, as if searching for something that should have been there, she shook out the letters, put them back, looked in the drawers and elsewhere, and finally gathered up the contents of the waste basket—four or five envelopes, all addressed either with pen and ink or by typewriter. But her quest was fruitless. What she hunted for was not there.

A quarter of an hour later she came downstairs, her fine black brows in a pucker of perplexity, her left eye slightly narrowed.

She sat down at the hall telephone, but before she could call her number the bell rang, and she unhooked the receiver to answer. Presently she became aware that her stepmother stood behind her.

"Who is it, my dear?"

Virginia placed her hand over the transmitter.

"It's the bank. They're asking about papa. I was just on the point of calling them up."

"Obviously he has not been to the office."

"No."

Virginia turned back to the telephone and removed her hand from the transmitter.

"My father is ill. He will be unable to leave home today."

Then she hung up the receiver and rose to meet the censure she knew was sure to come.

"You lied!" Mrs. Keep's thin face was white. "You deliberately lied! Why?"

Virginia lowered her eyes, her oval cheeks hot with shame.

"I had to, mother?"

"Why?"

"Papa never slept here last night. I've been to his room—to all the rooms. He's gone. I don't know where—or why. He——"

She paused. The parlor-maid had opened the front door to do something in the vestibule. Across the street stood Sandy Hair, leaning against a tree, drawing contentedly at a briar pipe and watching with a sort of detached interest the Georgian brick residence of Alfred Keep.

(To be continued.)

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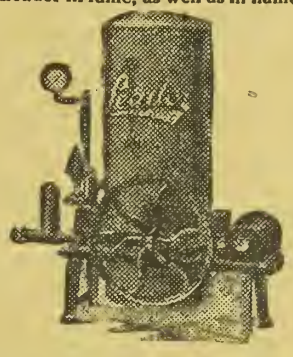

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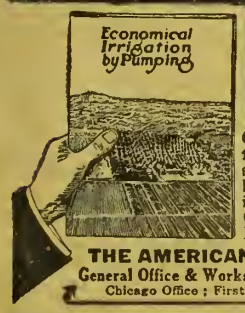

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The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Why We Need the Hot School Lunch.

By CAREY D. MILLER,
Assistant to State Home Demonstration Leader, University of Idaho Extension Division.

Pa warms the milk for the little calf,
Ma heats the food for the chicks;
They eat a hot dinner at noontime, too,
But my lunch is cold as bricks.

We have a hot lunch at our school now;
There's cocoa or soup that's hot as the dickens;
We fill up our cups as we pass along.
They've decided now we're as good as the chickens.

Do you know that there are 6,000,000 children, or one out of every four, in the United States suffering from undernourishment, and that 350,000 children die every year from poor or deficient food? Not from lack of food, understand, but improper food.

One line of help for the betterment of the malnourished child is the hot lunch at school—either a hot dish to supplement the lunch brought from home, or the entire lunch served at the school.

The greatest need for the hot lunch is found in the rural schools. There are hundreds of children in Idaho who leave their homes for the school buildings at 7:30 or 8 o'clock in the morning and do not return home again until 5 or 5:30 in the evening. They snatch a hurried breakfast in the morning, make the long trip on the school wagon, or go horseback or perhaps walk; have a cold lunch at noon, and make the return trip home having had no other food than a cold lunch that probably has been prepared in a hurry.

The children are growing and developing rapidly in the years from the first grade to the eighth, but they cannot progress mentally and physically if they do not have adequate food. A cold lunch now and then is not so bad, but a cold lunch five days a week, four weeks a month, eight or nine months out of the year, grows most monotonous.

Ask yourself how you would like to grow and study on a cold day with no warm food inside of you from early in the morning until late in the evening. Good school buildings and adequate equipment and teachers may be provided, but unless the children are in a good condition for study they cannot reap the benefits of those fine things. Many teachers testify to the fact that the children appear to be in better physical and mental condition for work when they have a hot dish at noon, that the discipline is easier at the lunch hour and that the children do better school work in the afternoon.

Much good work can be done toward establishing good food habits for the children by installing the hot school lunch. They learn something about the kinds of foods that are needed to make them grow, to build their bones and teeth, and to keep them warm and give them energy. As a result they are more willing to eat the kinds of food that are best for them.

In some of the schools in Idaho where the hot lunch has been installed, the hot dish is served only during the cold months and discontinued when the weather is warm in the spring and fall. Others serve the lunch for the entire school term, because the children want it and the teachers and parents believe it is worth while.

The children are eager for the lunch, they feel better because of having a hot dish and they like the party spirit of being served together. They are only too glad to co-operate, and in many schools the boys build tables and cupboards from dry goods boxes and the girls prepare the hot dishes. The children have made some attractive posters illustrating their ideas of the hot school lunch. One concludes from the posters and the letters which the leaders and agents have received from the children that the lunch is very popular with them and if it were up to them alone to decide the matter, there would be a unanimous vote for a hot school lunch.

The Department of Agriculture at Washington states that the hot lunch was installed in 2,929 schools in the north and west states last year through the efforts of the home demonstration agents. The school year of 1920-21 should see a great many more hot lunches installed in the rural schools of this and neighboring states.

If you are asking yourself, "How can we have the hot lunch in our school?" the problem may be solved as follows: If you have a farm bureau and a home demonstration agent in your county, your community may obtain the help of this agent in working out the plans. If you have a county agent or club leader, consult them, and they will make arrangements with the home economics department of the agricultural college to help you install the hot school lunch. The method of carrying on the work of preparing and serving the lunch is a local problem and will be worked out for each school with the interested parents and teachers of the community.

Will the children attending the school in your community receive a hot dish to supplement their cold lunches this year? They should, because:

1. It helps to improve their mental and physical condition and therefore
2. It enables them to do better school work.
3. They learn about the kind of food growing children should eat and
4. They learn good manners and how to co-operate in doing something for the good of all.

Some Salad Suggestions.

The following suggestions for salads are from the Home Economics Department of the Colorado Agricultural College and may be helpful to some Colorado housewife:

Head Lettuce with French or Mayonnaise Dressing—The leaves may be separated and piled up lightly on the head, cut into halves or quarters and served with French, cooked or Mayonnaise dressing.

Variations—Green peppers, pimentos or radishes may be added.

Leaf Lettuce—Sour cream dressing; shredded with cooked dressing (scissors may be used in shredding the lettuce.) Wilted with ham or bacon fat seasoned with salt, pepper and vinegar, 1-3 vinegar to 2-3 fat.

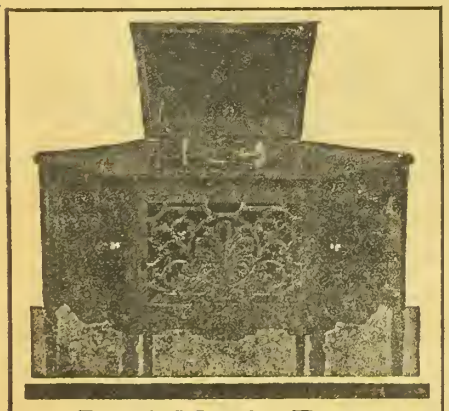
Beet Salad—Select uniform medium-sized, cooked beets. Remove center, fill with potato salad, cottage cheese or cold slaw.

Tomato Salad—Six medium sized tomatoes, 2 c. celery, cucumbers or onions (or mixture), 1 c. cooked or Mayonnaise dressing. Scald, peel and chill tomatoes. Take off top and scoop out the pulp and mix with the celery, cucumbers and onions. Combine with dressing and pile lightly in tomato cups. Serve on lettuce leaf with spoonful of dressing. Variations—Tomatoes may be sliced or quartered and served with celery, cucumbers, peppers as combination salad.

Cabbage Salad—Finely shredded cabbage may be combined with: Celery, radishes, onions, cucumbers or combination and served with cooked or Mayonnaise dressing.

Seasoned sour cream is often used. For an emergency salad, run cubbage through grinder, season with salt, pepper, vinegar and a little sugar.

Asparagus Salad—Cook asparagus until tender. Drain, salt, chill, arrange on lettuce leaf. Add cooked or Mayonnaise dressing. Strips of pimento and dash of paprika over top. Cauliflower may be prepared as above. Varlation—Run stalks of cooked and seasoned asparagus through ring of lemon or green pepper. Add French or cooked dressing.



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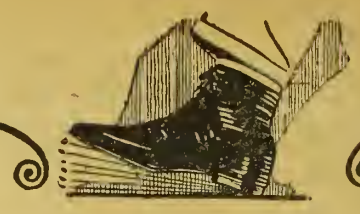

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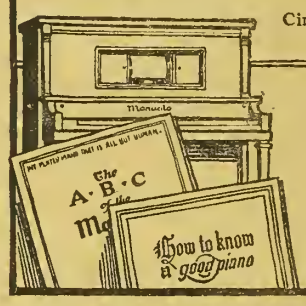

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Recipe for Corn Relish.

One and one-half dozen ears of corn. Boil in salt water four or five minutes and then cut from cob.

2 medium sized heads of cabbage. Slice and boil 10 minutes, add a little salt to the water.

2 quarts of vinegar.
2 cups sugar.
2 red pepper pods, chopped fine.
2 green pepper pods, chopped fine.
1 tablespoon celery seed.
1 tablespoon ground mustard.
1 tablespoon flour.
1 tablespoon tumeric.
2 tablespoons salt.

Put in one onion, ground up, if desired.

Mix the tumeric, mustard and flour with a little water.

Then mix all the ingredients and boil 20 minutes.

Amount of sugar and mustard can be increased or decreased to suit the taste.

Put up in Mason jars, seal hot.

Removing Ink Stains.

Ink stains are mostly dark, to be sure, but the mystery surrounding their removal need not be. For each and every one there is a simple homeopathic remedy. Some go the soap and water route; some the way of lemon juice and salt; and still others take the milky way.

With a few common household reagents, the housewife is equipped for a winning fight against her versatile enemy. Her chief weapons are: Lemon juice, common table salt, Ivory soap, oxalic acid, and Javelle water. The last is an invaluable adjunct to the laundry room for many purposes. It is rather expensive when purchased ready made, but is easily and inexpensively made at home by the following recipe:

1 pound sal soda;
¼ pound chloride of lime;
2 quarts cold water.

Mix thoroughly, let stand several hours. Pour off the clear liquid and bottle for use. Keep in a cool dark place. After using, rinse the garment with ammonia water until the odor of lime is gone.

Fountain pen ink requires two treatments, due to its peculiar makeup; first a dip in Javelle water to remove the blue part; then the remaining iron rust stain is removed by dampening with lemon juice, sprinkling with table salt, and holding over the steam of the tea kettle spout. The value of this method cannot be over-emphasized.

Blue writing fluid is successfully treated with milk. Time and patience will ultimately achieve the desired result.

Black writing fluids are usually of tannic acid origin. Oxalic acid will remove them.

Red ink succumbs quickly to a simple treatment of Javelle water.

When India ink becomes so intimately associated with your very newest garment as to seem a thing inseparable from it, try the gentle persuasive powers of pure soap and warm water—Clarice Carpenter, Colorado Agricultural College.

Mary's Sewing Box.

In Mary's letter to her friend Sarah, which appeared in this department in the issue of September 1, dimensions of a sewing box were given in incomplete form. What Mary meant to say was to make the box 30 inches high, 40 inches long and 30 inches wide, and divide it into two equal compartments. The width was omitted in her letter in the previous issue.

Miss Kalberer Wins Calf.

Colorado dairymen will be interested in learning that Miss Marie Kalberer, daughter of J. J. Kalberer of Broomfant in the Dairy Farmer bull contest. field, Colo., was the successful contest-This dairy publication of Waterloo, Iowa, recently offered two well bred bull calves, one a Jersey and the other a Holstein, in a subscription contest. The Jersey bull went to a dairyman in Illinois while Miss Kalberer was successful in winning the Holstein. Another Coloradoan who was a close contestant was Clyde Hall, son of Mr. and Mrs. Storrs Hall of the Western Holstein Farms. The bull won by Miss Kalberer is known as Dairy Farmer King Sylvia and is out of Carnation King Sylvia, the $106,000 sire. His dam is a 35-pound cow. Mr. J. J. Kalberer has a large herd of Holsteins on his farm at Broomfield, where the new bull will be kept.

Meat Curing Recipes.

The first essential in curing is to make sure the pork is thoroughly cooled. Meat should never be frozen either prior to or during the period of curing.

Brine Cured Pork.

Two of the commonest and most successful formulas for curing pork by the brine method are given below:

For each 100 pounds of meat use:

No. 1—	No. 2—
10 lbs. salt.	8½ lbs. salt.
3 lbs. brown sugar.	2 lbs. melted sugar or syrup.
3 oz. saltpeter.	3 oz. saltpeter.
5 gall. water.	2 oz. red pepper.
	2 oz. black pepper.

In using No. 1 the brine should be boiled until it is concentrated enough to float a good solid potato. After the brine is cooled, pack the meat as compactly as possible in a clean, sweet cask, then add the brine and cover with a heavy weight.

In using No. 2, mix all the ingredients together thoroughly. Rub each piece of meat with the mixture and pack in a cask. Enough liquid will be formed to cover the meat.

Never cure meat until it is entirely cold.

Leave hams in the brine from four to six weeks, according to their size, hang up to drip dry, then smoke.

Dry Cured Pork.

No. 3—	No. 4—
10 lbs. salt.	8 lbs. salt.
3 oz. saltpeter.	3 lbs. warm syrup.
	2 oz. saltpeter.
	3 oz. black pepper.
	2 oz. red pepper.

For each 100 pounds of meat use:

In either case of No. 3 or No. 4, mix the ingredients thoroughly. After the meat has cooled, divide the ingredients into three parts and rub into the meat at intervals of three or four days. Hang up for ten days or two weeks, then wash off with luke-warm water and smoke.

Smoking.

Many materials, usually varying with the locality, can be used for making the smudge. Corn cobs, cottonwood bark or quaking aspen give distinctive flavor in smoking. Hard wood is usually preferable to soft wood. Resinous woods are objectionable. A slow fire usually gives better results. Smoking requires 36 to 48 hours, but meat intended to be kept for any length of time should be smoked a longer period.—Earle G. Reed.

Our Fashion Service.

All patterns 12 cents each. Address Western Farm Life, Pattern Department, 1518 Court Place, Denver, Colo.

Read This Before Ordering: Patterns ordered through this magazine are mailed promptly from the factory at Brooklyn, N. Y., and arrive in 10 to 12 days from time order reaches Western Farm Life. Be sure to specify size and number of patterns. Write your name and postoffice address plainly to avoid delay. These patterns are handled at cost, as a service to our women readers. The price of 12 cents includes postage.

3159—A Pleasing Frock. Cut in sizes 2, 4, 6 and 8 years. For a 6-year size 3½ yards of 27-inch material will be required. Percale, gingham, chambrey, lawn, challie, serge and gabardine are attractive for this style. Dotted blue and white printed voile was used in the illustration.

3128.—A Popular Model. Cut in sizes 3, 4, 5 and 6 years. For a 3-year size, 3 yards of 27-inch material will be required. Serge, khaki, gingham, linen, velvet and corduroy are nice for this style. The blouse could be of different material than that of the trousers.

3318—3315—A Popular Coat Suit. Ladies' Skirt 3315, and Coat 3318, are combined in this model. The skirt is cut in sizes 24, 26, 28, 30, 32, 34 and 36 inches

waist measure. The coat is cut in sizes 32, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Wool velour was used in this instance with braiding for decoration. Serge, heather mixtures, taffeta, velveteen and satin could be used. The width of the skirt at the foot is about 1¾ yard. To make this suit for a medium size will require 7 yards of 40-inch material. This illustration calls for TWO separate patterns.

3342—Popular One-Piece Model. Cut in sizes 16, 18 and 20 years. A 16-year-size will require 4¾ yards of 36-inch material. The width of the skirt at lower edge is 1¾ yard. Jersey cloth in a new weave was used for this design. It is attractive in sports silk, taffeta, pongee, linen, serge, gingham, percale, or gabardine.

3328—A Good School Dress. Cut in sizes 8, 10, 12 and 14 years. A 12-year-size will require 3½ yards of 44-inch material. Plaid brown and blue gingham were used with facing of white drill embroidered in blue floss. The style is also attractive for calico, galatea, chambrey, repp, poplin, serge, checked materials, and novelty weaves. The closing is effected at the left side of the waist.

3314—A Comfortable Dress for the Growing Girl. Cut in sizes 12, 14 and 16 years. A 14-year size requires 4¼ yards of 40-inch material. The design shows the popular outstanding pockets, and one piece straight lines. It is good for velveteen, serge, satin, also for linen, poplin, gingham, pique, chambrey and combinations of materials.

3332—Popular Cover-All Apron. Cut in sizes 32, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A medium size will require 4⅝ yards of 36-inch material. Striped percale or seersucker, or gingham, chambrey, lawn, jean, drill, sateen or alpaca are good for this design.

Loaf Cake

Save this Dr. Price Prize Loaf Cake Recipe

½ cup shortening
1 cup sugar
2 eggs
1 teaspoon lemon extract or other flavoring
½ cup rich milk or thin cream
1 cup flour
½ cup corn starch
3 teaspoons Dr. Price's Baking Powder

Cream shortening well; add sugar slowly; add beaten yolks of eggs and flavoring; add milk a very little at a time; sift flour, corn starch and baking powder together and add; fold in beaten whites of eggs. Bake in greased loaf pan in moderate oven 35 to 45 minutes, and cover with white or chocolate icing.

A gloriously good cake—kept simple and economical by the use of

Dr. Price's "Cream" Baking Powder

Made with Pure Phosphate

The Economy Prices:
12 oz. for 25c
6 oz. for 15c
4 oz. for 10c

Contains no Alum—
Leaves no Bitter Taste

2984—Neat House Dress. A good model for gingham, seersucker, percale, lawn, flannellette, linen or drill. The sleeve may be in wrist or elbow length; roomy pockets are inserted under tabs on the front. Blue and white checked gingham with facings of blue chambray would be nice for this style; or figured percale with facing of white, or a plain color. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 5⅝ yards of 36-inch material. Width at lower edge is about 2¼ yards.

Fall and Winter Catalogue.

Send 15 cents in silver or stamps for our up-to-date **Fall and Winter 1920-1921 Catalogue,** containing over 500 designs of ladies', misses' and childrens' patterns. A concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various, simple stitches), all valuable to the home dressmaker. Catalogue price 15 cents; all patterns 12 cents each.

Eva Waterhouse, Hayden, Colo., and one day's rabbit kill.

Eva Waterhouse and Her Rabbit Kill.

Eva Waterhouse of Hayden, Colo., makes good use of her .22 caliber rifle. The above shows Eva and a string of rabbits which is her kill for one day's hunting. She is a member of the Routt County Girls' Canning club and she and her club mates are good fisher-maidens besides being huntresses. According to the Boys' and Girls' Club News published at the Agricultural College in Fort Collins, these Routt county girls are quite successful in the domestic arts as well as in outdoor sports. Each canned large quantities of vegetables, fruits and meats. Their list of canned products includes trout, venison, sage hens and blackbirds. Their leader, Mrs. Harkness, has a wonderful lot of ingenuity and perseverance. One day the club girls found Mrs. Harkness' little daughter Sarah, a child of three, putting her kittens under the barn and carefully piling stones in the opening so they could not get out.

"What are you doing, Sarah Jane?" asked one of the girls.

The reply was: "You girls have canned rabbits, sage hens and blackbirds, and next thing you will want to can my kittens, so I am putting them away."

"No," said a shrewd old farmer, "I don't know as noise or talking at milking time reduces the flow of milk—but it may make the job last longer!"—The County Agent.

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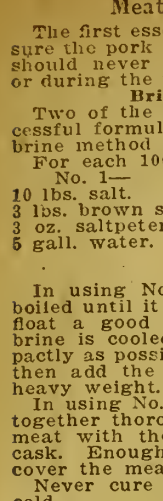

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Hand sewed, first grade factory, cut-down price. Direct to you at only $6.85 Made of the best Waterproof Mahogany calf leather. If these shoes are not just as we say, send them back. You do not lose a cent. Retail price of this shoe is $10.00. Built for work and dress at the same time. If you are sending money order or check do not include postage. Pay only for shoes. We pay postage.

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First grade factory, cut-down price. Direct to you at only $5.15. Retail price of these shoes is $8.00. Made of the best elkskin waterproof leather.

U. S. NATIONAL MUNSON ARMY SHOE CO., Inc.
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1 Chinese Sacred Lily, 6 New Purity Freesia, 2 Double Rosebud, 3 Buttercup, 2 Bowi and 6 Grand Duchess Oxalis. These 20 bulbs and Catalog

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Hyacinths, Tulips, Narcissus, Peonies, Lilies, Irises, Phloxes, Hardy Plants, Shrubs, Vines, Berries, in great variety. Also splendid window plants for winter. Seeds for Fall sowing, etc.

Large beautiful Catalog free

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We Specialize On Watches and Watch Repairing

Profitable Farm Poultry

W. E. VAPLON.

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, Western Farm Life, Denver, Colorado.

Eggs for Hatching.

Probably most questions have two sides; possibly the "league of nations" and "eggs for hatching" each have three. It's too bad that there is so little of the spirit of fairness between buyer and seller; it seems to be impossible for one to put himself in the place of the other, even after several years of intensely cultural civilization.

I have bought many eggs for hatching and have sold more; when I bought, I wanted all the chicks I could get, and when I sold I wanted all the eggs were worth. If I can judge buyers and sellers by myself I must conclude that as a seller I have always been more fair than as a buyer; consequently, in my opinion, the seller of eggs for hatching is as fair, or more so, than the buyer. We cannot get away from the fact that we want something for nothing; it's human nature, born in the blood, and no matter how hard we try to deceive others and even ourselves that we want to pay a hundred and two cents for every dollar's worth, at the psychological moment we forget our religion, buy ten cents worth of oil stock hoping it will advance to a dollar, or worse, trade on the necessity of a neighbor.

Poultry breeders make various guarantees: "A good hatch," or a "certain number of chicks," "all infertile eggs replaced," or in case of a poor hatch the order duplicated at half price, etc. Until a few years ago breeders would freely take the word of the buyer as to the number of infertile eggs, but many have been driven to asking that the eggs be returned. The fact is that compratively few people realize what is meant by that term and count everything infertile that does not contain a chick. Only perfectly clear eggs are infertile.

There is so much room for argument in the case of a poor hatch that controversies are bound to arise and hard feelings to exist. A breeder can hardly afford to promise a good hatch in an incubator in the hands of an unknown quantity; even the hen is often to blame for a failure. If the breeder would satisfy himself by hatching as to the fertility ond hatchability of his eggs before offering them for sale, then sell on the strength of that knowledge, the buyer might take or leave them according to the confidence he has in that breeder. I think I am safe in saying that the breeder wants his customers to get a good hatch and will do anything in reason to please him. Probably most of those who buy eggs for hatching are satisfied with a fair hatch, but some expect too many chicks and some think it a good time to make someone else help bear the burden of the H. C. L.

It all comes back to the one great factor of confidence, man in man; the thing so lacking but so powerful when practiced. If I could just believe that the other fellow is as honest as I am, as conscientious and fair, I could buy cheaper, sell easier, eat more and sleep better, feel younger, live happier, die comfortabler.—W. E. Vaplon.

Get Rid of Lice and Mites.

Lice and mites cause thousands of dollars of loss to the poultry interests each year. The presence of these pests has a marked effect on the number of chicks raised each year and the number of eggs laid by the mature hens. This loss can be prevented by proper and timely attention.

Lice—For the purpose of this article we can treat all varieties of lice under one heading, as they all yield to the same treatment.

Lice seldom leave the body of the fowl, feeding on the secretions of the skin and laying their eggs in the form of nits at the base of the feathers just beneath the vent of the fowl. It requires from five to ten days for these eggs to hatch.

Treatment—Owing to the fact that the lice remain on the body of the fowl it is necessary to treat each individual bird. A good dust bath of dry road dust, in which has been mixed plenty of wood ashes, helps greatly to keep down lice. Applying some good louse powder directly to the bird seems to be the most satisfactory method. It has recently been found that Sodium Fluoride is very effective in getting rid of lice, either applied as a dust or dip.

To dust a hen grasp her by the feet and apply a pinch of sodium fluoride to several sections of the bird, especially around the vent and under the wings. Be careful to rub the powder well into the skin. This powder will irritate the nose and throat of the person applying it, making it advisable to tie a damp cloth over the nose.

To dip a hen use a washtub in which has been placed several gallons of luke warm water. To each gallon of water add three level tablespoonfuls of the sodium fluoride. Catch the hen by the feet, with the other hand draw the wings up over the back and lay the hen in the tub on her side, taking care that her head is above water. Work the feathers till the liquid has penetrated to the skin in all parts. Do this only to full feathered birds. This should be done on a warm, sunshiny day so that the birds will not catch cold. Too free an application of the powder to very young chicks may kill them, or at least give them sore eyes for a day or so.

Mites—Mites feed by sucking blood from the fowls when on the roost or nest. They are seldom to be found on the body of the fowl in the daytime, preferring to hide in the cracks and secluded parts of the hen house. For this reason the most effective way to rid the premises of these pests is to treat the hen house.

Treatment—The house, nests and roosts should be thoroughly cleaned and sprayed. It does little if any good to spray the house and then neglect it for several weeks. Three sprayings, seven days apart, are advised to entirely get rid of mites. There are many sprays that will keep down the pests for a short time. Among the most effective are crude oil, crude carbolic acid, creolin, or any of the stock dips. Half crude oil and half kerosene works about as well as any of the cheaper sprays, or 95 parts kerosene and 5 parts of some good stock dip is successfully used by some poultrymen. The utmost care should be taken to see that the spray reaches every crack and nail hole in the roosts, dropping boards, etc., as these are the places most liked by the mites in which to hide and lay their eggs. The spray must be applied either with a small bucket sprayer or by the use of a paint brush.—N. L. Harris, Kansas State Agricultural College.

Turkeys May Have Roup.

Would like information in regard to the turkeys of one of our farmers here. He informs me that he has lost quite a number of his turkeys lately and the only cause he can attribute this to is that a hard lump, about the size of a marble, appears on the bird's head, throat, above the eyes or on the mouth, from which it finally dies.—L. G., Douglas County, Colo.

It is impossible to give you positive information relative to the trouble turkeys are having in your territtory. Our guess, from your description, would be roup; if the guess is good, opening the swellings and then swabbing with a disinfectant would give relief, and possibly cure. If there are yellow ulcers in the mouth, they should be removed and the sores resulting should be rubbed with stick nitrate of silver. Of course, all affected fowls should be isolated; and always, any ailing fowl should be examined for lice. Not much use to treat sick fowls if lice, mites and bed bugs are allowed to prey on them. Should the trouble with the turkeys continue, we would advise sending a bad case to the Veterinary Department, Agricultural College, for diagnosis.—W. E. V.

Women of Smith's Prairie, in Elmore county, Idaho, made 1,678 pounds of cheese last summer. Their experience made them desirous of more information on cheese making, and the farm bureau arranged for a visit by H. A. Mathiesen, assistant field dairyman of the university extension division.

Ninety per cent of the cherry crop has been signed up by the Emmett Cherry Growers' Association, which was organized under the auspices of the Gem County (Idaho) Farm Bureau.

At Your Service

It's a big job to render telephone service to this great Rocky Mountain region. It's a big territory, embracing as it does, over one-fifth of the land area of the United States.

It requires more plant, more miles of wire per unit of population than is required in any other portion of the United States. The reason lies in the fact that while our territory embraces 22 per cent of the land area of the country, it contains only 3 per cent of the population.

There is enough telephone wire in service in this area to circle the globe thirty times—over 746,000 miles.

Attached to this network of wires there are 300,000 telephones serving the patrons of our System.

About all the subscriber ever observes of this great System is the telephone on his desk, and that looks so simple, yet it contains 205 separate parts.

Nearly 50 million dollars are invested in the System—in buildings, switchboards, cable, conduit, poles, wire, tools, etc.

Seven thousand faithful men and women are employed to operate and maintain the System at a cost of over 8 million dollars a year for salaries and wages.

It's a great, comprehensive system of communication at the service of the people of the Rocky Mountain West.

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YOU CAN GET — WESTERN FARM LIFE, 2 YEARS

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Registered Holsteins
Bred right. Many of them closely related to the cow "Western Ascalon" that sold at the National Sale for $5,500. These cattle will be priced right. Must sell because of failing health. Call or write. W. B. & E. M. DOWNS, ROUTE 1, YUMA, COLO.

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Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

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EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

SEVERAL VARIETIES.

CHAMPNEY'S POULTRY YARDS—IF IT WEARS feathers we have it, or will get it for you. Write us your wants. 2057 S. Broadway, Denver, Colo.

MINORCAS.

FINE BLACK MINORCAS AND BUFF ORPINGtons for sale cheap. Frank A. Agnew, Southside, Omaha, Neb.

PLYMOUTH ROCKS

BARRED PLYMOUTH ROCK EGGS FOR SALE, $1.25 per setting of 15; $6.00 per 100. John M. Miscbke, R. F. D. 3, Loveland, Colo.

LIVE STOCK

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HOGS

BIG TYPE POLANDS, YOUNG BOARS AND gilts for sale. Write for breeding and particulars. Gad Barney, Haswell, Colo.

FOR SALE—REGISTERED BIG TYPE DUROC Jersey bogs from Prize Winning Stocks. Edgemoor Farm, Route 3, Littleton, Colo.

FOR SALE—DUROC JERSEY PIGS, BIG TYPE and good type; also Holstein bull ready for service. Geo. S. Turner, Canon City, Colo.

REGISTERED HAMPSHIRE BOARS, THREE last winter boars and four spring boars; big type, no better blood. Priced right for quick sale. Wm. H. Baker, Otis, Colo.

FOR SALE—REGISTERED HAMPSHIRE BOAR pigs of April and May farrow. Sired by Colorado Prince, also Colorado Prince No. 72591; age 17 months, weight about 350 lbs. Papers furnished. For prices write Geo. W. Wheeler, Otis, Colo.

BUY YOUR DUROCS AT WEANING TIME, AND make the big profits yourself. I have prize-winning gilts and boars a few weeks old sired by champions that should be worth several hundred dollars each this year. Write for prices. J. N. Caldwell, Willow Grange Farm, Littleton, Colo.

CATTLE.

FOR SALE—REGISTERED HOLSTEIN BULLS, 3 months to 1 year. C. A. Brigham, Fort Lupton, Colo.

FOR SALE—REGISTERED SHORTHORN HEIFer with heifer calf at side. Johnson Bros., Erie, Colo.

FOR SALE—NINE HIGH-GRADE HOLSTEIN cows and heifers. One purebred Holstein bull. E. C. Bundy, Divide, Wyo.

FOR SALE—TWO SPLENDID REGISTERED Holstein bulls and bull calves. Prices right. Pedigrees furnished on request. Norman R. D'Arcy, 3 miles north of Parker, Colo.

FOR SALE—ONE REGISTERED HOLSTEIN bull, 4 years old. Captain Tehec Beets, Reg. No. 245945 H. F. H. B. from Austin D. Crile, State College, New Mexico. Dam, Aggie Tehee Beets, No. 184286 H. F. H. B. In 1050 lbs. butterfat class. Three hundred dollars will buy the above animal F. O B. car either Dedman or Des Moines, New Mexico For further information write the Bank of Dedman, Dedman, New Mexico.

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AT STUD—PURE SAANEN BUCK, DIAMOND Jack 1750; fee $10. Geo. T. Cramton, 4912 Hooker st., Denver, Colo.

MILK GOATS—GOOD SAANEN AND TOGGENburg grades. Write your wants. A. Waldsberger, 1259 Inca st., Denver, Colo.

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FOR SALE—320-ACRE FARM, BY OWNER. E. C. Bundy, Divide, Wyo.

CALIFORNIA FARMS FOR SALE—WRITE FOR list. E. R. Waite, Shawnee, Okla.

IF YOU WANT TO SELL OR EXCHANGE YOUR property, write me. John J. Black, 33d St., Chippewa Falls, Wisc.

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REAL ESTATE WANTED—SELL YOUR PROPerty quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., Dept 11, Lincoln, Nebr.

OWING TO CHANGE OF OCCUPATION, I WILL sell my ranch and full blood Angus cattle and Percheron horses, or any portion of them. Address G. F. Lucore, Arriba, Colo.

FINE IRRIGATED RANCH NEAR DENVER—1,000 acres, 600 acres irrigated, best of water right; 225 acres in alfalfa; four sets of improvements. Priced $100,000, one-third cash. C. K. Davies & Son, 434 Foster Bld., Denver, Colo.

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SEND FOR NEW FARM, RANCH LIST, 100 bargains. A. J. Simonson, Cooper Bldg., Denver, Colo.

LIVESTOCK RANCH IN ARAPAHOE COUNTY, Colo., sub-dividing the famous old cattle ranch, Bo-Peep Meadows, about 4,000 acres in tracts. No. 1—1,240 acres, 100 acres sweet clover, 40 acres native hay, 60 acres now in alfalfa, 100 acres fine corn, balance good pasture; plenty of timber for shade and protection, watered by spring well, and windmill and all nicely fenced. A completely equipped ranch for dairy or purebred livestock. Good line of ranch improvements including water system. Located two miles from Deer Trail, on U. P. R. R. Price $45.00 per acre and exceptional good terms. C. K. Davies & Son, 434 Foster Building, Denver, Colo

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GUARANTEED ALFALFA SEED, $11.50 BU.; Sweet Clover, $15; Red Clover, $25; Timothy, $5; Sudan, $8 per bushel; Sugar, $17. Bonds accepted. Order now and save one-third. Meier Seed Company, Russell, Kans.

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FOR SALE—SAW MILL AND PLENTY TIMBER. E. S. Staples, Villa Grove, Colo.

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GOVERNMENT AND RAILWAY MAIL CLERKS needed everywhere; high salary; permanent positions. Particulars free. Write Modern Institute, 455 Charles Bldg,, Denver, Colo.

FIREMEN, BRAKEMEN, FOR RAILROADS NEAREST their homes—everywhere, $225—$250 monthly, experience unnecessary (which position?). Railway Association, Desk M6, Brooklyn, N. Y.

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HONEY.

DELICIOUS NEW HONEY, 10-POUND PAILS $2.50; 60-pound cans, $13.00. You will find this honey pure, clean and nice. A. A. Lyons, Fort Collins, Colo.

"THEBESTO" ROCKY MOUNTAIN HONEY, light colored, thick, fine flavored; per can, five pounds net, postpaid, anywhere west of Ohio river, $1.50. Send remittance with order. The Colorado Honey Producers' Association, Denver, Colo.

HATS CLEANED.

OLD HATS MADE NEW. S. M. BELWOOD, 1542 Court place, Denver.

VIOLINS.

VIOLINS WITH COMPLETE OUTFITS FOR SALE on easy monthly payments; five days free trial. Write Miss Bertha Mardiss, Shawnee, Kans.

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INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

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PATENTS—BOOKLET FREE. HIGHEST REFERences. Best results. Promptness assured. Send model or drawing for examination and opinion. Watson E. Coleman, Patent Attorney, 624 F st., Washington, D. C.

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BUTTER WRAPPERS—FINEST PARCHMENT, pound size, neatly printed, guaranteed. By mail promptly at 100, 60c; 250, $1.25; 500, $2.00; 1,000, $3.75; postage prepaid. Home Specialty Co., Middleton, Idaho.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

AUTO AND TRACTOR SCHOOLS.

THE DENVER Y. M. C. A. AUTOMOTIVE School guarantees satisfaction in teaching these well-paying trades: Auto and Tractor construction and repair, oxy-acetylene welding, vulcanizing (including truck pneumatics), and after Sept. 1, storage battery building. Day and night; School backed and supervised by Denver automobile industry. 600 students last year. Our object is service, not money-making. We charge less and give more personal attention. If you are mechanically inclined, write for descriptive booklet.

TRACTOR AND FARM IMPLEMENTS.

POWER HAY PRESS AND 12-25 AVERY TRACtor; both guaranteed excellent working order; $900; tractor alone, $600; real bargain. Owner, 2015 East 12th avenue, Denver, Colo.

SACKS.

100,000 SACKS FOR SALE, SECOND-HAND. Western Sack & Burlap Co., 2727 W. Colfax ave., Denver, Colo.

TANNING.

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

Among the Breeders.

Mr. C. J. Mather of Longmont, Colo., is offering some very excellent April pigs. These are choice Poland China boars, and are being offered at very attractive prices. These pigs carry the blood of Joe King and Tecumseh Wonder, the latter the champion of Missouri. Read the announcement of Mr. Mather in this issue on the Livestock pages.

The Range View Stock Farm at Henderson, Colo., is offering some Registered Duroc Jerseys. These Durocs carry the blood of the famous Sensations, Pathfinders, and other top-notch lines. Read the adv. in this issue.

Mr. F. L. Toliver of the Toliver Stock Farms at Fort Collins, Colo., is going to reduce the amount of stock carried on his place. This will be a most excellent chance to pick up some Big Type Poland Chinas. Toliver's stock has won many prizes, and is good from the breeder's standpoint as well as the show ring. Read the adv. in this issue of Western Farm Life.

The Win-O-Dee Farm of Pueblo, Colo., is offering some Registered Holstein cows. These cows are all bred to the great $35,000 bull, King Segis Pontiac Konigen. Many are daughters of Rag Apple Korndyke Veeman. This is a chance to get some good producers. Read the adv. in the Livestock Department of this issue.

A big Holstein Dispersal Sale is announced for November 10 at the Nels Anderson farm, two miles west of Niwot, in Boulder county, Colo. The entire herd of sixty head will be disposed of, including Sir Ormsby Skylark Pauline. Some excellent blood is included in this herd. Read the adv. on the Livestock pages of this issue. Col. Buchanan will be on the block.

The Larimer and Boulder County Breeders' associations have decided on December 13 as the date for their second annual co-operative purebred hog sale, to be held at the Agricultural College in Fort Collins. Duroc Jerseys and Poland Chinas will be offered, the selections to be made from the best breeding herds of the two counties.

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.

C. F. Burke, Mgr. Pueblo, Colo.

DICKENS SHORTHORNS

Get Into the Purebred Game

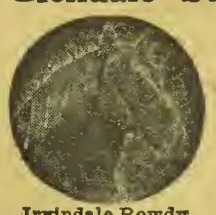
I have twenty head of five to seven months old calves that I will sell at a close price of $50 to $100—and good ones at that.

Also yearling heifers and bulls, cows and calves.

Write me. I need the money.

W. A. DICKENS,
Longmont, Colorado.

Glendale Stock Farm



Irvindale Rowdy Grand Champion Belgian Stallion Chicago, 1917, Denver, 1918 and 1919

Breeders of
BELGIAN HORSES
and
POLLED HEREFORD CATTLE

Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.

REGISTERED BIG TYPE DUROC JERSEY HOGS

Am offering some good Spring Gilts and Boars. Also some good fall gilts. Write for prices and breeding.

August F. Borgmann,
R. F. D. 4. LONGMONT, COLO.

Poland China Boars

I am offering a few choice April Poland China Boars at very attractive prices. They are by Joe King, one of the smoothest boars in the country.

Also one fall boar by Joe King, out of the splendid sow Long Giantess by Kirk, him by Tecumseh Wonder, Champion of the State of Missouri.

Anyone wanting a boar of the good stretchy kind, and high backs, can't go wrong on these pigs.

Also have a very limited number of gilts.

MAIL ORDERS SOLICITED.
SATISFACTION GUARANTEED.

C. J. Mather, Longmont, Colo.

Registered Hereford Cattle

BEAU ASTER Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER
Holyoke, Colo.

WIN - O - DEE FARM OFFERS

A rare opportunity to buy ten young Registered Holstein Cows at a reasonable price. These cows are due to freshen soon; bred to the son of the Great King Segis Pontiac Konigen, the $35,000 bull.

Included in this lot are several daughters of Rag Apple Korndyke Veeman.

P. K. HUDSPETH

Win-O-Dee Farm
PUEBLO, COLORADO.

Milking Shorthorns

25 HIGHGRADE MILKING SHORTHORN HEIFERS,

coming two and three years old, bred to Bonvue Royal. Will start to calve in February. Will include registered bull calf six months old; a good one; $2,500 takes this nice young herd, all from cows that are real producers over the pail. Also have two nice young bulls at reasonable price. Will sell two or three registered cows.

Jas. P. McInroy,
Larkspur, Colo.

Straight and Polled Shorthorn Cattle

Valentine's Last X12316 452005 at head of beef herd. Claywood White 427350at head of milk type.

STATE INDUSTRIAL SCHOOL
Golden, Colorado

RANGE VIEW STOCK FARM

Purebred and Registered Duroc Jersey *HOGS*

Bred gilts, young boars and pigs, all ages, for sale. Blood from Sensation, Pathfinder and other famous lines. Good stock at Rigbt Prices.

HENDERSON, COLO., ROUTE 1, BOX 49.
Phone Hazeltine 11-J-11.

BOARS

DO YOU NEED ONE? WE HAVE HIM.
POPULAR BRED. POPULAR PRICED.
GUARANTEED.

DALY'S DUROCS
CAMBRIDGE, NEBR.

COL. H. C. JENNINGS.
Purebred Livestock

AUCTIONEER

Also conduct Sales of Real Estate.

534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

WILLIAM UPP

Livestock Auctioneer

Purebred Hogs a Specialty.

DEER TRAIL, COLO.

Announcing

the Purchase of the

Edgemoor Herd

of Duroc Jerseys

formerly owned by

Caldwell Martin, Littleton, Colorado

by

STUART L. SWEET

Sweet Seed Farms, Carbondale, Colo.

Young breeding stock for sale

Milking Shorthorns

Public Sale, October 11, 1920

Wyldemere Farm at Littleton, Colo.

40 HEAD --- 36 FEMALES

Record of Merit Breeding from Herds of

J. B. Benedict, Wyldemere Farm, Littleton, Colo.
Pine Valley Dairy & Farms Co.,
Colorado Springs, Colo.
Bonvue Farms, Denver, Colo.

Good Individuals—All Young and Bred to Record of Merit Bulls.
For Catalog Address

C. H. HINMAN, Stock Yards, Denver, Colo.

LEACHMAN & SNOOK, Auctioneers.

HOLSTEIN DISPERSAL SALE

Wednesday, November 10th, 1920, 10 A. M.

TWO MILES WEST OF NIWOT, BOULDER COUNTY, COLO.
Nine miles Northeast of Boulder and Eleven Miles Southwest of Longmont.
Will meet morning trains at Niwot.

I WILL DISPOSE OF MY ENTIRE HERD, CONSISTING OF

18 Head Registered and 42 Head of Highgrade Holsteins

Including

SIR ORMSBY SKYLARK PAULINE 196969,

4 years old. Sired by Sir Ormsby Skylark, the sire of Dutchess Skylark Ormsby, the only cow in the world that produced 1,506.36 lbs. of butter in 1 year.

Dam—Netherland Pauline Burke, produced 27.8 lbs. butter at 4½ years.

We have a number of grand-daughters of Colantha Johanna Lad 32481. This is your opportunity to buy great foundation stock. The foundation of the grade herd is from a grandson of the King of the Pontiacs.

AUCTIONEERS:
COL. E. H. BUCHANAN, Denver.
COL. A. W. KORTE, Boulder.

Nels Anderson, Niwot, Colo.
OWNER.

HIGH CLASS JERSEYS

Our two cars of Jerseys bought in the east have been delayed on account of strikes. We expect them soon now. Some great cattle.

We have a few splendid bull calves, most of them by the great Majesty's Feather Lad; and we need the room, so prices are right.

Out of Duroc boars, but have a couple of bred gilts to go.

McClenahan & Dixon, Greeley, Colo.

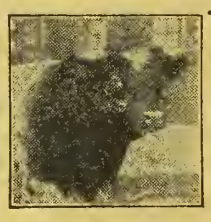
FOR SALE.

Sons of Sir Johanna Bess Segis

who combines in the closest degree the blood of **King Segis Pontiac Count** and **Piebe Laura Ollie Homestead King.** Send for their story.

PAHGRE VALLEY RANCH,
MONTROSE, COLO.

GREAT BARGAINS—REGISTERED HEREFORDS; DURHAMS (called Shorthorns), and ABERDEEN ANGUS; ages 1, 2, 3 and 4 years old. Prices $125 per head and up. Also Percheron and Belgian Horses from 1 to 6 years old. Prices $125 and up. Write for circular. One head or car lots. Breeding Guarantees with each.
ILLINOIS HORSE & CATTLE CO.,
Good Block, Des Moines, Iowa.



WATCH FOR THE SHORTHORNS

When you visit the fairs and shows make a careful study of the Shorthorn exhibits. The Shorthorn is the farmer's breed. The steers continually top the markets selling for more money per head than the steers of other breeds, because they have greater weight, combined with quality. Hundreds of Shorthorn cows have milk records from 7,000 to over 17,000 pounds per year. It pays to grow Shorthorns.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION,
13 Dexter Park Avenue **Chicago, Illinois**

MILK RECORDS

Do Not Replace Straight Bates Shorthorn Blood

FOR

Straight Bates Shorthorns are the "foundation source" of the Milking Shorthorns of England and America.

The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

MILKING SHORTHORNS.
All Cows Officially Tested. 125 in Herd.
Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.
THE BONVUE FARMS CO.,
Stockyards, Denver, Colo.

Verdun Fairfax, 547803.
FOR IMMEDIATE SALE.
Six young bulls of Fairfax breeding, $300 to $500. Two choice herd bulls, and Fairfax Heifers. Also few choice heifer calves. All stock disease free, and guaranteed.
Prompt Attention to Inquiries.
SNEFFELS LAND & CATTLE CO.
RIDGWAY, COLO.

Wallie Farm Reg. Holsteins

State Milk Record

Established by Mystic Polkadot Lottie, junior 2-year-old, 540.4 lbs. milk in seven days. Best day's milk 83.6 lbs. Fourteen other excellent A. R. O. cows developed recently. All records made without fitting or forcing.

A number of wonderful records will unquestionably be made on these cows at next freshening. Take advantage of this fact by buying a Wallie Farm bull calf now. A few 2-year-old heifers for sale.

Herd Sire KING JOHANNA SEGIS PONTIAC
"His sisters have broken over 100 world's records."

W. G. Foster, Owner, 4800 So. Penn.
Phone Englewood 122, Denver.

REGISTERED
JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.
H. J. VAUGHN, KIRK, COLO.

Glenrose Farm Herd

REGISTERED DUROC JERSEY HOGS.

Bred Gilts and Weaned Pigs. Also a few good boars for sale. All big-boned.

R. C. VAN SCOY & SON,
Highland Station, Route 5 Denver, Colo

F. L. TOLIVER'S
Big Type Poland China Hogs
Offered at Reduced Prices

Victoria—Sow and Litter on F. L. Toliver's Stock Farm.

To reduce my stock, I will offer different ages and sizes of my Big Type Poland China Hogs at greatly reduced prices. All stock is registered and the real big type from families of the real big-boned kind.

YOUNG BOARS—March and April, 1920, Farrow, each $40.00
GILTS—March and April, 1920, Farrow, each $40.00
BRED GILTS—Sept., 1919, Farrow, due to pig next month, each $65.00
WEANED PIGS—July, 1920, Farrow, each $20.00

I ship nothing but high-grade individuals and guarantee satisfaction. I have shipped stock to seven different states this year from Western Farm Life ads, and have more than given satisfaction. Now is the time to start in highgrade Registered Poland Chinas, or add a high-class young boar to your herd. Write today.

Scotch Collie Pups Registered — White Rock Chickens

F. L. TOLIVER STOCK FARM
FORT COLLINS, COLO.

Campion's Majestic Sunbeam and Beau Mischief Herefords

MAJESTIC SUNBEAM No. 364681. Calved February 25, 1911. Sire—Majestic the 24th No. 293221. Dam—Armour Sunbeam No. 85081. Majestic Sunbeam, grandson Imp. Majestic, one of the best and biggest boned Hereford bulls ever imported to this country.

BRUMMEL MAJESTIC No. 628435. Calved March 20, 1917. Sire—Majestic Sunbeam No. 364681. Dam—Don Amelia 2nd No. 135871. 56¼ per cent Anxiety, 31¼ per cent Imp. North Pole, Lord Wilton Grove the Third. 12½ per cent Imp. Majestic.

AMELIA'S BEAU MISCHIEF No. 557094. Calved April 27, 1916. Sire—Beau Mischief the 15th. Dam—Don Amelia 2nd No. 135871. Ninety per cent Anxiety blood. Secretary Kinzer says its almost impossible to write a better pedigree.

Sunbeam Farm,
8 Miles East of Wellington, Colo.

"They're Bred in the Purple"

The best types of Majestic Sunbeam and Beau Mischief Heifers and Bulls for sale.

The Big Bone Registered Poland China Sows and Gilts and Boars for sale at all times, also fullblooded bred gilts. Come and see them. Visitors welcome at "Sunbeam Farm" any time.

A. J. Campion
DENVER, COLORADO.

SHIP TO THE OLD RELIABLE COMMISSION FIRM

The Sigel-Campion Live Stock Commission Co.

And we will get you the High Dollar for your stock. Experienced salesmen in every department.

A. J. CAMPION
Pres. and Gen. Mgr.
EXCHANGE BUILDING
DENVER UNION STOCK YARDS.
Phone Main 8300.

REGISTERED SHORTHORN SALE
October 27, 1920
By the
Elbert Co. Shorthorn Breeders' Association, Elbert, Colo.
38 FEMALES 50 HEAD 12 BULLS

CONSIGNORS

CARNAHAN & SONS
CORNFORTH LIVE STOCK CO.
GLEASON & BLAZER
GEORGE GLEFFEE
HELGETH BROS.
PAUL JONES
LEWIS KIRK
C. A. MELBURN
CARL PETERSON
FRITZ PETERSON
ALGER PETERSON
PERRY WILLIAMS
M. WIGHT,
CLINTON WHITTIER
FRANK EVANS

Auctioneers—Cols. Snook, Leachman, Albion & Watson.
For Catalogue Address
DEWEY ALLAN CARNAHAN, Sales Sec'y
ELBERT, COLORADO.

DeWITT HEREFORDS
HERD BULL—MISCHIEVOUS JR., by THE HEIR

His dam is Mischievous 3rd, a full sister of BEAU MISCHIEF and the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

When You See a **GOOD SHORTHORN**
Think of Jay & Allan, Boulder, Colo.
STOCK OF BOTH SEXES FOR SALE.

Cheyenne——to——California
11 HEAD REGISTERED HEREFORDS
Shipped from our herd to Wm. Briggs, Dixon, Calif.
They were choice ones too
We can satisfy discriminating buyers.
Write for Photo "W" with Pedigree.
Hereford Corporation Cheyenne, Wyo.

L. G. Davis Herefords
ANXIETY BRED

Sires in Service:
The Great BEAU CARLOS 2nd
BONNIE WESTON, by Bonnie Brae 15th
WYOMING 4th, Champion Senior Yearling Denver, 1919.
Have for sale 20 Heifers, 10 to 15 months old.
Our own breeding.
We have a few High Class Yearling Bulls For Sale.
L. G. DAVIS, Saratoga, Wyo.

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
JOHNSTOWN, COLO.

JAMES PONTIAC DEKOL ORMSBY

Shorthorns That Milk
Victoria 228667

R. of M.—15,175 Lbs., 546.3 Lbs. Butterfat. Class A. Only a few cows of this breed exceed this record in Class A official test.
Bulls and Heifers for sale at Reasonable Prices.

The Pine Valley Dairy and Farms Company
Seeley G. Rose, Manager. COLORADO SPRINGS, COLO.

Earn Big Money!
Expert Mechanics Wanted In Auto & Tractor Business

E. J. SWEENEY, President

Farm by Machinery

The machine expert is the boss of creation today, whether in the city or on the farm. This Million Dollar Automotive School trains you to not only run and repair automobiles—not only to make and repair tires—not only to manage garages and agencies—BUT IT TRAINS YOU TO BE AN EXPERT POWER FARMER. On our great Tractor Farm you learn by actually handling over 18 different makes of tractors. You learn about all stationary engines and wiring. You learn the principles of lighting plants. How to fix up any motor or truck. Whatever you or your neighbors use in the way of mills, tractors, motor driven binders, in general all the machinery on the farm is simple and easy to the Sweeney Trained Man. Learning power farming is a short cut to more money—to less labor—to big production—to steady jobs at large wages. SWEENEY will train you in 8 weeks so that you won't have to leave the farm unless you want to.

Pick Your Job

Farm Mechanics	$100 to $200 per month
Motor Experts	$125 and up
Tire Vulcanizers	$125 and up
Chauffeurs	$100 and up
Welding Experts	$150 and up
Repair Men	$1.25 per hour
Truck Drivers	$35 per week
Taxicab Drivers	$25 per week
Trouble Shooters	$3 per hour
Salesmen	$3,500 per year
Tractor Engineers	$8 per day
Garage Manager	$3,000 per year

If You Are Discontented

remember that you can not succeed unless you like your work. But if you like it you find it easy to make good. If you are mechanically inclined write me today. But if not, don't bother me. You don't need books. You don't need education, but you do need a natural liking for mechanics. I teach you by WORK. You use tools, not books. I made a success out of a deaf and dumb man. But unless you are willing to get grease and grime on your hands you can't learn here. For this is the school of practical experience.

COME to the Sweeney School of Auto, Tractor and Aviation Mechanics if you really wish to be a trained Expert and to work on the most modern machinery. Come today for tomorrow never comes! Pack your grip and let's go!

The Sweeney System cannot be obtained anywhere else; just as Sweeney's Equipment is unsurpassed. Learn how to repair or make any piece of machinery by doing the work with your own hands under the personal instruction of experts. Train hand and eye and brain together until you do the job right. This is the celebrated Sweeney System that has turned out over 35,000 graduates and which was approved by the United States Government in sending me 5,000 men to train for army mechanical service. The idea that has built a Million Dollar Trade School and made thousands of men a success in life. We're ready for you—and a bigger, better job!

Facts About the Sweeney School

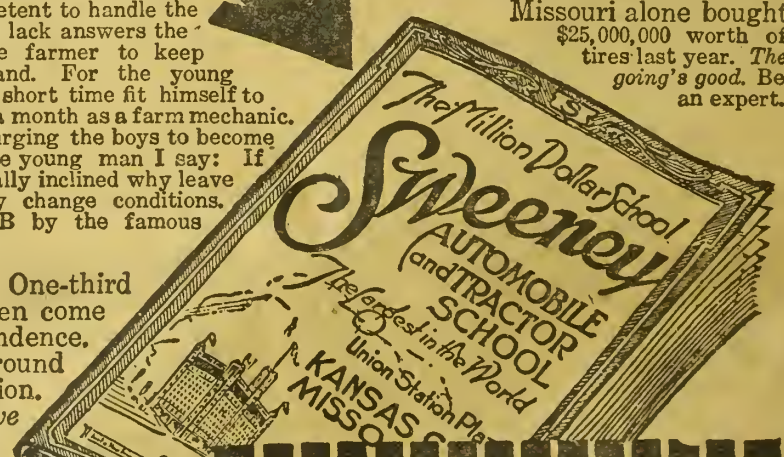
- Over 187 acres shop and operating space.
- Over 1 Million Dollars invested. Equipment alone worth over $350,000, of which $50,000 machine shop and aviation equipment has just been purchased.
- Over 1,200 students and 35,000 graduates.
- 250 instructors and employees; monthly pay roll $30,000.

Be Alive To the Times

The biggest opportunity of the day is in the line of mechanical farming. All that holds us back from tremendous production and tremendous wealth is the lack of men competent to handle the machinery. This lack answers the big problem of the farmer to keep his sons on the land. For the young man can now in a short time fit himself to earn $100 to $200 a month as a farm mechanic. Do your part by urging the boys to become mechanics. To the young man I say: If you are mechanically inclined why leave the farm? Simply change conditions. LEARN THE JOB by the famous Sweeney System.

$150 to $400 a Month

The Million Dollar Sweeney School is preparing men to earn from $150 to $400 a month in the Automobile and Tractor business. Take the TIRE business for instance. Big money in that. I teach you the whole business thoroly. How to sell. How to repair. How to make tires. How to take a few cents worth of junk and make a $35 tire. The state of Missouri alone bought $25,000,000 worth of tires last year. *The going's good.* Be an expert.



Get On A Train Let's go. One-third of our men come here straight off—without long correspondence. I guarantee to refund your railway fare round trip if you find a single misrepresentation. Simply tell me *when you will arrive* and you'll find your name on the bulletin board, class assigned, tools ready for you, rooms waiting you. Only white students accepted. Pack your grip and let's go. Earnestly yours,

EMORY J. SWEENEY, President

LEARN A TRADE—Sweeney
SCHOOL OF AUTO-TRACTOR-AVIATION
803 SWEENEY BLDG. KANSAS CITY, MO

EMORY J. SWEENEY, President
803 Sweeney Building, Kansas City, Mo.

Send me free your 72-page catalogue and Sweeney School News and tell me of the opportunities in the auto and tractor business.

Name _____

Address _____

I'm Coming _____

654.05
IN

The Only Agricultural Magazine Published in Colorado

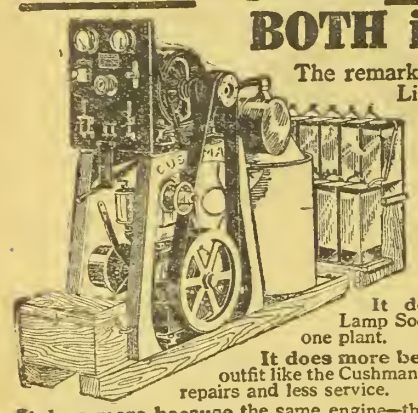
WESTERN Farm Life

Vol. XXII. *Denver, Colorado, October 15, 1920.* *Semi-Monthly*

TRACTOR SAVES TIME AND LABOR IN SILO FILLING

Cushman "Does-More" Light Plant

Electric Light and Engine Power BOTH in ONE Plant



The remarkable popularity of this Cushman Light Plant is due to the fact that it is a "Two-in-One" Plant—giving both Electric Light and Engine Power in one. The picture on left shows the complete plant belted for charging batteries and running a line shaft.

It "DOES MORE" for the Farmer

It does more because it gives you Light, Lamp Socket Power and Portable Engine Power in one plant.

It does more because there is less vibration with a belted outfit like the Cushman, and consequently fewer adjustments, fewer repairs and less service.

It does more because the same engine—the 4 H. P. Cushman All-Purpose Engine—may be used for work all over the farm, or be attached to binder, potato digger, corn binder, or other machines.

It does more because other machinery may be run from clutch pulley of engine at same time batteries are being charged by belt over flywheel.

You Know What Cushman Means

For twelve years the Cushman name has stood for Farm Engines of the highest quality, and is favorably known to almost every farmer in America. The Cushman Electric Plant occupies the same position in the light plant field—combining the highest quality with the greatest range of utility. The Cushman Light Plant is not a new plant, but it has proved its reliability by years of service on American farms. It is the same plant that was selected by the War Department for use at various Army Posts.

(350)

Light Is Cheap—Get It NOW

It's a wonderful thing to have plenty of brilliant electric light, everywhere throughout the stables, as well as in the home. Next to air, light is the cheapest thing in the world and one of the greatest blessings, yet thousands of farmers spend many of their waking hours groping in semi-darkness. Put in your Cushman plant this year and enjoy it. Send Coupon for information.

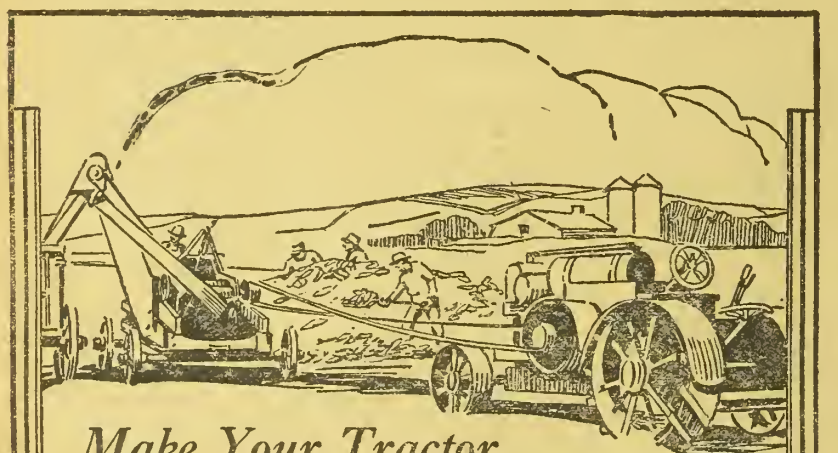
Cushman Motor Works
996 North 21st St., Lincoln, Neb.

If interested in Light Weight Engines ask for Book on Engines. Describes the Cushman line 4 to 20 H. P., weighing only 40 to 60 lbs. per horsepower.

CUSHMAN MOTOR WORKS,
996 No. 21st Street, Lincoln, Neb.
I am interested in a Cushman Light Plant. Would need one of about.....lights. Without placing me under any obligation, you may send me your book on Light Plants.

Name.....

Town.....State.....



Make Your Tractor Pay Steady Dividends

An idle tractor is idle capital—keep it working. Picking, shelling, shredding and grinding corn are a few jobs—silo filling, sawing wood, snaking timber out of the woodlot—these are a few other ways to keep your tractor profitably employed, besides plowing, harrowing, harvesting and threshing.

Properly lubricated, your tractor will stand up under constant service.

Stanolind Tractor Oil has been proved by years of service and exhaustive tests, the best lubricant for tractors of practically every make. It gives full protection when the engine heats—does not run thin. Under all conditions of operation, whether gasoline or kerosene is used, Stanolind Tractor Oil keeps compression tight and leaves little carbon.

If your dealer can't supply you, write us.

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STANOLIND
TRACTOR OIL

Good Hog Show at Greeley.

The hog show was the strongest feature of the Central Community Fair at Greeley, held the third week in September. About 125 head were shown, this stock being either in the hands of club members or the offspring of club pigs, which have been widely scattered on farms in the Greeley district. Club work is handled by Prof. F. A. Ogle, head of the Agricultural Department of the Greeley High school, who has done splendid work in training youthful hog breeders.

Lottie Sensation, a year-old sow shown by Donald Plumb, a club member, with her litter of six gilts and one boar, was the feature of the hog show. This young sow looks good enough for championship honors at the National Western in Denver next year. She was sired by Blue Ribbon Sensation, the noted herd header of Burke's Blue Ribbon Farm at Pueblo.

The Hampshires were in evidence here, as was the case at the Adams County Fair. This breed is becoming more popular in the state. Eldon Savits, Route 5, Greeley, showed 21 head of Hampshires. He has been breeding this type for three years and believes he has picked the market winners.

In beef cattle two noted ranches were represented, the S. L. W. Ranch of Kersey and A. J. Campion of Majestic Sunbeam fame. In Shorthorns the exhibitors were mainly of calf club work. The dairy show was small, considering the number of good herds in the Greeley district. W. A. Purvis of Johnstown was there with a string of Holsteins.

There was also a fair showing of draft horses, with the principal contribution from the farm of C. V. Owens.

In the agricultural exhibits the strong feature was wheat. Some exhibits were away out of the ordinary. An exhibit of irrigated Kanred made by Elmer Bliss, which got first money, tested 64½ pounds to the bushel. This was composed of large, plump berries and was far better looking than any of the Kanred brought in from Kansas this year. It was grown from seed obtained last season from the Hays Experiment Station. It is probable that this exhibit will go to the International Seed Show at Chicago in December.

There was some Turkey Red that tested 64 pounds and was grown by S. K. Boyd. This, also, was irrigated wheat. In the dry land exhibits Rev. W. L. Cline of Ault, showed Turkey Red that tested 62½ pounds.

An interesting feature in the agricultural division was the showing of seed potatoes grown in the dry land districts of eastern Weld county. The varieties were Triumph and Pearl. An effort is being made under the direction of County Agent Mason E. Knapp to develop seed potato production in the dry land districts to supply the growers on the irrigated lands near Greeley. As far as quality goes the dry land farmers have it and the question now is quantity production.

The Barnesville community made a splendid exhibit of irrigated and dry land products. There was a poultry show, which was pronounced as good as any ever put on in Weld county, and that is saying a lot.

Truck gardening is being pushed and among the exhibits that attracted attention in this line was one by Andy Epple, who showed thirty varieties of garden products, all of which are being grown for the market. The quality was excellent.

The Central Community Fair is a new institution that will probably become the nucleus for a county fair which will be representative of Weld's supremacy in agriculture. The fair has been held in the last two years in Island Grove Park, the grounds being ideal for the purpose. The buildings are, however, in a dilapidated condition. An effort is being made to work out a plan for co-operation between the city of Greeley, which owns grounds and buildings, and Weld county, for the organization of a real county fair. The usual midway attractions and racing program drew a good crowd on all three days, and there were stunts by aeroplanes, which proved a thrilling feature.—A. T. S.

Western Farm Life:

I am more than pleased with Western Farm Life. As a farm paper it excels all others. I do not need any premiums to encourage me to subscribe for same. I should have renewed my subscription sooner, only I had visitors from Michigan that I had not seen for twenty years. They kept me pretty busy for six weeks. Wishing your paper and brother Farmer Putnam success, I remain—D. Madden, Butte City,

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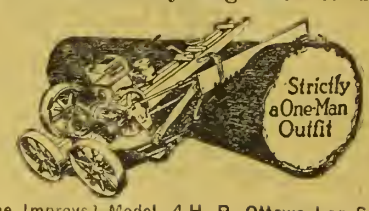

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Western Farm Life

A Western Magazine for Western Farmers and Stockmen

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State's Agricultural Progress Shown at Pueblo

KEEN COMPETITION FOR PREMIUMS IN LIVESTOCK AT STATE FAIR

H. A. LINDGREN.

THE livestock show at the Colorado State Fair was said by the management to be the largest and best ever. This was especially true in certain divisions of the show. The quality was on a par with any show ever held in the state. Practically all of the exhibitors of livestock were Colorado men. In the beef cattle section several new faces were seen, among them being Jay & Allan of Boulder, breeders of Shorthorns; Gillette Hill of Hillcrest Ranch, Denver, and R. P. Lamont, Jr., of Larkspur, Colo. Some of these men are old breeders, but are new in the Colorado field.

The beef cattle were a joy to look upon, showing distinctly the quality of stock among our Colorado breeders.

In the Hereford classes Dr. T. F. DeWitt of Denver captured the grand championship on Mischievous Junior. He carried away the same honors on females when the grand championship was awarded to Lady Ideal. Both of these animals are good enough for any herd in the country. Mischievous Junior is a large, well formed bull with good covering and plenty of depth. In the Hereford show Canary's Repeater 63d's calves made a very creditable showing. They are even in conformation and are of the type that will make money for any man. Gillette Hill, a new exhibitor in this division, has some Repeater stock from the Harris Farms. Mr. Hill is new in the breeding game, but is developing an excellent foundation herd. He was in the money several times.

R. P. Lamont, Jr., showed a very good Domino calf. The Colorado State Reformatory of Buena Vista, was represented with their Herefords, all of which made a very creditable showing.

The Shorthorns were exceptionally good. The herd of Maxwell-Miller of Steamboat Springs, Colo., has been showing in the middle western fairs where they have given a good account of themselves. The herd is of uniform color, which made them especially attractive to the casual observer. At the head of their show string was Princely Stamp, who was awarded grand championship of the show in this division. He is a large, growthy bull, well meated and good enough for any herd in the country. Jay & Allan of Boulder showed some very good animals and were successful in winning several blues on individuals and on exhibitors' herd; also on produce of cow. Other exhibitors making a good showing in this division were H. F. Harmon of Boulder and C. D. Hyatt of Monte Vista, Colo.

D. D. Barr & Sons of Sanford, Colo., were the only exhibitors of Aberdeen Angus. Their herd was worthy and was awarded all premiums for which they entered. This herd was headed by an excellent bull, Eran. Their best cow was Prize Nora.

In the dairy show cow class there were several fine herds shown. Holsteins, Guernseys, Milking Shorthorns, and Brown Swiss were the breeds represented. In the Holstein classes Spencer Penrose, Colorado Springs, won a large share of the premiums. In this show herd was the new bull recently purchased in Kansas. This bull is large, weighing in show condition about 2,350 pounds. He is straight in every way and what is best about him is that he is backed by some of the best blood of the breed. This bull, Sir Pietertje Ormsby Fobes, has an excellent production record back of him. His first five dams average over 1,000 pounds of butter in a year. His dam, Springbrook Bess, has three records above 1,000 pounds of butter in a year. His sire is Sir Pietertje Ormsby Mercedes 37th, who will be remembered as the $100,000 bull. Sir Pietertje Ormsby Fobes was grand champion of the show in bull class. In the senior yearling bull class W. G. Foster of Englewood showed King Johanna Cedarside Pontiac, a son of King Segis Pontiac Count, and won the blue ribbon. In the senior bull calf class R. P. Lamont of Larkspur won on S. O. S. Daffy Uneeda. The Modern Woodmen Home of Colorado Springs was represented by good individuals in the Holstein Friesian classes.

Two herds of Guernseys were shown, the exhibitors being W. L. Stone & Son and H. C. Kay, both of Pueblo. One herd of Brown Swiss made a very creditable showing. It is owned by Wenzel Black of Yuma, Colo. The cows are of unusual size and good conformation.

The Milking Shorthorn classes were fine and the competition keen between Pine Valley Dairy & Farms Company of Colorado Springs and J. B. Benedict of Littleton, Colo. Pine Valley won most of the firsts and group premiums. Mr. Benedict won first on produce of cow. This popular breed is rapidly gaining in Colorado and there is a great deal of interest among the farmers and stockmen in them. The demand for breeding stock is very strong and it is hard to supply the wants of Colorado farmers.

Hog Show Was Excellent.

One of the strongest features of the show was in the hog division. One of the old exhibitors remarked that it was the keenest competition that the state has ever seen. This was especially true of the Duroc Jersey breed. There were 278 hogs in this division and seventeen exhibitors. In the Poland China classes there were 60 head represented and in the Hampshires 42. There were a few Chester Whites, Berkshires, Mule Foot and Spotted Poland Chinas. Competition in the latter named breeds was not very keen, as there were but one or two exhibitors in a class.

The Blue Ribbon Live Stock Company of Pueblo, under the management of C. F. Burke, showed an excellent herd of Duroc Jerseys. They were successful in winning the larger proportion of the ribbons offered in this division. Others who showed up well were J. W. Brauer, Colorado Springs; Caldwell Martin of Littleton; Colorado Agricultural College; Prof. Geo. E. Morton & Sons of Fort Collins; E. G. Hardman, Pueblo; H. D. Rusler, Pueblo; Burt Hart & Son, Longmont; American Beet Sugar Co., Rocky Ford, Colo., and W. L. Stone & Son of Pueblo.

One of the strongest features of the Duroc show was the improvement in the feet. The judge, Prof. L. A. Weaver of Columbia, Mo., stated that he noted great improvement in this respect over previous shows held. Our Colorado breeders are rapidly appreciating the value of stretch and scale and are breeding the kind of animals that are most popular in the east. The grand champion boar of the Duroc Jersey show was Cherokee, a wonderful animal in every respect. He was deep sided, smooth, good feet and bone. He is owned by the American Beet Sugar Company of Rocky Ford. There were several strong contenders for this honor. Caldwell Martin's sow, Edgemoor Juno, won the grand championship in the sow classes.

In futurity classes the competition was very strong. In the junior sow pig class there were 33 animals shown. H. D. Rusler of Pueblo won first in this class. In junior boar pigs first was taken by the Blue Ribbon Live Stock Co. In the junior litter of four, the Colorado Agricultural College won first. In the senior litter of four, the Blue Ribbon Live Stock Company won first.

The quality of the Poland Chinas shown was equally as good as that of the Durocs, although the competition was not so strong. Mr. J. D. McGillvray of Boulder won grand championship on sow on Victory. The grand champion boar is owned by H. B. Payne of Littleton, Colo. Ellis Johnson of Fort Morgan, Colo., a member of the Boys' and Girls' Pig Club, won junior championship on his sow pig.

There were very few sheep shown. Colorado State Reformatory was present with a few Rambouilletts. Chas . H. Allis of Greenland showed the record-priced ewe for which he paid $700 at the Denver Ram Sale a few days ago. This ewe is probably one of the best ever brought to the United States.

In the horse classes there was not a great deal of competition. William Hansen of Longmont, Zang Investment Company of Broomfield, and Governor Shoup of Cathedral Rocks Farm, Husted, were strong contenders in the Percheron classes. Alex Yant of Rocky Ford had a large number of Suffolk horses on the ground. There were a great number of special premiums in the horse classes, but there was considerable complaint about classification. It was felt by the horse breeders that the State Fair management should offer more money for the better classes of registered animals and less in the grade classes. In one of the coach classes there were four horses entered, none of which were of strictly coach type. Very few standard bred horses, mules or jacks were shown. One of the outstanding animals of the horse show was Negro, a stallion belonging to the Zang Investment Company. Their mare, Jalapa, was the grand champion mare of the Percheron class. Governor Shoup's farm showed one good Belgian horse. Aside from this there was only one other Belgian shown in the registered classes.

King Johanna Cedarside Pontiac, senior yearling Holstein bull at Colorado State Fair. Owned by Wallie Farms, Denver, Colo.

More Room for Livestock.

The buildings were all crowded. A plan is on foot to build more permanent barns for the stock this coming year. That is, as far as can be done with the money available. New hog quarters were built last year, but this year they were crowded to overflowing, making it necessary to make further provisions for this division. The horse barn was well filled, as were the barns allotted to the dairy cattle. All of the beef cattle were housed in tents and these were blown to tatters in the windstorm of September 23.

The Colorado State Fair is rapidly coming to its own. We have the livestock in the state to make a showing that will compare favorably with other states. We are just a little bit slow, however, in taking hold of the showing game. One thing that would help to build the State Fair and make it still stronger in the livestock classes is a provision for county show herds.

Several of the counties of the state put on excellent shows of some particular breed of livestock, which should be shown at the State fair. Many of the men showing at the county fairs do not have enough animals to make it worth while to get up a herd. To take care of this class the county show herd would be a great help. They could band themselves together and select the best animals in the particular classes from all of the herds and ship them together. The animals could be shown in the individual classes and any premiums won would go to the owner. In addition to the individual classes a county herd classification would create a great deal of the right kind of competition. This plan is worthy of consideration and stockmen should think it over and see what arrangement can be made toward handling it in the future. There is no reason why Colorado cannot put on one of the best livestock shows in the United States with the quality of animals available.

Colorado is known all over the country as a sheep producing state. Still there are very few sheep shown at the State Fair. Some of the best advertising we have can be done by this route. There is no better way of letting the

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Freddie Got Hudspeth's Goat.
This is Freddie Waddell with a "Holstein" goat. Freddie is the son of Fred C., superintendent of the Dairy Division at the State fair, and is making a fine start as a showman. He went into the grand march in front of the grandstand every day, leading the goat. The photographer asked him if the animal was his and his reply was: "No, I ain't got no goat; this is Mr. Hudspeth's goat."

Review of Crop Exhibits at Pueblo

LOGAN AGAIN WINS ALL TROPHIES IN COUNTY DISPLAY

ALVIN T. STEINEL.

WE'LL have to hand it to Logan county."

That is the way the judges of agricultural exhibits might have spoken, had one asked them questions concerning the competition at the State fair on the products of the field. They did hand it to Logan county in a wholesale way—trophies, ribbons and cash. It was a repetition of last year's success, with some additions that made the victory more complete. The record is remarkable because the greater part of the exhibits in this display were grown on non-irrigated land. Logan's winnings included the $70 first premium for county making best agricultural exhibit; $70 first for county making best general exhibit (agriculture and livestock); silver trophy cup for best display of agricultural products, grains and grasses of standard varieties, and $40 first premium for best general exhibit of non-irrigated products by a community. The latter went to the Fleming community.

Logan county's plan of bringing its farm resources to the attention of the people is well conceived and artistically executed.

Community fairs are the foundation of it. These fairs precede the county fair, which is held at Sterling. At the county fair the communities make mass displays which are gathered from the best products shown in the community competition. This year eleven such displays were made at Sterling, Fleming winning the competition, as was announced in Western Farm Life of October 1. With all of this material to draw from an exhibit representative of the county is easily selected. Careful planning, long in advance of the State fair, is necessary to achieve success, but the effort is worth the time and labor involved.

County Agent J. E. Morrison supplies the initiative and lots of the energy, but he has the unstinted co-operation of the county commissioners and the community Farm Bureaus in putting the idea across. The result is that the thousands who view the displays at Pueblo come away impressed with the idea that Logan county's agriculture is highly developed and that its farmers are capable and progressive.

Montrose county gave Logan a run for the money, taking second place, with Rio Grande coming a good third. Montrose made a big display, but it came from a few farms, instead of being the selection from many, and the arrangement lacked the style and finish that placed Logan first. John Howell, who has done more for Montrose county and the Western Slope than any other individual exhibitor, was on hand with some of the grains of his own production that have won him fame in the past at the National Wheat show and the International Farm Congress.

The Rio Grande county exhibit, in charge of County Agent C. D. Hyatt, was a strong contender for second place in the competition for best general exhibit made by any one county, but Montrose was given the place. This class included livestock, horticultural products, pantry stores, etc., as well as crop exhibits.

Only seven counties entered the county competition. Weld, which is the premier agricultural county of Colorado from the standpoint of production, has not yet discovered that Colorado has a State fair. Boulder county, with one of the finest county fairs in the west, has neglected an opportunity to "show 'em" at Pueblo. If these and other counties will get into the game next fall there will be a warm contest. Logan county doesn't propose to lay down to any of them; they are sports out there in the shortgrass country. Prof. Alvin Kezer was the judge of farm products.

In the horticultural district contest the competition was as keen as usual, with about the normal number of displays. District No. 1, comprising the counties of Larimer, Weld, Morgan, Logan, Jackson, Washington, Sedgwick, Yuma, Phillips, Grand and Routt, found Logan and Larimer bidding for first place, Logan winning. There were no contenders in districts 2 and 3, the central counties of the Eastern Slope, which are not strong on fruits. Pueblo won easily in district 4, comprising the Arkansas Valley, San Luis Valley and San Juan Basin. District 5 gave Mesa county an easy task, Garfield county being the only other fruit growing section in that district. In District 6 there was a contest between Delta and Montrose, the former winning.

Delta was declared the winner also in the best display of fruits from any single county, with Pueblo county second, and Larimer third. In best display of named fruits shown by any Fruit Growers' association, Robert Craig of Delta won first premium. Prof. C. C. Wiggins of the Horticultural Department, University of Nebraska, judged the fruit.

One of the big lessons impressed by the crop exhibits is this: It is a mistake to limit our efforts at agricultural development to the plains section of the state. Our mountain sections have possibilities far beyond their present livestock activities. The State fair is bringing this to public attention by providing opportunities for competitive showing of grains, grasses, fruits and vegetables from the quality standpoint. Significant of this was the showing made in Turkey red wheat by Moffat county, in the extreme northwestern corner of the state, a region but lately opened to the homesteader. From this county came exhibits of Turkey Red winter wheat that tested 65 pounds. Both dry land and irrigated wheat was shown and on both the test was 65 pounds, these samples getting first premium. The dry land wheat was grown on the farm of County Agent O. F. Davis, and the irrigated on the farm of George Norvell. These premiums were won over the plains counties which were on hand with Turkey Red of exceptional quality, Logan county having an exhibit that also tested 65 pounds, but that did not quite measure up to the Moffat high altitude wheat.

Redlands Made Fine Showing.

That land settlement on the organized plan is beginning to show results was evident from an inspection of the Redlands Realty Company's exhibits. This company controls a large acreage at Grand Junction, which is being developed in farm units ranging from suburban tracts to full sized farms, comprising both irrigated and non-irrigated land. Settlers are not left to drift, but are helped to help themselves through various forms of co-operation. Experimental work is being done with crop varieties under company supervision, and the farmers get the benefit of results. Inoculation for legumes is one of the tests that is working out well. Variety tests of corn are being made. Surplus fruits and vegetables are being canned on the community plan, the company having installed two hotel size steam canners on their Redlands ranch. Wives of the settlers bring their fruits and containers to these plants and put up their home supply. Ten thousand jars were put up this summer, 4,000 by the company for use on their farms, and 6,000 for the homes of Redlands farm owners.

Fred L. Lucas of Denver, who has charge of the Doherty land settlement interests in the west, was at Pueblo personally overseeing the display. He has given much attention to the cropping program on the lands and he was pleased with the results of the first showing at the State fair. First premium on white dent and first on yellow dent corn went to the Redlands company in irrigated individual classes. The company also won out over Rocky Ford on Rocky Ford canteloupes—which is evidence of the West Slope's ability to compete with the Arkansas Valley in the canteloupe game. First premium on egg plant was another of the Redlands winnings. The company is making a specialty of this crop, for which conditions on the land seem to be well suited. The returns are big, some of the farmers having received as high as $1,500 to $2,000 gross per acre.

The company's fruit display was excellent, some varieties, especially the Delicious apples, being as big and well flavored as any grown in the Pacific northwest. First premium on box pears was a well deserved award for the Redlands exhibit.

John Howell of Montrose fared well in the individual classes on irrigated grains, taking the following premiums: Second on peck of Turkey Red winter wheat, testing 65 pounds; first on peck of Marquis spring wheat, testing 64 pounds; first on sheaf Marquis; first on peck and sheaf of Defiance wheat, testing 62½ pounds; first on peck of Durham and second on sheaf of Durham; first on sheaf of Rosen rye and second on peck of same variety; first on soft red winter wheat; first on peck of Swedish oats; first on peck of white oats; second on sheaf of Capitan oats; first on sheaf of Kherson oats; second on peck of California feed barley; second on peck and sheaf of Scotch barley; first on peck of white barley; first on peck of Hanna barley; first on peck of hullless barley.

Individual ribbons won by Logan county exhibitors included first and second on Minnesota No. 13 dry land grown corn; first on Minnesota No. 13 irrigated corn; first on Iowa Silver Mine; first on Ried's Yellow Dent, besides numerous ribbons on small grains for which the competition was strong.

Moffat county came up well in these classes. As already mentioned, that county secured firsts on Turkey Red wheat, both dry and irrigated, and in addition, first on Marquis spring wheat, first and second on dry land Durum wheat; first on dry land Rosen rye; first on Burbank potatoes, irrigated; first on Bliss Triumph grown on dry land, and many other ribbons in competition with counties where farming is older and more highly developed.

The northwest Colorado display included a fine exhibit made by Sarvoak Ranch of Twin Mesa. This ranch is owned by Jack Shafer. The name is derived from the typical shrubs of the region—the Sarvis bush and the scrub oak—Sarvoak. Ninety-three varieties of vegetables and garden truck were included, all grown at an altitude of 7,000 feet. The blue ribbon on Defiance dry land wheat went to this ranch. Routt county also carried away first on Swedish Select oats on the exhibit of Steve Shipka of Hayden.

The northwest Colorado delegation included G. C. Merrill, secretary of the Routt County Farmers' Union, who is acting county agent of Routt; Jack Shafer and S. J. Whitt of the same county; County Agent Davis of Moffat and County Agent Kroll of Grand, all of whom were active in giving information to farmers about the resources of the region that is to be given better transportation by the building of the Moffat tunnel. They talked the three tunnels, asking for other sections the same consideration that northwest Colorado wants at the hands of the voters in November.

A Blue Ribbon Live Stock Co. entry at the State Fair, winners of second prize in the Duroc Futurity.

Clubs at State Fair.

That our juvenile farmers are just a lap ahead of the general run of adults in the farming game was again shown at the State fair in Pueblo, where nearly 300 young people, who had records for excellency in their respective counties, spent four days as guests of the State Fair Commission. It was a profitable stay for all of them and it will bring returns to the State fair in years to come, when these young men and women, as farmers and wives of farmers, take their places in the communities for which they are fitting themselves by practical agriculture and home economics. Miss Maude Sheridan, State Club Leader; Walter Freeman, State Pig Club Leader; Miss Eunice Kennedy, Assistant State Club Leader, and several of the county leaders, including Mrs. Edwina Ramsey of Denver, Miss Amelia Alexander of Kit Carson county, Mrs. Elizabeth Linton of Boulder county, J. T. Robertson of Arapahoe county, W. S. Hill of Larimer county, assisted in supervising the camp. In all there were 35 chaperons, one for each group of ten young people.

Manager J. L. Beaman of the State fair has made the Boys' and Girls' clubs is pet "project." He took particular pains to provide for the comfort and safety of the young people. The procession of juvenile clubs was the big feature before the grandstand on Wednesday of fair week. Military order was maintained in camp and daily drill was given under the direction of Prof. Fred Huling of Central High school, Pueblo.

In the stock judging contest teams from eleven counties participated, Kit Carson winning with a score of 81.03; Adams county was second with a score of 80.3; Boulder third with 77.4; Montrose fourth, 76.4.

This score by Montrose was considered remarkable from the fact that the team reached the fair eleven hours late, due to interrupted train service, necessitating judging the stock in the stalls instead of in the judging ring. It was evident that this team would have made a better score had it not been for this unavoidable handicap. The team includes a girl—Ruth Dunlap.

Beef cattle, dairy cattle and two breeds of hogs, Duroc Jersey and Poland Chinas, were judged. There were three on a team. That Kit Carson county won is evidence of the fact that the teaching of stock judging is not exclusively a man's vocation. The Kit Carson team has been trained by Miss Amelia Alexander, County Club Leader, who since Kit Carson has been without a county agent, has carried on the business of that office in addition to her organization work among the young people. High man on this team and for the state was Royal Burkholder of Vona, with a score of 87.2; Merrill Linton of Boulder county tied with Leroy Smith of Logan county for second place with a score of 86 points.

Ellis Johnson of Morgan county proved to be the champion pig club boy, receiving a score of 97.5. This is his second year in club work with Poland Chinas. He exhibited a breeder's young herd. This young man also cleaned up in the open classes, receiving premiums over adult breeders of experience.

Second in the pig club contest was Ben Rodgers, son of President J. M.

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Wyoming State Fair Strong on Crop Exhibits

LIVESTOCK NOT REPRESENTATIVE OF STATE'S CATTLE INDUSTRY

T. S. PARSONS.

WYOMING probably has the most unique board of managers for its state fair of any state in the Union. The management of the fair is vested in the State Board of Charities and Reform. When the legislature two years ago removed the old board that had run the state fair many thousand dollars in debt, and placed the fair under the new management, many considered it a joke and prophesied failure. They could not conceive of the idea that the board which managed the charitable and penal institutions of the state could manage the state fair successfully.

Agricultural progress has been great in Wyoming the past year. Notwithstanding the high prices of seed and labor the acreages of practically all farm crops were increased and yields are uncommonly good both under irrigated and dry farm conditions. There is the largest acreage of corn ever grown in the state, about 12,000 acres more than last year, and there is a large acreage of potatoes, small grains and alfalfa. The growing of certified seed potatoes is receiving a good deal of attention as well as certified wheat and rye.

The agricultural exhibits at the sixteenth annual state fair held at Douglas September 14 to 17 were much larger in number and variety than ever before, and the quality was the best that the writer has seen in ten years' judging at the fair. Fourteen of the twenty-one counties in the state were represented by exhibits. The kind of work the county agents are doing in the various counties was shown by the exhibits made. Washakie, Goshen, Bighorn, Platte, Fremont and Sheridan had extensive displays of irrigated products. Converse, Crook, Weston and Niobrara counties had strictly dry-farm exhibits and several of the counties had exhibits representing both lines of farming. The Niobrara county exhibit showed a high development of the Farm Bureau work in that county.

In the general agricultural exhibit including all agricultural, horticultural and apiary products Washakie county won first place in the irrigated class, with Goshen county a close second and Platte county third. In the strictly agricultural display Goshen county won first prize, Sheridan county second, and Bighorn county third. Washakie county also won first place in the sheaf exhibit, Goshen county was first in the threshed grain exhibit, and Bighorn county won first for the best exhibit of fruit. The fruit display at the state fair this year was smaller than it has been for many years. The severe weather last winter cut down the fruit yield all over the state. A good exhibit of fruit was shown by the State Horticultural farm at Lander. Goshen, Platte, Converse and Natrona counties also had very good displays of fruit, considering the year.

Prizes for Farm Bureau Work.

In the dry land class Converse county won first on the general and dry farm vegetable exhibits. Goshen and Niobrara counties won second and third, respectively. The prize for the most attractive sign giving the name of the county and made of agricultural products was again awarded to Washakie county. The sign was an immense American eagle made entirely of wheat heads and standing on a shield made of wheat and colored beans. It was the work of John T. Weaver, the county agent. The special prize of $50 offered by the State Board of Immigration for the most attractive display representing Farm Bureau work made by a county agent was awarded to A. E. Hyde of Niobrara county. His exhibit of certified seed potatoes and Rosen rye was attractive. Other lines of Farm Bureau work in his county were also featured.

The exhibit of Wyoming grown corn was the best ever shown in the state. Many varieties of Dent corn, both in ear and in the sheaf, were shown, and the exhibit would have done credit to Iowa or any other state in the corn belt. It is the more surprising when it is known that none of this corn was grown at an altitude of less than 3,700 feet. Sunflowers were also shown with stalks 16 feet high and heads 15 inches in diameter. Corn and sunflowers are being grown extensively for silage and are doing much for the development and improvement of livestock and dairy industries of the state.

The woman's building was filled with fancy work and educational exhibits and the culinary display occupied an important place in the Agricultural hall. The Boys' and Girls' clubs exhibited gardening work, canning work, pigs and poultry. The demonstrations given by the Girls' Canning Clubs of the various counties were attended by large crowds. These farm boys and girls of today are learning the things that will make them the successful farmers of tomorrow.

The University exhibit was much better than last year. The work of practically every department was shown and the whole exhibit received much attention and favorable comment. The University band furnished a large part of the music for the fair. It was said to be the best band ever heard in Douglas.

The entertainment features of the fair were about on a par with former years. There is still a little too much of the "wild west" and "broncho busting" idea, which will have to be done away with before the fair will be the success that it should be.

Livestock Was Lacking.

The greatest criticism that can be made on the state fair at the present time is the lack of livestock exhibits. There is much good livestock in the state, but transportation facilities are limited and expensive. The premiums offered are also too small to attract breeders from a distance. The premiums should at least be sufficient to pay the expense of showing. Larger appropriations by the legislature and the cutting out of a large part of the wild west stunts, which are expensive, and diverting the money thus saved to the payment of premiums will help a good deal. One hundred dollars for a motor-cycle race and $20 for the best bull, does not average up fairly. The livestock entered in the various classes was limited and many of the classes had no entries at all.

In the cattle classes, J. J. Scott of La Bonte, and Dean Prosser of Tie Siding, Wyo., showed some good range Herefords. Gillette Hill of Denver also showed in this class and won championship. C. A. Hauf & Son, Glendo, Wyo., had a fine herd of Shorthorns on exhibition and took all the prizes in this class. M. S. Johnson of Douglas showed Holsteins in the dairy class. Mr. Johnson operates the Pershing Dairy at Douglas and has a very fine Holstein herd.

The horse classes were no better filled than the cattle classes. J. S. Carmin of Orin Junction, Wyo., showed thoroughbreds; W. S. Hinton of Douglas showed standard bred and American saddle horses, and E. P. and George C. Cromer of Gehring, Nebr., showed Percherons. A few cow horses and Shetland ponies completed the entries in the horse classes. There are several good horse breeders in the state and it is to be regretted that some of their stock cannot be shown at the fair.

Sheep Classes Fairly Filled.

The sheep classes were better filled than any of the other livestock classes. George Damrow of Roca, Neb., showed Oxfords and Hampshires and won first on Oxford ram. O. S. Wilson and E. B. Combs & Sons of Douglas also showed in the Oxford class. In Rambouillets the F. S. King Bros. Company of Laramie, Wyo., had a fine show flock and as usual took about all the premiums in sight. Robert Taylor of Abbott, Neb., showed some fine Lincolns and Leicesters and Hampshires. James Gallagher of Wheatland, Wyo., also showed Hampshires. The Wyoming Corriedale Sheep Company of Cheyenne and the King Brothers of Laramie had good showings of Corriedales. E. B. Combs & Sons of Douglas showed grade sheep and also had a good exhibit of Wyoming wools.

There were but few entries in the swine classes. A. D. McGillvray of Boulder, Colo., showed Poland Chinas. Burt Hart & Sons of Longmont, Colo., had some good Duroc Jerseys and a few Poland Chinas and Durocs were shown by the Pig Club members of Niobrara and Platte counties.

On the whole, the Wyoming State Fair may be considered a success this year. The daily attendance was the largest in its history, and there was marked improvement along most lines over any previous year. Much of the credit for the success of the state fair this year is due to the secretary, E. W. Ewel of Douglas.

Feeding and Fitting Livestock for Exhibition

SUGGESTIONS FOR BREEDERS WHO WILL ENTER WINTER SHOWS

CHARLES I. BRAY.

AT this time of year prospective exhibitors begin to look forward to the Stock Show in January. Experienced breeders have been fitting their stock for several months past. It is equally certain that there are some who expect to show who do not know just what to do to get their animals in shape. Anyone who attends fairs and stock shows regularly realizes that the reason many new exhibitors fail to win prizes is not because they have poor stock, but because they do not know how to fit and show it. The big breeders know this. They may be eminently successful as breeders or may be rich enough to buy any show animal they want, but unless they feed their animals to 100 per cent capacity they know they cannot be successful in the show ring.

Fitting is preparing an animal to appear at its best. With the meat producing animals fattening is the most important part of fitting. This holds true of breeding animals as well as market stock. While the breeding animal may never go directly to the block its value depends on its ability to produce meat animals that will fatten well. It cannot show this ability if it is thin itself. People say when they see show cattle in high flesh that they are "too fat for breeding purposes." No one knows this better than the man who has done the fitting, but he knows that there is no other way to exhibit specimens of his own breeding, and get the full advertising value that he wants for his herd. Horses and dairy cattle are not usually fattened as much as meat animals, because they are judged from other standpoints. Even with draft horses a good layer of fat covers a multitude of defects and adds to the weight and the breadth of body.

Beef calves that are good show prospects are usually put on nurse cows as soon as they can use extra milk. Other things being equal, the larger and fatter a calf is at show time the better chance it has to win. It should get grain as soon as it will eat. A good grain mixture might consist of two parts of ground barley, three parts ground oats, two parts wheat bran and one part oil cake. Where a number of calves are to get grain, a creep can be arranged in which they can be fed separate from the cows. A creep is a small enclosure, conveniently located, with openings only wide enough for the calves to go through. Calves will only eat two or three pounds of grain a day at first and will probably not eat over five or six pounds a day until late fall. By Stock Show time they will eat six or eight pounds. Corn is not fed in large amounts to young calves. They will do better if run on good pasture with access to clean water with grain night and morning. After midsummer, if not earlier, it may be advisable to separate the calves and cows except at night and morning feeding periods. When pastures run dry, corn silage or roots will help to keep the calf in good condition. The best prospects can be given separate box stalls. These should be cool, clean and well bedded.

How Champion Was Fed.

An excellent account of the feeding of the 1920 champion steer was given in Western Farm Life early this spring and will serve as a model for fitting steers. Farmers' Bulletin number 486 gives the following description of Fyvie Knight, grand champion of the International, 1908: "The steer was on full feed about ten months, and during the summer ran on bluegrass pasture at night and during the early part of the day. As cooler weather came on he was turned on grass during the day and kept in at night. He received at first a ration of bran, shelled corn, cracked corn, ground oats, wheat, silage and clover hay. The ration used just before entering the show was bran, 1 part; cracked corn, 3 parts; shelled corn, 4 parts; (fed at noon) ground oats, 7 parts; cracked wheat, 1 part; silage, 1½ pounds per day, with a light ration of clover hay."

Dairy cattle must be well fed but are not fattened like meat animals. The object of feeding is to put the animal in good healthy condition, and have the skin and hair soft and pliable. A satisfactory dairy ration fed in right amounts for milk production will keep the animal in right condition. Any grain mixture for producing milk will prove satisfactory, though a little more corn or barley may be advantageous for cows inclined to be thin. A good ration might consist of equal parts of ground oats, wheat bran and corn or barley. One or two pounds of linseed meal daily will tone up the digestive system and will improve the feel of the skin and hair. With good hay and a little roots or silage the ration will be complete. Such a ration will do for young stock or bulls, except that bulls are not fed much silage.

Look After the Hide.

Considerable attention must be paid to the skin and hair of dairy cattle. A dairy animal with a thick hide or wiry hair always shows at a disadvantage. Thin animals also do not exhibit good handling qualities. Improvement of the hair and skin is brought about by regular grooming, good feeding, blanketing, clipping and washing. Grooming aids in keeping the animal in health, in addition to improving the coat. Use a medium brush. Dairy cattle are usually blanketed to keep the coat thin. For late fairs they are generally clipped. The object of this is to bring out clearly the quality and dairy form. In some cases only the neck, under part of the body and the thighs are clipped, together with the tail, face, ears and udder. This makes the milk veins show up more prominently and makes the animal appear leaner and of finer quality.

There is considerable advantage in having a cow fresh or nearly so at time of showing. A large part of the score for dairy cows is on udder and milk veins, and these naturally show to better advantage when the cow is fresh. Cows are often taken into the ring unmilked to show the udder as large as possible, though the judge may order the cows to be milked out in order to show the quality of the udder when empty.

Draft horses are fed very carefully in preparation for show. A hundred or two hundred pounds of fat add a great deal to the appearance of a horse, giving him the massive appearance desired in draft type. The horse has a smaller stomach than cattle, and does not eat so much feed at a time. Grain is fed four or five times a day. If the teeth are in poor condition they should be attended to by a veterinarian.

Mr. Herbert Howarth, manager of the Elmwood Stock Farm at Broomfield, gives the following instructions on fitting: "Our feeds are divided as follows: Oats, bran and cut hay is given at 5 a. m., and water at 7 a. m.; at 9 a. m. fill hay racks and give small por-

(Turn to Page 10.)

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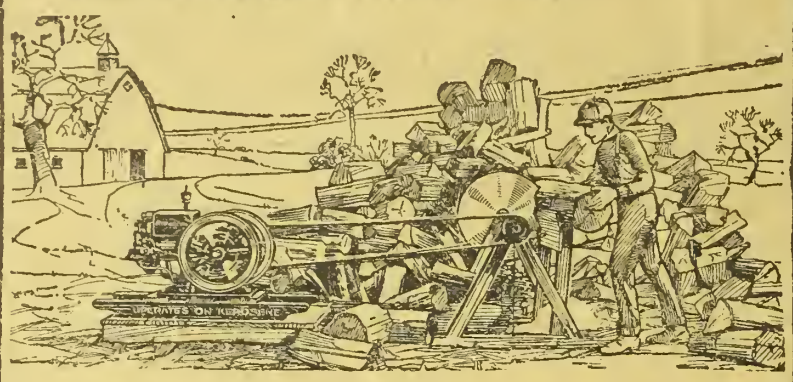

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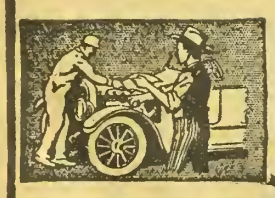

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The Heart of Virginia Keep

· BY EDWIN BAIRD ~ COPYRIGHT ·

AN angry woman is berating a stolid barman for selling drink to her besotted husband. Enter the proprietor, upon whom the woman turns.

"You," she cries, "You hound! You scum! You—you rat!"

He seizes the arm of the woman in a rough grip. She cries shrilly, and rushing to her rescue is a young man of 26, attired in workman's garb, about him a suggestion of abnormal strength and iron endurance. Notwithstanding marks of dissipation, his broad forehead and deep calm eyes denote an intellect of no mean order.

"Don't hurt that woman," he says quietly.

The saloon keeper glares at him and curses. His strong fingers tighten on the woman's arm and he draws back to strike her when a blow from the young man's clenched fist catches him on the point of the jaw. He falls heavily.

Gorkos, a Greek, who has been watching the young man, now rushes to the saloon keeper's rescue. The latter meanwhile rises, staggers behind the bar and procures a revolver. A third patron, a one-eyed youth with a weak chin, and the barman are watching the fight but taking no part. Clinched with the Greek, the young man sees Kraus approaching with weapon upraised. Seizing Kraus' right arm, the powerful youth struggles with his two adversaries, gets hold of the pistol and a shot rings out. Kraus crumples unnaturally against the footrail of the bar, a blackened cavity in his neck.

At that moment a blue-eyed flaxen-haired girl of perhaps fifteen comes down a stairway and stands staring in fright at the scene. A warning cry from the one-eyed youth causes the young man to turn just in time to avoid the point of a knife with which Gorkos, the Greek, is about to make an attack. He fires and the Greek sinks to the floor.

"You done 'em both in; you croaked 'em both!" gasps the barman, his face the color of dough. The young man passes out of the door, catches a passing furniture van, crawls in among the heap of rags and matting and is lost to sight.

* * * * * *

Twenty-five years elapse. Virginia Keep, daughter of a wealthy banker, is seated in the library with Grant Mattock, the young State's attorney, chatting but wondering to herself why she has promised to marry him. Now she is playing a selection from an operetta and a ragged boy is ushered in with a note for Alfred Keep, the father of Virginia. He refuses to part with it except into the hands of Keep. Told that the banker is absent he says he will wait. Mattock finally persuades him to leave the note and Virginia places it on a desk in her father's study. Mattock leaves, Virginia meanwhile reading and awaiting her father's return. At midnight he comes, announcing that his ambition has been achieved and he has been elected president of the bank. Mrs. Keep arrives home from a dinner party, catches a glimpse of her husband in his study and retires. In the morning Alfred Keep fails to come to breakfast and a servant finds that his bed has not been occupied and that he is nowhere to be seen. A telephone call from the bank asking for him brings the response from Virginia that her father is ill as she does not wish to alarm his associates.

Two strange men call for Alfred Keep at his home and before Bartley, the servant, can stop them, they enter the banker's study. Virginia finds them there and asks them to leave, saying that they cannot see her father except at his office. Later she sees them shadowing the house from across the street.

Whither?

Alfred Keep had vanished—vanished as completely as if some monster of the air had whisked him into nothingness. Not a trace was left behind to clear the fog of mystery.

The more Virginia tried to dispel it, the more impenetrably obscure it became. Having finally run down all possible explanations and finding that they led nowhere, she succumbed to hopeless bewilderment.

She verified her suspicion that the man with the red nose was watching the rear of the house; but some while later, from her sitting-room window, she saw him and his sandy-haired comrade conferring with a third man across the street. When she looked again all three were gone.

This heightened rather than allayed her apprehension. If the men were detectives—and she was convinced by now they were—they had departed, she reasoned, because they had learned where their quarry was to be found. At this point the supposition that detectives should be looking for her father was not the absurdity it might have been earlier in the day. Since morning a loathsome dread, starting as a speck in her brain, had grown gradually larger and blacker, until, as the day wore on, it assumed a size so appalling that her mind became inflamed, and extravagant fancy routed sober reason.

It was with a distinct feeling of relief, therefore, that she accepted an invitation shortly after luncheon to join several friends in a ride through the Creve Coeur Lake region. But before the party was well under way she pleaded indisposition and turned back, pointedly declining all offers of the young men to accompany her. By the time she was in sight of home she was driving her horse at a headlong gallop.

She tendered the heaving animal to a groom and hastened into the house, where the first person she encountered was Mrs. Dolan, the housekeeper. In reply to the girl's anxious question, Mrs. Dolan, who knew nothing of Keep's strange absence, said that to her knowledge he had not yet come home from the bank, and was surprised at the query, for the hour was only three.

Virginia started in search of her stepmother, but, entering the hall, changed her mind, turned back, and by the rear way, went to her room instead. The drawing-room was filled with women, and she was in no mood for social amenities.

When the last guest had gone, she went downstairs to intercept her stepmother.

Notwithstanding her belated craze for "society," Mrs. Keep's moral scrupulousness had lost little of its rigor. To her mind one of the unpardonable frailties was a lie. Her code of ethics recognized no such thing as a white lie. A lie was a lie. It could not be qualified.

Thus she had not forgotten, nor would she soon forget, Virginia's palpable falsehood that morning. That it had been told for another's sake by no means altered the pivotal fact.

During luncheon Mrs. Keep had maintained a frozen dignity. Now as Virginia met her near the foot of the staircase she saw that no thaw had set in, and from past experience she knew that the frost might hold indefinitely. She was conscious of a tinge of weariness as she reflected that never during that bitter period would any allusion be made to her deviation from righteousness, but that always it would be lurking in her judge's condemnatory thoughts.

"No news from papa?"

"None."

"Where do you suppose he is, mother?"

Mrs. Keep debated with herself whether to allow the conversation to bloom, or to nip its bud with a frosty abrogation. Before she could decide, Virginia repeated the question.

"In any event," Mrs. Keep answered guardedly, "there is nothing to worry over."

"I'm trying hard to believe so. But I can't convince myself that I'm needlessly alarmed—and I am alarmed, mother."

"Indeed!"

"Nobody seems to know where he is. He hasn't gone to the bank—that we all know; and I've called up his club and lots of other places."

"Your father has probably taken an unexpected business trip."

"But he wouldn't go without saying good-bye," protested Virginia. "Or without leaving some word. Or without notifying the bank."

Mrs. Keep moved toward the staircase. Virginia followed.

"M-mother—I'm afraid something dreadful has happened—happened in this house, without our knowing it, between one and one-thirty this morning. What shall we do next?"

Still thinking of the falsehood, Mrs. Keep laid one delicate, blue-veined hand on the newel-post and said stiffly:

"I am endeavoring only to overlook your father's boorishness in behaving as he has."

Whereat, with prim finality, she went upstairs to her bedchamber to refresh herself with a nap before dressing for dinner.

Virginia longed to confide in some one, longed to have her fears laughed at, her hopes reassured. But with the possible exception of Josephine Middleton, her dearest friend, who lived far out on West Cabanne Terrace, Virginia had no confidantes.

She decided to visit Josephine; but before ordering her motor car she went to the hall telephone and one by one called up again those places her father was wont to frequent. While listening for

the fourth time to the stereotyped "No; he hasn't been here today," she looked up to see little Philip Sturgis, the meek and nervous first vice-president of the Second National Bank, enter the drawing room, preceded by Bartley. As she went in to meet him she knew the time was come when her first small falsehood, like all first small falsehoods, would greedily exact its meed of additional prevarication.

Sturgis came forward with mincing step, smothered a discreet cough with his black-gloved hand, and after a conversational greeting, said politely:

"I hope I find your father improved, Miss Keep."

Virginia's questioning stare was an excellent counterfeit. She was glad her stepmother was upstairs.

"I—I don't believe I understand. Papa is not ill."

"Not ill? H-m. That's strange."

Virginia smiled forcedly. "But not disappointing, I hope."

"No, no," he said hastily, reddening a bit. "Only I was told at the bank you had telephoned he was."

"The boy who took my message evidently misunderstood me. I—— What I said was—I told him, Mr. Sturgis, that papa had been called to the bedside of Aunt Harriet in Seattle, who is ill." Virginia was scarlet to the temples.

"I see," said Sturgis, but his tone did not imply as much.

"Won't you sit down?"

"Thank you. I must be off, really."

He edged nervously toward the door, fidgeting his hat.

"Er—— Your father perhaps left some word for us, Miss Keep?"

Virginia shook her head.

"That's strange. There were certain matters——"

"I am sure he has written. Or telegraphed."

"H-m. Quite so. He did not, I assume, know when he would return?"

"No."

"H-m. I see."

When he had gone she walked into the library and came to a pause beside the reading table. Fitfully she began fingering a magazine lying there, but, though she looked at it assiduously, she saw nothing. Her left hand was clenched, and so were her teeth, yet her lips, which normally met in tranquil serenity with a piquant upward lift in the center of the top one, quivered as her bosom rose and fell with rapid respiration.

It was thus Aunt Lizbeth, her old Kentucky negro "mammy," found her. Lizbeth, who might have been any age between fifty-five and eighty, whose face was as wrinkled as the skin of a dried lemon and as black as the inside of an alligator suitcase, had been Virginia's nurse and bodyguard since babyhood, and the slightest hurt to her ewe lamb was a matter for grave concern. Not slow to surmise something amiss, she was quick with comfort. At her first words Virginia's dark eyes suddenly swam with tears.

Always in unhappy moments she had looked to Lizbeth for solace, but now she threw off the hand that fain would soothe and turned petulantly away, murmuring:

"N-no, B-Beth!"

She crossed the room swiftly, face flushed, her slender, supple body moving with a swing that seemed to crave a wider freedom, and stood before the fireplace where a log burned dully.

Presently she turned round, her moist eyelashes winking.

"Beth, get me a hat and coat—something plain. Bring a veil, too."

Lizbeth made no move to obey. A while ago in the servants' quarters she had heard gossip.

"I sees what," she croaked, perking her head wisely, twisting her apron between gnarled fingers. "I sees what. Now look yere, honey chile——"

"Beth!"

"Honey, I ax you please not get 'cited. You sho goner do sumpun rash ef you do. You's dat sort."

"Beth, do as I tell you."

"I done hear all 'bout dis yere fuss. It's sho 'markable. Ef yo' pa was a drinkin' man I could 'splain it. I 'member ol' Cunnel Hicks was allers hidin' hisself wif a demijohn when his licker times sot in. But yo' pa ain't dat sort. In all de years I know 'im I ain't never saw 'im tech a drap——"

"Beth! Obey me this instant!"

The old negress, beginning to sniffle, moved unwillingly toward the door.

"Yas, chile, I's goin—I's goin'. But gittin' 'cited ain't goner he'p matters none."

When she returned with a long tan coat and a veiled hat her mistress was scanning a railway time-table.

Deaf to Lizbeth's pleading, she donned the apparel and left the house. From Westmoreland Place she turned north in Kingshighway, boarded a street car, alighted at the Union Station, and hastened inside. In half an hour she came out, engaged a cab, and directed the driver to the L. and N. depot in East St. Louis.

At Eads Bridge occurred one of those fortuitous blendings of circumstances which happen every day in real life without exciting comment, but which in fiction generally seem improbable. It so befell that the bridge tollgate keeper on duty that evening was a gregarious man who knew Alfred Keep by sight and likewise his daughter. Upon entering the cab Virginia had lifted the veil over her hatbrim, and not until she was paying the bridge toll did she realize she had forgotten to lower it. Recognizing her, the man said affably:

"Howdy, Miss Keep. I seen your father cross this mornin'."

She all but exclaimed aloud.

"Yes," she murmured, hoping he had not noticed her agitation, "father is out of town for a little while." As he handed her the change from a five-dollar bill she asked carelessly: "Do you happen to remember what time it was when he passed?"

"Why, yes, Miss Keep," said the man, mightily pleased to be on such intimate terms with this young woman of "high society." "It was real early—about three o'clock, I should judge, or maybe a little after; and I was wonderin'——"

"Thank you ever so much!"

There were many questions she would have liked to ask him; but she could not wait, nor did she wish to arouse his curiosity. So she told the cabman to drive on, and immediately they had started she leaned out and urged him excitedly to make all speed.

She sprang from the vehicle almost before it had come to a full stop and sped down the station platform to the ticket window.

"You sold a ticket," she began somewhat breathlessly to the man behind the grating, "between three and four o'clock this morning to a heavily built man with white hair and black eyebrows and——"

"You'd better guess again, lady," he of the cardboards interrupted. "I sold no man a ticket at that hour. I was in bed and asleep."

She spent forty minutes searching for the ticket-vendor's partner. Finally she picked him up on his way to work and gave him a lift in her cab.

"I s'pose," he observed curiously when she had stated her inquiry, "that you're some sort of female detective—huh?"

Her negative assurance was emphatically positive.

"I dunno but what it'd be against the rules to tell," he meditated, observing her with appreciative eye.

"But if I were to reward you?" she urged, opening her purse.

The man shook his head in good-natured protest.

"Naw, you don't!" he laughed. "I'll tell gratis, free of charge. Yes, I did sell a ticket about 3:30 this morning to just such a party as you describe."

Virginia leaned toward him, her lips parted.

"Where to?" she breathed.

"Chicago."

She settled back against the cushion in unutterable relief. The horrid dread which all afternoon had been clamoring at the portals of her mind was still at last. If the man had said "Canada" she thought she should have screamed.

She asked presently:

"Did he seem nervous—worried?"

"He looked scared; hunted, you might say. And his hand was that shaky he couldn't hardly pick up the change I gave him."

Virginia felt a strange, gushing impulse to follow her father that night. But quickly it passed. After all, nothing could be gained by going to Chicago. Seeking a person—particularly a person who presumably wished to hide—in that seething caldron would be as quixotic as hunting a lost seashell in the Atlantic Ocean. No, clearly there was nothing more to do.

Accordingly, having thanked the booking clerk and put him down at the station, she gave the cabman her address and sank back, tired and spiritless, in the lumpy seat.

Arrived home, she was met in the hall by Lizbeth, who flourished a yellow enveiope in violent alarm.

"It's one o' dem telegraphs! Don' open 'er too quick, chile! Oh, my Lawd, sumpu' drebful done happen sho!"

Virginia, standing near the door, tore open the envelope. Within she found a single line:

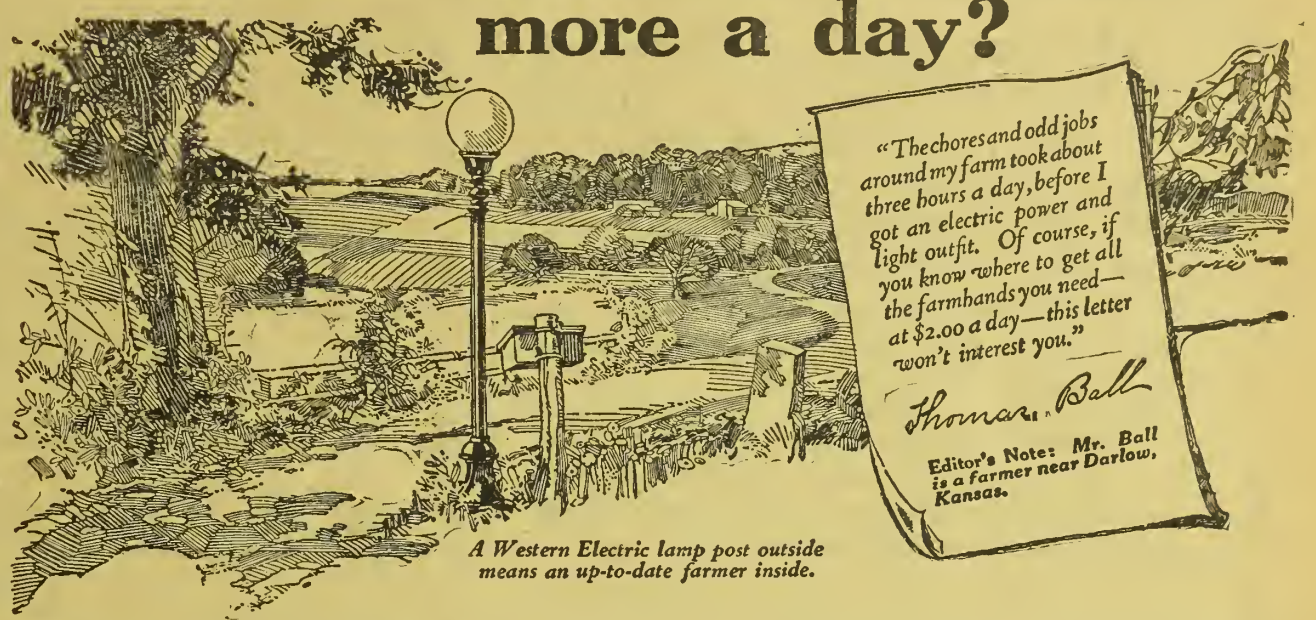
"Will write tomorrow and explain.

"A. H. K."

She folded the despatch slowly, thoughtfully; then quickly opened it and

(Turn to Page 12.)

Could you use 3 hours more a day?



A Western Electric lamp post outside means an up-to-date farmer inside.

"The chores and odd jobs around my farm took about three hours a day, before I got an electric power and light outfit. Of course, if you know where to get all the farmhands you need—at $2.00 a day—this letter won't interest you."

Thomas Ball

Editor's Note: Mr. Ball is a farmer near Darlow, Kansas.

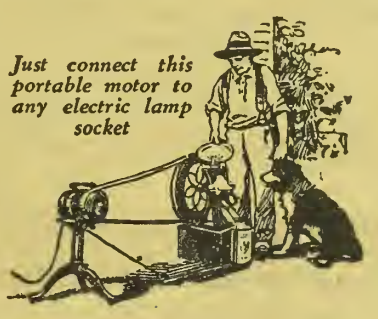
"As a rule we farmers don't give much thought to the value of our time. But we suddenly realize that time is worth money, when milking the cows or mixing the feed keeps us from bigger jobs, out in the fields.

"Last year I made up my mind that I would look for a farm plant with power enough to do real work. The one I picked was the Western Electric Power and Light Outfit, and please notice that putting the word Power first in the name describes the outfit very well. It is powerful. But I'm not going to praise it up to the skies. I just want to describe this outfit and the work it is doing for me, and let you judge whether it would suit your needs too.

The battery lasts longer

"It is the 'tapering charge' that makes the Western Electric battery last so long. The charge doesn't strain the batteries, because as they fill, the current gradually slacks up by itself. These batteries are powerful too. They can run my portable motor for hours and hours on a single charge. Or they can operate ten electric lamps for thirteen and a half hours.

Just connect this portable motor to any electric lamp socket



"Then there is the generator, built for endurance and hard work. In fact, it will run such a combination as an electric iron, twenty lamps and a one-sixth horsepower motor just as long as you keep it going.

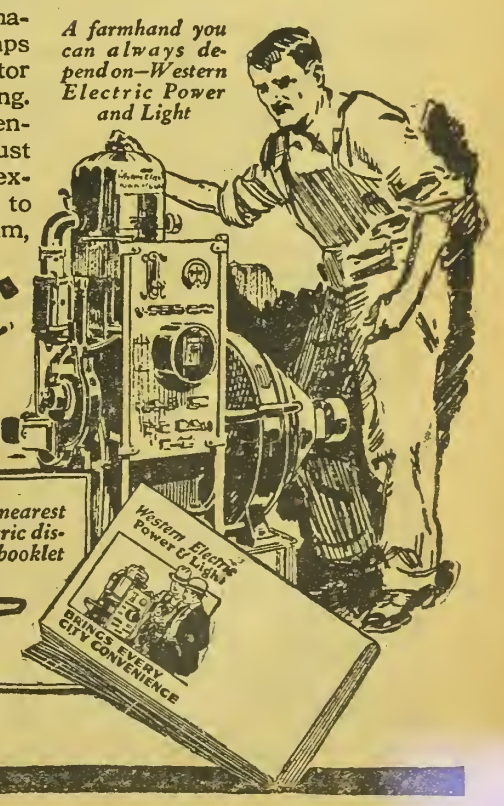
"With the batteries and the generator working together, you just add the capacity of both. That explains how I can use electricity to milk the cows, separate the cream, churn the butter, turn the grindstone and pump water.

The powerful engine is a big help

"The Western Electric Outfit has an extra size engine, with a pulley all ready to be hitched up to a lot of the machinery I used to turn by hand. So taken all in all, you can see how I save at least three hours a day for work in the field. And in these times when farm-hands are so few and far between, it is mighty important to have this dependable help that my electric power outfit furnishes."

The Western Electric Vacuum Sweeper cleans your house quickly and easily.

A farmhand you can always depend on—Western Electric Power and Light



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Makes the Battery last longer

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P. A. Douden, Denver, Colo.
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Vyne Brothers Electric Co., Prescott, Ariz.
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A. Schreck, Phoenix, Ariz.
C. F. Bush, Blythe, Cal.

For territory still available write to Western Electric Co., Denver.

Write to the nearest Western Electric distributor for booklet W. L. 6.

Western Farm Life

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Our Editorial Policy.

Changing conditions have made it necessary to broaden the editorial policies of Western Farm Life somewhat. When I took over the magazine from its former owners, now over four years ago, I promised the farmers and stockmen of Colorado and neighboring states a farm and livestock journal that would concern itself with the advancement of agriculture in this section; that would keep the farmers and stockmen informed through readable articles based on accurate information regarding methods and practices that would make farming and stock raising a paying business. This policy has been strictly followed and there will be no deviation from it, but only improvement and a continued broadening and growth, along with the growth of agriculture in this particular territory.

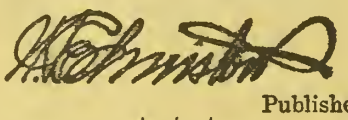
Readers have been kind enough to comment on the fact that Western Farm Life takes more interest now than formerly in movements for co-operative marketing; more information is published about organizations for improving marketing conditions and for securing better prices for livestock and farm products. This comment from readers is altogether favorable and encouraging. I am grateful for the fact that the efforts of the magazine to help along these lines, as well as in crop and farm animal production, are appreciated. This is only one of the ways in which we are keeping abreast of the times. Farmers all over America are showing more interest in the problems of marketing than ever before. It seems that our experiences during the war taught us the lesson that we can get results when we pull together. It is a hopeful sign; the best thing that has come up in my long experience as a farmer and as a publisher. I believe the Farm Bureau movement is getting at the root of our troubles and that in a few years we, as producers, will be getting a fairer deal on the markets. The farmer has a right to say what he ought to receive for his crops and livestock, just the same as the manufacturer fixes the value of his product; and as long as both of them are satisfied with a just and fair return the public will support them.

We need to guard against expecting results too quickly. Looking back over the past five years I can see a remarkable change in the attitude of the farmer toward his own business. He has confidence in himself and in his ability to cope with big problems, and that is half the battle. The other half is to work away patiently along broad, constructive lines to put the farming business on a real business foundation. This is the program that the American Farm Bureau Federation has given us and it can be applied by all farmers to their individual problems and, through organization, to our national problems.

While the economic side of farming is occupying considerable attention, I do not propose to let up on the technical side of the business, but to strengthen the features of the magazine which have made it a guide to the farmers and stockmen in these states that had no effective farm journal before Western Farm Life was organized on the foundation of several publications that served comparatively small groups of readers. My plan right from the start was to give the farmers of the inter-mountain region a magazine that would discuss their problems in irrigation and dry land farming, in livestock breeding and production, in high altitude crop growing, in orcharding, etc., from a practical standpoint.

This can be done only by a publisher who is right here on the ground; one who is familiar with these problems from personal experience as a farmer and ranchman, and who can pick the men to work with him who know the territory and the farming that is carried on here. The reader has a right to expect this when he pays for a "Western Magazine for Western Farmers and Stockmen."

Just a word more and that is on the subject of politics: I have made it a strict rule to let the reader form his own political opinions and never to seek to influence him one way or the other in an election. The reasons for this are two-fold: In the first place, a farm magazine has no business in the field of politics, and secondly, the average farmer today does not need to be told how to vote. He reads about political matters in the newspapers, discusses issues with his neighbors, and he knows that no matter which party wins at the polls, the nation goes on just the same. I believe it is the duty of every farmer—and farmer's wife—to take an active part in politics, to study political questions and to vote, both in the primary and the regular elections. But it is not my duty, nor the duty of this magazine, to suggest to him how to vote, or who for. Western Farm Life has no more right to make such suggestions than it has to tell the farmer to which church he should belong. It does set itself the task of putting before the farmer and the farmer's wife information calculated to improve the condition of the farm and the farm home, and make farm families more prosperous. The family that is doing well financially and is contented with country life is the nation's best asset. My desire is to do my humble part in thus furthering the good of the nation, by rendering a service to the individual stockman and farmer.



Publisher.

+ + +

Not Farm Bureau Work.

Under the heading "Forty-six Tonsil Operations," a news item sent out by the Extension Department of the University of Idaho reads: "At a two-day clinic conducted in Mountain Home, under farm bureau auspices, 46 children underwent operations for the removal of tonsils. The school building was converted into a temporary hospital."

No doubt consent of the parents was obtained in all cases and this proceeding was surgically regular in all particulars, but why stretch the Smith-Lever law to include medical inspection in the public schools? This law is an agricultural statute, relating to the farm and farm home and no stretch of the imagination can convert it into an instrument for the aid of medicine and surgery. A sure way to ruin home demonstration work is to permit it to get into the channel of medical inspection. Extension departments should be on guard against such misuse of county and federal funds. This is not farm bureau work.

+ + +

Plea on Tunnel Amendment.

Routt, Moffat and Grand counties form the three links of counties along the Moffat road west of the Continental Divide. These three counties have resources that many have never dreamed existed.

We had a display at our State Fair showing a small part of what we do grow in these counties and those who visited the Fair and met the representatives from this district know our needs and why we believe our state should help the western part of our state by lending the state's credit for the constructing of the three tunnels.

We realize that we did not see but a small portion of you and must take this way of informing you of the real conditions as we see them. Brother and sister farmers, do you know what resources we have in this section? Unless you have seen that section and studied you cannot know.

We brought to the State Fair many first-prize products. Our quality is on a par with the best and yield per acre is unsurpassed, yet we are, as it were, only at the beginning of our development. I will mention some facts of Routt county, as I am better acquainted with these. In Routt and Moffat counties we have 1,280,000 acres of coal lands, quality unsurpassed. It is the largest and most valuable field of coal in Colorado, equal to the fields of Pennsylvania before the latter began production. Thirteen companies now operate about one-fourth time along the railroad from Oak Creek to Mt. Harris, a distance of about 35 miles.

We have only commenced to cut the immense available timber ready to be made into lumber, estimated at three billion feet. Routt county tax roll for 1919 showed nearly 43,000 acres irrigated land, mostly hay, yielding from two to six tons per acre of the finest kind of hay; over 37,600 acres non-irrigated farm land yielding oats from 40 to 100 bushels per acre, wheat from 25 to 60 bushels, barley from 40 to 70, potatoes from 100 to 200 sacks per acre; over 47,000 cattle, 48,900 sheep, 8,700 horses. Routt county sends to the markets more than $2,000,000 worth of cattle and sheep yearly; $1,500,000 worth of grain, hay and spuds, besides what Moffat and Grand counties send. Yet Routt county coal shipments are more than all these. The above gives you some idea of what we now produce, yet we are only started.

But brothers, what is the use?

Our coal mines do not run one-third of the time because the present railroad under existing conditions cannot haul coal over the mountains to market. Our freight rates are such that in normal times we cannot afford to ship our products out, so why raise more? Therefore, we must have transportation improvements.

This is seen in the tunnel amendment. The state in the end will not be out a cent, for these are state-owned, and the toll charged will soon refund to the state all and pay off the bonds. As northwestern Colorado needs the Moffat tunnel, so the west central and southwestern needs the other two. Brother and sister farmers of Colorado, you are going to help us and in helping us, you help yourselves and all Colorado. The people of our grand state will see to it that the Continental Divide will not long divide the western half from the eastern half.

The Moffat tunnel will give us a 2 per cent grade. Our section will not be shut in from the world as it was last spring, when for 33 days no freight, express or parcel post was brought in, because our railroad was buried under snow and ice.

We know that most of you are favorable. Now work and vote for the three tunnel amendment in November. The only fear we have is that you will carelessly forget the amendment. Remember western Colorado's needs on election day and help make Colorado greater.—G. C. Merrill, Secretary Routt County Farmers' Union, Steamboat Springs, Colo.

Adams County Fair.

Here's a suggestion picked up at the Adams county fair at Brighton that is worth passing along to those interested in pasturing alfalfa. An exhibit made by a Farm Bureau member showed a sheaf of alfalfa and orchard grass as a pasture mixture. The original planting was made April 13, 1917, following wheat. The ground was plowed eight inches deep, harrowed, dragged, disked and dragged. It was seeded with a drill, then cross-drilled and re-drilled, the mixture being 60 pounds of barley, 7 pounds of alfalfa seed and 9 pounds of orchard grass seed per acre. The orchard grass grows in all three cuttings each year and comes on before the alfalfa in every cutting.

It furnishes fine pasture, the stock being less apt to bloat on it, and it stays green later in the fall. In feeding this hay to horses less grain is required to balance the ration.

The agricultural exhibits at the Adams county fair were fully up to the high standard of previous seasons. There was a decided increase in the livestock exhibits, the dairy cattle and hog divisions being especially strong, while there was also a very creditable showing of poultry.

An interesting feature arranged by the cow testing association was a guessing contest on the production of four cows selected from neighboring herds. This contest was similar to that conducted at the Boulder county fair in Longmont, a report of which appears in another part of the present issue.

John Kramer had ten of his Holstein cows in the show, other Holstein breeders represented being August Kramer, H. Tallman, W. C. Sauer & Son, Aleck Lehl, E. G. Clark, and Hall Bros. of the Western Holstein Farms at Denver. Chas. Ewing and H. H. Ewing of Fort Lupton showed Guernseys. The dairy division was in charge of Lloyd Simpson, tester for the Boulder County and St. Vrain Cow Testing Association.

In the swine division, which was in charge of J. D. Flint, there were so many entries that the overflow was cared for outside of the main building. Range View Stock Farm alone showed 40 head of registered Durocs, Mr. W. V. Ratcliffe, the manager, being in charge of the herd. He came away with six first premiums, four seconds, one third and a fourth premium. Edgemoor Juno Chief 169505, sired by Cherry Chief of Edgemoor is the noted herd sire on Range View Farm. This boar attracted much attention because of his very evident quality. Another of the outstanding animals in this exhibit was the sow Burke's Queen Mae 2nd 708510, sired by Burke's Conservationer and out of Alfalfa Queen.

Another big exhibit in the Duroc Jersey class was that of R. C. Van Scoy & Sons of Westminster, who divided the honors in numerous classes with Range View Farm. M. J. Silvia also had Durocs.

In the Poland China the exhibitors included Prewitt Hog Farms, with a fine line-up of their best stuff; Ward S. Kemp, and F. A. Aichelman.

The Hampshire breeders showing were G. H. Frink, Kennett H. Barnett and Fulton Barnett. Mr. Frink is proprietor of Lilac Lawn Ranch at Fort Lupton and is a new breeder, having bought his foundation stock from a noted herd in Iowa. His Hampshires are of the Lookout Wickwire strain. That Hampshires are popular in Adams county is evidenced by the fact that most of the members of the Boys' and Girls' Pig Clubs have registered hogs of that breed. The club exhibitors included K. H. Barnett, Joseph Barber, Louis Edstrom, Fulton Barnett, Howard Robidoux, Kathryn Reed, Ivan P. Barnett, Harry E. Mencimer and Howard Mencimer, all having Hampshires, and Joseph Kemp with Poland Chinas.

W. J. Gilbert was the only exhibitor in the O. I. C. hog class.

The sweepstakes award for boar of any age, any breed, went to Prewitt Hog Farms, and second to R. C. Van Scoy & Son. On sow any age, any breed, Van Scoy was first, with G. H. Frink second.

The livestock was judged by Prof. R. W. Clark of the Agricultural College.

The stallion show was good and competition lively for the prizes given from the state stallion fund. There was also a fair showing of mares and colts in the draft classes and several head of mule colts and jacks.

Farmers were much interested in the exhibit of the Westrobac company, purveyors of soil bacteria, who showed specimens of crops grown on soil that had been inoculated, in comparison with those from untreated soil. One plant of California brewing barley with 102 stools was shown, this having been grown with inoculated vetch at Turlock, Calif. O. S. Gilbert, manager of the company in Colorado, was in charge of the exhibit. He and several assistants were kept busy answering questions from farmers who wanted to know the what, how and why of inoculation. They were shown, by photos and crop samples, the effect of soil inoculation on leguminous plants and on succeeding yields of grain and other crops.

The Adams county fair is showing gains in interest, attendance and number of exhibits. George R. Smith, former county agent, is secretary of the fair, continuing the work he began while county agent. The Farm Bureau and the present county agent. Waldo Kidder, co-operate with the association in making the fair representative of the county's agricultural and livestock interests. The total paid admissions for three days amounted to 9,000.—A. T. S.

What He Appreciated.

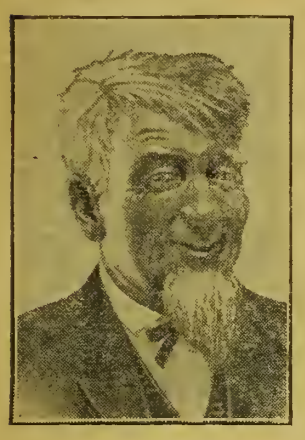
"I have never owned any automobiles," said the man who hadn't yet paid for his home, "but I can say one thing in praise of them."

"What is that?" inquired Henderson.

"They have made mortgages respectable."—Judge.

Comment by Farmer Putnam

OUR MISSOURI FRIEND GIVES US SOME DOPE ON THE PRESENT POLITICAL SITUATION.



THE other day I got a letter from one of my subscribers who wants to know why it is that I don't say somethin' on politics. He wants to know who I stand fur, Cox or Harding, Christensen or Debs. I wrote him that I was fur Debs because the President's job is kind of a confining occupation and Debs is used to bein' confined. It would make great stuff fur the newspapers to speak of "The Prisoner in the White House." That's what they say about President Wilson now because he's been sick ever since he made that speech in Pueblo last fall at the State fair. I was down thar at the time visitin' Jim Beaman and Mr. Wilson was feelin' purty good, but just a little tuckered out from ridin' on the cars. Nobody would-a thought to see him leavin' Pueblo that it was his last speech as President, but that's the way it turned out; he's been laid up ever since and I reckon he must be a heap of trouble to Mrs. Wilson. He's a high strung man and a bother to his folks, and the doctor a-tryin' to keep him in bed and him a-tryin' to git down stairs to the cabinet—to see if somebody left anythin' on the top shelf behind the water pitcher.

I feel sorry for him, but nobody else seems to. You'd think from readin' the papers he'd committed some crime. Nobody sez a kind word fur him; he's onpopular and people is afraid to say anythin' good about him fur fear other people would think them queer. I sometimes say to Josephine that this is a peculiar world. About two years ago the war stopped in Europe and we been all this time tryin' to make peace and caint. Wilson invented the League of Nations, got a patent on it from the U. S. Patent Office at Washington; sailed fur Paris with the League in a padlocked suitcase; opened it up fur the admiration of them statesmen in the Peace conference; explained the fourteen points; got most of 'em adopted and come back home with the peace of the world in his vest pocket.

Then he starts off on a trip around the country to explain it. That's where he made his mistake. I could-a told him that he was makin' a mistake, but he wouldn't lissen to me. The minute a feller tries to explain hisself people loses faith in his goods. The feller that takes the order is the one that jams the stuff down your throat and makes you like it. Roosevelt was that kind; he went and done a thing and if anybody wanted it explained why they was welcome to hunt the explanation; he never had none to offer.

One time back in Missouri I went down to St. Joe with a wagon load of hogs, sold 'em to Nels Morris at the South St. Joe yards, got my money and come on up town to see about my taxes. It was durin' the campaign and John Downey was runnin' fur county clerk and recorder and he asked me to see some of my friends in town and git 'em to vote fur him. He slipped me a five-dollar bill fur carfare, etc., and I started out to be a politician. I got into a argymint with a Republican and a policeman come up and wanted to know what the racket was about and I started to explain.

"Come on and tell it to Judge Carolus," he sez. And he made me go to the station. Well I got delayed some and when I got home the next day Josephine was all worked up over me bein' away so long and wanted to know what was the matter, so I started to explain. Well I wisht you-all could-a heard that woman lay on a tongue-lashin'. Explain? I never try it any more.

That's the trouble with most of them candidates; they spend too much time explainin'. They're all alike. Cox got a little the best of the argymint first by makin' Harding explain about them campaign contributions. You see the Republicans is tryin' to pay cash as they go along, while the Democrats wants to do business on credit, payin' fur it after election. (I reckon Debs and Christensen has to go on the C. O. D. plan, because nobody'll trust 'em.) Well in makin' their plans fur a campaign fund the Republicans sent out word quietly to the fellers: "Come through; we're on the firin' line winnin' the war and you fellers that's stayin' at home ought to be willin' to pay fur it." They made out a list like we used to do in the Liberty loans and threatened to tar and feather the slackers that didn't come through with their full quotas. It was a great plan, but Cox found out about it and got the Republicans to explainin'. That's where they fell down.

Now on the other hand the Republicans went after Brother Cox's editorial war record—that bein' the only kind he had—and they published pieces that was printed in his Columbus paper, sayin' that Germany was justified in sinking passenger ships and that we didn't have no business sendin' our boys to Europe to help lick the Kaiser. Now when that come out it made a big hole in Cox's record and while he was sendin' up a smoke screen about Republican campaign contributions he started to explain about them editorials, sayin' that one of his hired men done it, but that it was the policy of his paper in them days, because Cox believed, like Hearst, that we should of stayed at home, but that he changed his mind when we got into the war and done everything to help win—editorially.

So it just shows that neither party is perfect. Harding is accused of bein' one of them oligarchists in the Senate, which I reckon must be as bad as bein' a Anarchist or a Pessimist. Cox is accused of bein' wetter than the eighteenth amendment allows. Harding is accused of havin' owned stock in a brewery. He don't deny it, but is kind of ashamed of it now, because brewery stock has gone down so in the last fiew years.

So fur Cox's press agent seems to be the most active. He had him in a wreck on the Santa Fe in Arizona last month and then a fiew days ago the press agent found a rooster ridin' on the trucks under the private car of Mr. Cox, said rooster havin' run away from a Kansas farm and probably intendin' to foller Cox around till election day and intendin' then to crow fur victory. Anyhow the rooster was a-settin'; that is, as near as roosters kin set—on the axle and when the car inspector climbed under to git him out he seen that the flange of a wheel was about to break off and cause another wreck. So they put a new wheel on the car and cooked the rooster.

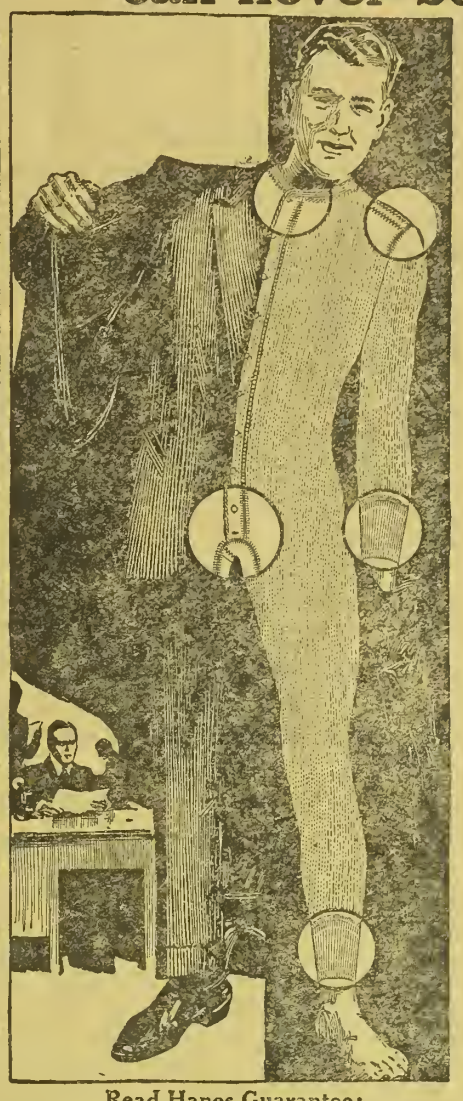
Cox has got it on Harding along this line, about two to one, and it's good politics. Harding is a little slow that way, but it's his game to go slow, because he's figgerin' on gittin' most of the conservative vote; church people, owners of trusts and monopolists, bankers, grain speculators, packers, pickpockets, profiteers and plumbers—the grandstand vote, while Cox is more after the bleachers—that is, wage earners, Union laborers, teachers, preachers and other common people.

Both of 'em is strong fur the farmers—just now—and I predict that in case of election of one or the other, "agriculture will come into its own." Them's the very words that I heard used by one of the speakers at our political meetin' and I ain't got no reason to doubt it, because—well not because of them political promises, but because us farmers is learnin' how to put our demands before Congress and git results. We're a-doin' this through the Farm Burro and not through any party and that's why I ain't a-carin' much which of them two is elected—Cox or Harding. That ain't a-sayin' which I'm goin' to vote fur; it's too early to give my promise. If them party managers wants to consult me why my address is Salem, Colo. (Arapahoe county). All bids must be accompanied by certified check.

Thoar Jefferson Putnam.

Humus in soils helps them to hold water. Farmers who do not keep livestock especially need to turn under cover crops, preferably legumes.

Confidence in "HANES" can never be misplaced!



HANES

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UNDERWEAR

"HANES" underwear for men has been standard for years! Beyond any question it is the best value in actual quality, comfort and service ever sold at the price! The "Hanes" guarantee is your assurance of absolute satisfaction. Read it!

Examine "Hanes" critically. You never saw—or bought—such real and true underwear service.

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They duplicate the men's Union Suits in all important features—with added cosy fleeciness. Made in sizes 20 to 34, covering ages from 2 to 16 years. Two to four year old sizes have drop seat. Four desirable colors.

Inspect "Hanes" underwear at your dealer's. If he cannot supply you, write us immediately.

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"We guarantee Hanes Underwear absolutely—every thread, stitch and button. We guarantee to return your money or give you a new garment if any seam breaks."

P. H. Hanes Knitting Co.
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Next Summer-You'll want to wear "Hanes" Nainsook Union Suits

"Dubble" service for the price of one

SKILLED workmanship makes reversible feature absolutely practical. Soft glove leather and harmonizing all Wool Tweed or Gabardine combine to assure "Dubble" service and "Dubble" wear in every

OAK BRAND

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Western Slope Fair.

Three very good fairs were held during September on the Western Slope of Colorado. The first of these was held at Hotchkiss. This fair is known as the Delta county fair and this year from all reports was excellent from the standpoint of attendance and exhibits shown. The fruit display was said to be the best ever. In the livestock show the displays were up to the usual standard of last year. Following that came the Western Slope fair at Montrose, and in the latter part of the month the Grand Junction fair.

The Western Slope fair was under new management this year. The county of Montrose has purchased the grounds and placed thereon some much-needed improvements in the way of new stock barns. The racing and wild west features were exceptionally good and a few new attractions were drills by school children, which were put on for the entertainment of the crowd. Among these was a competitive drill by the campfire girls of the various localities. This feature was pleasing and added much to the afternoon's entertainment. The agricultural display at Montrose was somewhat smaller than in former years, although the quality was a little bit better than has ever been seen. A very good fruit display was brought in from the orchards, showing that the fruit crop was excellent. The trees were all well loaded with fruit, but not so heavily but what the size will be exceptionally good. The display of school work was splendid, as were the household exhibits.

Montrose has always been noted for its horse show. This year the number of horses was much reduced and the classes were not nearly so well filled as has been the case in former years. The leading horsemen in the section claimed the interest in the horse business is not lagging in the least, but farmers cannot afford to spend the time at this season of the year to bring their horses in for show. Miller Bros. of Montrose are owners of several excellent stallions. They were successful in winning the grand championship on their Belgian horse. They also won the award on sire and three of his get. John Tobin showed an excellent Percheron horse, which was purchased from the Zang estate last year. He won first on this colt against an aged stallion. He also won the premium on best draft mare.

Two excellent herds of Herefords were shown, one from the Sneffles Cattle Company of Ridgway, and the other from George Means & Son of Sargent. Both herds were of good type and quality and the premiums were about evenly divided between them. The Sneffels Cattle Company won grand championship on bull, while George Means & Son won championship on female. In the dairy cattle division, Loesch Bros. of Montrose were represented with the largest exhibit. They succeeded in winning grand championship on Holstein female. Grand championship on bull was placed on a young bull belonging to Mr. Patterson of Montrose. In the grade classes, Allen Nash carried away the premiums on Holsteins. Mr. N. F. Phelps of Montrose won on registered Jerseys. The display of dairy cattle was somewhat lessened in numbers this year on account of the fact that some of the larger herds were dispersed during the year, and owing to a prevalence of a disease among cattle over the valley.

Probably the strongest end of the livestock show was that of Duroc Jersey hogs. This fair has always had strong competition in this division and this year was no exception. A number of the leading breeders have gone out of the business, but there are others coming in to take their place. In this division Mr. A. A. Clements of Paonia was successful in winning the grand championship on sow, while Leon Jordon of Hotchkiss won the same honors on boar. In the futurities Roy Clements of Paonia won first; A. A. Clements second and fourth, and Artt Bros. of Austin third. A very strong showing of boys pig club pigs were exhibited, most of which were of the Duroc Jersey breed. In the Poland China division there were some excellent entries from the boys' pig clubs and Mr. Ashby of Spring Creek Mesa.

In the sheep section, Allen Nash of Montrose carried away all honors in Hampshires, while Chris Madson of Olathe won on Rambouillets. The livestock show as a whole was good, but there seems to be a tendency among the stockmen generally to be somewhat discouraged over the present outlook. Some of the old-time cowmen are planning on selling all of their stock this fall.

Cattle and sheep coming in from the range in that section this year are in excellent condition. The feed has been better than it has been for many years. The main bulk of the shipping will be done a little later than usual this year, because of the fact that the feed is good and at this time the cattle are comparatively soft. The plan is to keep them out and let them harden on the late grass. Several large bands of sheep were seen on the range, all of which were in excellent condition, the lambs being very heavy and fat.—H. A. L.

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Feeding and Fitting Livestock for Exhibition.

(Continued from Page 5).

tions of oats and bran, the proportions being one-third oats and two-thirds bran. Then at 12 feed oats, bran and cut hay. At 3 p. m. feed oats and bran, and refill hay racks. At 4 p. m. give water. At 6 p. m. the last feed consists of oats, bran and cut hay."

To keep the blood in good order, "Glauber's salts" mixed with oats and bran will be eaten quite readily by the horses, and will in most cases prevent stocked legs. Stocked legs are a common trouble where horses are on high feed with little exercise. These salts are fed about twice a week at equal intervals, giving one-half or one-third of a pint of the salts at each feed. These salts can be bought very cheap by having your druggist order them for you at wholesale prices. They are not as strong as Epsom salts, but they have a very desirable and cooling effect upon

the blood. Oil meal may also be given to a good advantage.

The business part of a horse is his feet and legs, and the soundness, quality and mechanical perfection of these feet and legs must be demonstrated in the show ring to a large extent by the way the horse can step out at the walk or trot before the judge. For this reason the feet and legs should be given special attention and the horse given plenty of exercise. Broken, badly shaped feet are a great handicap to a horse in the show ring. Allowing a horse to stand in manure will make the feet lose their waxy texture and become dry and cracked. Horses should be shod at least two months before showing, and will generally show better action if wearing shoes that are somewhat heavy. They should be accustomed to these shoes, however, before being expected to show in them. If the feet are inclined to dry out they may be packed with wet clay.

Fat sheep require a little longer to fit than breeding sheep, and will need larger amounts of corn or barley. Lambs are fed grain as soon as they will eat, and kept growing from start to finish. Two to three months' feeding may be sufficient for breeding sheep over one year old, and four to five months for fat sheep. Wisconsin experiments on fattening wethers and lambs, show best results from a mixture of field peas, oats and bran for feeding yearlings. Barley, oats and bran was second best, while barley and oats proved more successful than corn, oats and bran.

Ration for Fat Lambs.

For a lamb ration, Kleinhenze recommends four parts wheat bran, two parts whole oats, two parts fine corn meal and one part oil meal during the early part of the season. This is followed by a ration of equal parts bran and oats with small amounts of peas, barley and oil meal. Toward the end of this period some corn is added. Heavy feeding of corn is inadvisable, as it is heating and produces a soft carcass. Succulent feeds like cabbage or roots help to keep the show animal in condition. Mangels should not be fed to rams or wethers, as they cause bladder stones. The grain fed will run from one to two pounds per day, averaging one and one-half pounds and will produce three-tenths to four-tenths pound gain per day.

The champion carload of lambs at the 1917 Western Stock Show was shown by Bruce Eaton of Eaton, Colo. They were fed grain in lamb creeps while on pasture with their dams until September 1st. They were started on rolled barley with alfalfa hay in a self feeder and in thirty days were eating one pound per day. They were then changed to whole barley and the feed increased till they were eating one and three-fourths pounds per day. Two weeks before the show in January, they were changed to whole corn. Although these lambs might have gained better on a greater variety of feeds, they were credited by the judge with being better than any shown the same year at Chicago. They were Southdowns and weighed 95 pounds.

In fitting hogs, as with other stock, feed first for bone, muscle and growth, then finish with more fattening feeds. Milk is the greatest feed for growing pigs. Some feeders use whole milk, but some would rather have skim milk than whole milk, but skim milk or buttermilk will prove almost equally valuable, and there is less danger of over-fitting the pigs. A pig crowded heavily on whole milk never makes a good breeding prospect.

One feeder, writing in the American Swineherd, recommends for young pigs a thick slop made of one-third ground oats, one-third ground barley, one-third wheat shorts and bran, with five pounds of oil meal and six pounds of tankage for every thirty-gallon barrel of slop, fed twice daily with what ear corn the pigs would eat in addition. Pasture is always good (even up to finishing time, except for those entered as fat hogs, should they be taking too much exercise). The best fitters recommend feeding young pigs just a little less than they would like to eat. The growing ration used in the college herd usually consists of three parts each of corn chop, wheat bran or ground oats and ground barley and one part tankage. For finishing, the bran or growing oats is cut down and the corn increased. For winter shows, hogs can stand higher fitting than for the fall fairs, especially in the case of animals kept for the breeding herd. Sows not in pig, if fitted highly, sometimes fail to breed. Very few boars go sterile by fitting unless held in high condition for a long period.

What Brauer Recommends.

Mr. J. W. Brauer of Colorado Springs, who is an expert in fitting and showing hogs, recommends ground oats, barley and milk or tankage for pigs under one year old, and the same with an addition of corn for older hogs. He feeds his hogs three times daily with what alfalfa they want between times. He believes in taking plenty of time to fit hogs, starting the young pigs at weaning time, and the older pigs from three to four months before the show.

Another very successful fitter is C. F. Burke of the Blue Ribbon Stock Farm, Pueblo, who is a great believer in milk for fitting young pigs. He makes the following suggestions which will be of considerable interest to Pig Club members: "Buttermilk can be fed to pigs of any age if one is careful to keep bottles and troughs clean and the buttermilk is not too sour. Feed it regularly, and very gradually increase the amount until the pigs are on full feed. Then by degrees add a little ground feed, preferably fine corn chop and finely ground oats, equal parts, and a little tankage later. They need very little tankage when plenty of milk is fed.

"The best way to teach young pigs to eat is to feed the sow whole or cracked corn on a feeding floor. In this way the pigs are attracted by the eating of the sow and learn to eat when about two weeks old. Get pigs out in the sunshine as young as possible."

The boys' and girls' Pig Clubs and Calf Clubs are doing a great deal to stimulate interest in fitting stock properly. At the Boulder county fair a few weeks ago a number of first prize winners were fitted and shown by the boys. A pair of Shorthorn heifers shown in the second year club exhibits could hardly be improved upon, one of them being made champion beef female of the show. Some of the Holsteins, and Poland Chinas shown by the club members were winners in their classes, and would have been a credit to any professional breeder. Too much credit cannot be given to county agents and club leaders for this kind of work.

Soldiers' Homestead Requirements.

Is a soldier required to live on his homestead?—O. H. B., Park County.

A soldier gets time off equivalent to the length of time he served in the army up to a period of two years. That is, if he served two years in the army he would only have to live on his homestead seven months out of the third year. If you served one year you would have to spend seven months out of each of two years on your homestead in order to prove up.

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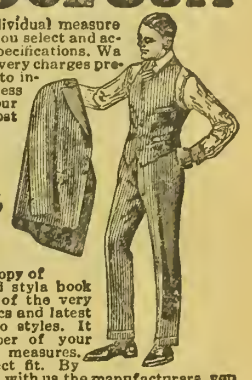

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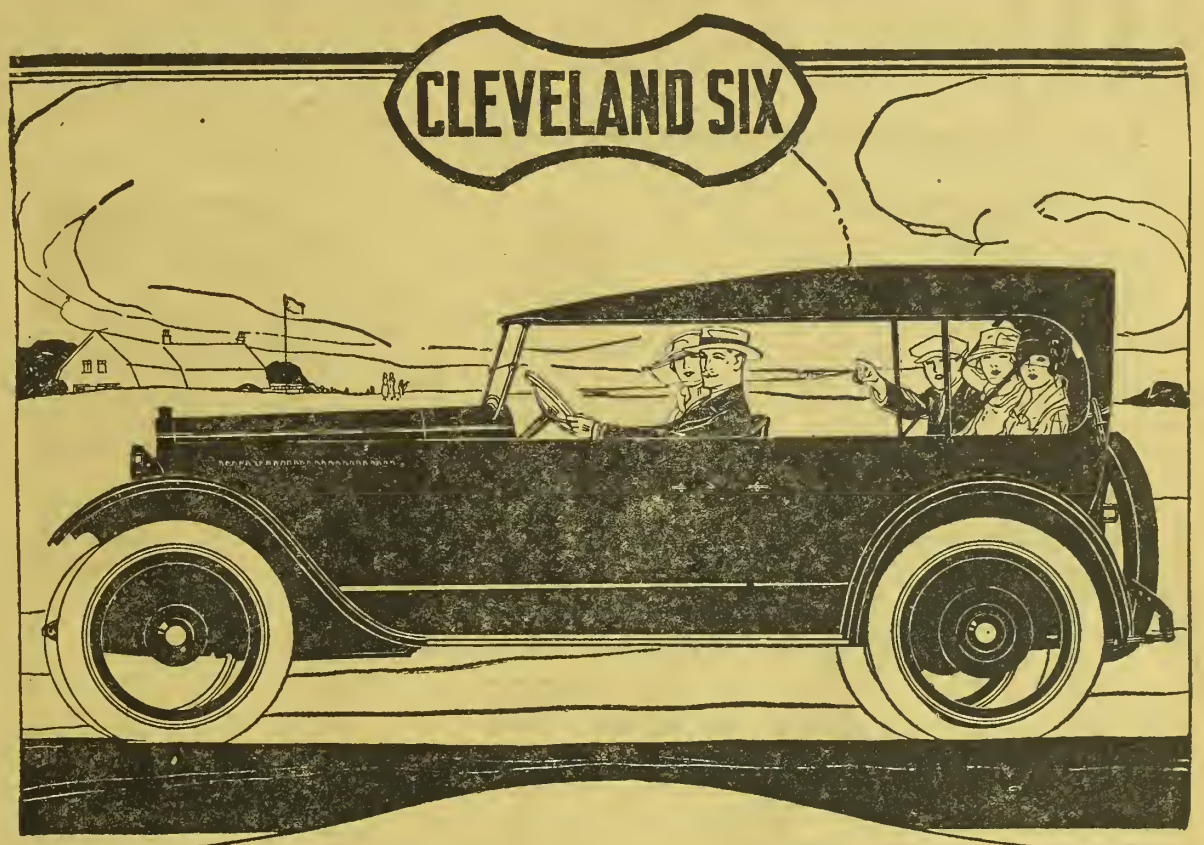

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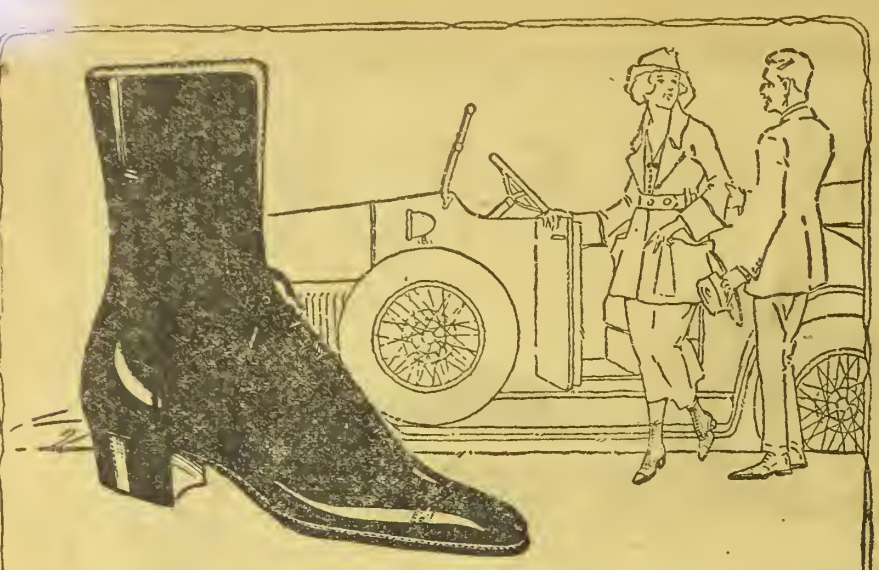

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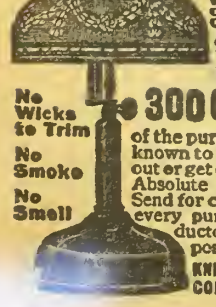

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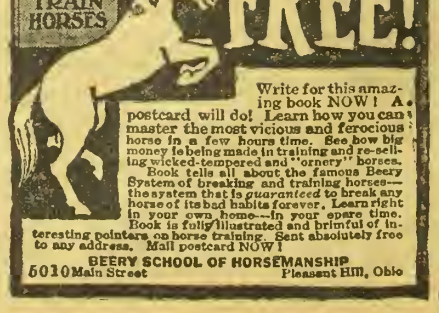

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The Heart of Virginia Keep.

(Continued from Page 7.)

glanced at the top. It had been sent from Battle Creek.

"Where's mother, Beth?"

"Mis' Keep done gone, chile. She say she dinin' out tonight."

Lizbeth's wrinkled face twitched and her knotted fingers worked together endlessly as in anxiety she searched her mistress's face.

"Is yo' pa hurted, honey—or daid?" She whispered the last word.

Virginia was re-reading the telegram, three milky-white teeth embedded in her lower lip. After a moment she remembered that Lizbeth had spoken.

"It's—all right, Beth."

"You sho he not hurted, honey?"

"Quite sure," starting for the staircase. "Bring some chocolate and an omelet to my room, please, and whatever else you think I might like."

From the stairs she called back:

"Tell Bartley if any one calls—no matter who—I'm not at home."

CHAPTER V.

The Plucked Crow.

The letter came three days later. When Virginia saw the postmark it seemed to her that the room spun round for a dizzy instant and then turned black and still.

Toronto, Canada!—

As well had it been "Embezzler—thief!" Myriad vague doubts and unformed fears, grinning phantoms of feverish conjecture, became in one swift flash ugly realities.

The letter, addressed jointly to wife and daughter, rambled in a disconnected style not at all like Keep's usual terse composition. Mrs. Keep read it aloud at the breakfast table. When she had uttered the last word in her precise enunciation, folded the sheets of hotel stationery in her lean fingers, and deposited them with an exact little movement beside her teacup, she sat stiffly erect, her thin lips drawn tightly over her prominent teeth, her aquiline nose aquiver, her pale-blue eyes aglitter.

A silence ensued. After a space, without looking up, Virginia said:

"What do you think, mother?"

"I think," and Mrs. Keep fairly bit the words in two, "that the letter is excessively provoking, if not a direct insult."

The girl lifted her soft eyes. Her stepmother might have seen, had she not been so incensed, that below either corner nearest the nose was a purplish shadow—unlovely evidence of three sleepless nights.

"Ah, no! You shouldn't say that."

"Ten pages! And not one syllable of explanation. Not one word of why he sneaked away in the night like some low, common person!"

The italicised emphasis with which Mrs. Keep delivered the last three words would have made an ordinary man shiver.

"Is that all you see?"

"My eyesight," observed Mrs. Keep, "is excellent."

"Read between the lines, mother. Surely you can see the hidden meaning."

"It may be that I am deficient in subtlety. In any event I can perceive nothing beyond a maudlin jumble of meaningless phrases."

Virginia's mouth quivered—drooped.

"How can you be so blind? The hideous truth is there. It is only thinly veiled. Papa intends—Can't you see?"

Mrs. Keep said with some asperity:

"I can see you are talking in riddles, my girl. I beg of you, desist."

Virginia leaned across the table. When she spoke her voice was sunk to a whisper.

"He—intends—to—kill—himself!"

"Virginia!"

"It's true! It's in the letter. I saw it as you read. H-he imagines he's done us an irreparable injury. And he thinks——"

But she could not go on. Mrs. Keep felt a sympathetic desire, as sudden as it was genuine, to comfort her. It was the first time in their relationship that any bond had united them.

"Compose yourself, my dear. Please do. This dreadful occurrence has upset us both. We had best go away for a time—to Bar Harbor, say, or to New Hampshire. After a complete rest we shall come home. In the meanwhile I am sure your father will have returned."

"If I only knew!"

"He will come back, my dear. Rest assured of that."

"If he could only know how I want him, how I have prayed for him every night since he left!"

"In any event," decided Mrs. Keep, "we cannot stay here. The bank officials' questions, to say nothing of others, are becoming quite embarrassing, and I have never been accustomed to quibble."

Virginia glanced up quickly.

"I'll not leave until he returns. I'll not go then if he needs me."

Seeing her stepmother about to protest, she added:

"The right thing would be for us to go to him."

"Go to him! Why?"

"To protect him from himself. To comfort him, to cheer him."

She stopped abruptly; then in a cyclonic gust:

"I know the cause of this! It's that dirty, ragged boy who brought that filthy note! When I get him—and I will—I'll make him tell the truth if I have to gouge it from him!"

"My child!"

"Wait!" Virginia seized the morning newspaper lying on the table, turned to the classified advertising section and gave the paper to her stepmother, indicating an advertisement in the personal column. "There!"

Mrs. Keep compressed her thin lips as she read:

"PERSONAL—One Hundred Dollars Reward will be paid for information of the whereabouts of the boy who delivered a message at the residence of Alfred Hamp Keep about 10 o'clock on the evening of April 3d. The boy was poorly clad, is about 15 years old, and has a retrousse nose and a pallid complexion. His hair is dark. The message was enclosed in an envelope of cheap quality, rather soiled, and was addressed with a lead pencil. Address L. O. 35, Publicist."

"I fear I am still unenlightened, my dear."

"I'll explain. This is one of those things which seem trivial enough when they happen, but which are really significant when you come to think them over. After he'd gone I remembered how queerly that little ragamuffin had acted. Though his message resembled something found in a dustbin, Grant, who was here, needed force to get it from him. He held on to it like a bull terrier—insisted upon giving it to papa in person. It shows—don't you see?—that he knew what was in it. And I'm sure it was something vital. I put it with papa's letters, and the next morning it was gone. And so was papa!"

"Indeed!" Mrs. Keep raised her eyebrows in mock astonishment. "Now, if I were to puzzle over this mysterious riddle for a fortnight I should probably arrive at the conclusion that your father, after reading the epistle, had thrown it in the waste-basket."

"But he didn't. I looked for it. The other letters were there—or on his desk. I found them. But this particular one had disappeared. Moreover, when I surprised those detectives in papa's study that morning I saw one of them hide something very covertly in his coat. He was standing beside papa's desk, too."

Mrs. Keep drew an audible breath and exhaled it tiredly.

"Really, my child, I can regard this only as a figment of an overwrought imagination."

"My intuition," maintained the girl, "tells me I am right."

"And is your intuition always infallible?"

"It is this time, I think."

The parlor maid entered.

"Mr. Mattock to see you, Miss Virginia."

Virginia had not seen Mattock since the night of her father's disappearance. She found him awaiting her in the hall.

"Is anything wrong?" was her response to his salutation. "It's disgracefully early."

"I know. I—looked in to see if you care to go to the theater?"

"I don't believe I care to go anywhere tonight, Grant. You mean tonight, I suppose?"

"Yes. I have the tickets."

"I'm sorry. Perhaps you can exchange them."

For a moment her eyes scarched his face keenly, conjecturingly; and then, her gaze suddenly challenging him, she demanded:

"Grant, what's wrong? Why are you here?"

Mattock frowned and started to speak.

"What is it, Grant? Please!"

"Well, then, there is something," said Mattock. It's not easy tell you. I——"

"You mean—it is so—horrible?"

"It will be hard for you, Virginia."

He indicated the drawing room on his left.

"Shall we go in there?"

She nodded, unable to speak. Her face was as white and cold as marble.

Seated in the drawing room with the sliding doors to the hall closed, he began to tell hear. speaking in the hushed voice one instinctively uses in a house of death. Before he had gone far she interrupted him:

"So it's only that." And she sat back in her chair with unutterable relief.

Mattock stared, amazed. But she went on:

"I thought at first—and I shall never forgive myself—that papa was a th-thief. And a minute ago, from the way you spoke, I believed bim dead. But now—"

"And now," gasped Mattock, blinking his slate-colored eyes, "that he stands accused of killing two men?"

"Oh, but he never did such a thing—never! Why, it's too ridiculous! Too preposterous!"

She smiled as if amused, but, quickly observing his expression, the smile left her lips and she eyed him in cold silence. Presently, still eyeing him, she said in a steady, dispassionate voice:

"He never did it."

"The evidence against him is strong, Virginia."

"He never did it!"

"Why did he go——"

"He never did it!" She emphasized each word by rapping her clenched hand against her knee.

Mattock shifted his legs, fingered his necktie, and remained silent. Virginia, leaning tensely forward now, kept her black eyes fastened on him as if angrily daring him to speak. As he held his tongue she rose quietly, crossed to a window, and stood with her back toward him. An ormolu-clock on a carved writing desk ticked off half a minute. Neither spoke.

"What is the evidence?" he heard her say finally.

He walked to where she stood and—always behind her, for she would not face him—told her briefly. Again he used the funeral tone, tempered with a warmer sympathy, and once he essaped personal condolences; but she cut him short with:

"When will he be brought back?"

Though deathly pale, she was cool mistress of herself.

"Immediately. I am told he will return without extradition papers."

"And the prosecution?"

"One of the men," said Mattock, glancing at his watch, "had a daughter. She is a woman now of forty."

"Is she the Greek's daughter?"

"No. The saloon-keeper's. Her name is Mrs. Hermann Schmitt. Her maiden name was Anna Kraus."

"And the other—the Greek?"

"Gorkos had no relatives, or at least none has been found."

Virginia rang the servants' bell.

"I must see this woman at once."

"That would be useless, Virginia—and unwise."

"I should like to see her, anyway. We must get lawyers, too. Good ones. We must have none but the very best, Grant."

With a gesture Mattock started to speak, but checked himself and nodded silently.

"Of course he never did it. We both know that. But even if he had—even supposing for a moment he had—oh, Grant! Twenty-five years! Think of it, Grant—twenty-five long y-years! Why, that was six years before I was born!"

"The law," said Mattock in a peculiarly hard voice, "takes no account of the flight of time in such matters. Unlike

some other offenses, homicide is never barred against punishment by lapse of time."

"But the cruelty of it, Grant! It seems so unjust—so s-savage!"

Her dark, dovelike eyes, raised to his in helpless appeal, were moistly melting, and, looking down at her, he saw her lip quiver piteously. Almost involuntarily his arms went out to her in swift compassion; but she stepped quickly back, her arm outthrust, holding him off.

"Please, Grant!"

Bartley was at the hall doors, sliding them apart; she ordered her car. Promising to rejoin Mattock within a minute, she flew upstairs to her room. When she came down, dressed for the street, she found him conversing with Mrs. Keep in the hall."

"Going out, dear?"

"Grant and I are going out for a spin."

At any other time her stepmother's start of surprise and Mattock's guilty look would not have escaped her. Anxious to be off, consumed with a desire for action, she saw nothing. Her first words as they left the house were:

"You didn't tell her?"

"No. I thought I'd better let you." He added in a metallic tone:

"I mentioned that I was on my way to the office and was late. I think that was why she seemed puzzled when you told her we were going motoring."

Virginia came to a dead stop. Of a sudden it occurred to her how singularly he had been acting. By now they had reached the box-hedge, dividing lawn and pavement; and Mattock, as an excuse for evading her eyes, began plucking the thick ,green leaves.

"Aren't you going with me to see Mrs. Schmitt?"

"No."

"Why not?"

He did not answer, nor did he look at her.

"Why aren't you?" she insisted.

Abruptly he turned. Regarding her steadily, he said with a trace of sternness:

"Virginia, as state's attorney of St. Louis I have a solemn oath to obey."

"But goodness gracious; It shouldn't take forever, should it! Where does the woman live?"

"I don't mean that," he interjected, jerking a corner of his mouth impatiently.

"What do you mean?"

"One of the unpleasant duties of my office," he said slowly, frowning at her, "is the prosecution of men who have done wrong in the heat of sudden and violent passion—such as, for instance, your father——"

"Grant!" She fell back, her hand fluttering blindly, eyes round with sudden horror. "You don't mean—— You can't intend——"

She halted for words to complete the sentences, but, finding none, left them unfinished, and stood staring at him inarticulately.

"I have no choice, Virginia. My duty is plain. I must fulfil it."

"And—that means?"

"That I shall have to prosecute your father."

"Grant! You won't!"

"There is no alternative, Virginia."

"Think of me, Grant. You love me. You have often told me so."

"Love you? I love you with all my heart, with every fiber of my being. But the pledge to my office, to the people who placed me in it, comes first of all.

"I wish to heaven I had never been elected—that I had never entered politics As it is, I have but one course. My oath of office comes first of all. I can allow nothing under heaven to turn me traitor—not even you!"

As the State's attorney spoke there shone in his slate-colored eyes that peculiar, intensive gleam which gave one the uncomfortable impression of cruelty. His wiry body was held very straight and erect, his head rigid, somewhat as a martyr might hold himself when facing death for his cause.

"Grant, you don't realize what you are saying. You are too excited. Take time to think it over. Won't you please? Come in tomorrow. Or the day after. Give me your final answer then."

"Do you imagine I have not already thought it over, viewed it from every angle, picked it apart, argued and reasoned with myself until my brain ached? Last night I paced my study for hours. I was fighting the hardest battle of my life.

"My stronger self triumphed at last, thank heaven; and now my mind is made up once for all. Tomorrow, next week, next year, will not change it."

Virginia's gloved hands clenched suddenly.

"For the last time—what are you going to do?"

Her voice expressed repugnance withheld tentatively pending his answer.

"I have told you," he said.

The girl's pliant body grew rigid.

"You know what this means?"

Mattock nodded. He did not speak. His mouth was drawn as if in pain. When, moving taward her, he held out his hand, she recoiled from him as she would from something loathsome, unclean.

"Don't touch me! Don't come near me!"

She stopped, breathing rapidly, her nostrils dilated. For an instant she appeared to stand poised, like a bird on the point of flight. Then she walked to the car awaiting her at the curb. As she placed her foot on the step he saw her pause, strip the glove from her left hand, remove their engagement ring, and hold it toward him.

He followed her, proudly waiting, and took the ring without a word.

Some while after she had passed beyond the arch at the end of Westmoreland place he remained as she had left him, the diamond, held between thumb and forefinger, sparkling prismatically in the spring sunshine.

(To be continued.)

The August report of L. M. Harrison, statistician of the bureau of crop estimates of Arizona, gives the probable yield of American Egyptian cotton for the state as 90,000 bales, and estimates the short staple crop at 20,000 bales.

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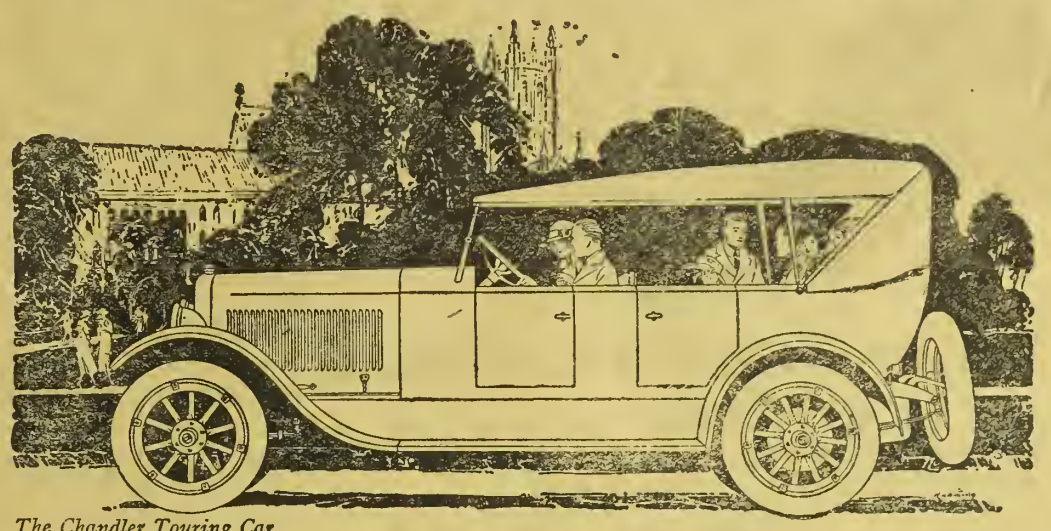

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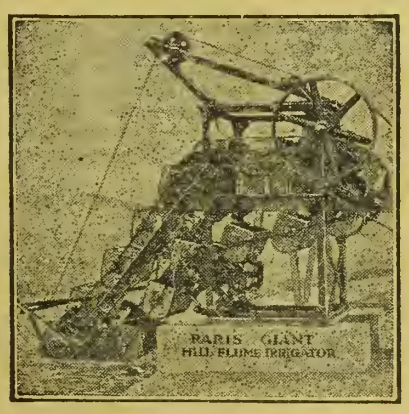

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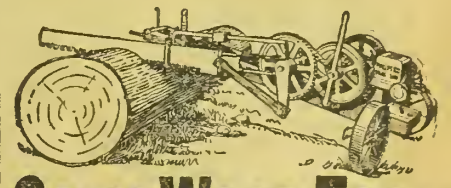

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McClenahan Wins At Cornbelt State Fairs.

Jersey breeders at the cornbelt state fairs last month were not a little surprised at the way A. M. McClenahan of Greeley, Colo., owner of the famous Majesty herd of Jerseys, took honors n competition with eastern breeders. Twenty-five head were sent out on the circuit in charge of John Dixon, who has had a partnership arrangement with Mr. McClenahan the past year. The herd was shown at the state fairs in Missouri, Illinois, Indiana, Kentucky and Wisconsin, and finally at the National Dairy Show in Waterloo, Iowa.

Even against such competition as the world-famous Longview herd of Kansas City, McClenahan's Jerseys were in second or third money and at Wisconsin, showing against the finest herds of that state and the famous Brewerton herd from Illinois, the Greeley cattle took all the female championships and pressed the Illinois man for honors in bull classes. Wisconsin is the leading dairy state of the Union and its state fair boasted of 884 entries in dairy classes, with 120 Jerseys. Hugh Van Pelt, an eminent authority on dairy cattle, was the judge at Wisconsin.

Hoard's Dairyman for September 17 stated that "W. A. Brewerton of Illinois and A. M. McClenahan from Colorado furnished Wisconsin Jersey exhibits with hard competition and succeeded in winning eleven firsts as well as all championships, Dickson showing for McClenahan won senior championship on the 2-year-old Majesty's Feather Lad, but was beaten for grand championship by Brewerton's junior champion Raleigh's Thornbury, an outstanding senior yearling. McClenahan more than evened up when the female championships were placed by taking them all. His aged cow Westfield Girl, with a very well shaped, splendidly veined udder, was senior and grand champion. Majesty's Finance Oxford, a senior yearling from the same herd, was junior champion."

The complete list of McClenahan's winnings at Wisconsin were as follows:

Two-year-old Bull—First and senior champion on Majesty's Feather Lad.

Junior Yearling Bull—Third on Financial Dainty Prince.

Junior Bull Calf—First on Bosnian's Shy Duke.

Aged Cows—Senior and grand championship on Westfield Girl; third on Gray Canonnees.

Three-year-old Cow—First an Western King's Floradora, and third on Ruby's Financial Girl.

Two-year-old Cow—Second on Jubilee Oxie.

Senior Yearling Heifer—First and junior champion on Majesty's Financial Oxford; third on Royal Lad's Dairy Fern.

Junior Yearling Heifer—Third on Princely's Sweet Rose.

Junior Heifer Calf—Second on Majesty's Feather Lad's Fodo.

First on graded herd; first on young herd; first on calf herd; second on get of sire; first on produce of dam.

At the Illinois State fair the outstanding herds were Longview Farms of Missouri; W. A. Brewerton, Illinois; Crystal Brook Farm, Illinois, and the McClenahan herd. Longview took all first prizes and a large portion of the second prize money. McClenahan's winnings were as follows:

Bull, 2 years and under 3—Second on Majesty's Feather Lad.

Bull Calf, 6 months and under 12—Fourth on Majesty's Feather Lad's Boy.

Bull Calf under 6 months—Fourth on Bosnian's Shy Duke.

Aged Cow—Fourth on three cows, Westfield Girl, Gray Canonness and Jolly Oxford Buttermilk.

Cows, 4 years and under 5—Third on Western King's Floradora.

Cow, 3 years and under 4—Third on Ruby's Financial Girl.

Heifer, 18 months and under 2years—Third on Majesty's Finance Oxford.

Heifer, 12 months and under 18—Fourth on Princely's Sweet Rose.

Heifer, 6 months and under 12—Fourth on Majesty's Cowslip Feather.

Heifer Calf under 6 months—Third on Majesty's Feather Lad's Dodo.

On dairy herd—Longview Farm first, McClenahan second.

Third on graded herd; fourth on breeders' young herd; third on calf herd; fourth on get of sire.

The Indiana show was judged by C. I. Hudson of East Norwich, N. Y. The winnings were:

Junior Bull Calf—Second on Bosnia's Shy Duke.

Three-year-old Cow—Third on Western King Floradora.

Two-year-old Cow—Second on Jubilee Oxie.

Senior Yearling Heifer—Third on Majesty's Finance Oxford.

Senior Heifer Calf—Third on Majesty's Cowslip Feather.

Junior Heifer Calf—Third on Majesty's Feather Lad's Pet.

Fifth on graded herds; second on calf herd; fourth on get of sire on Majesty's Feather Lad; fiifth on produce of dam on Cowslip's Sweetbread.

At the Iowa Cattle Congress in Waterloo, the McClenahan herd took senior grand championship on cow on Westfield Girl; first on aged cow, with Longview Farms, second; first on two-year-old in the bull classes; third on yearling bull. This was in a Jersey show that included some of the finest herds from Iowa, Missouri, Illinois, Ohio and other states. Prof. J. A. MacLean of Boston was the judge.

Tillie, Not Sophie, the Champion Butterfat Cow.

The New York daily press has had an item, copied into many journals in various parts of the country, which states that the Jersey cow Sophie 19th, of Hood Farm, has "come back at the age of fifteen years and six months with a record that makes her the champion butter cow of the world." The item goes on to say that "in nine years she has produced 110,918.1 lbs. of milk and 6,356.06 lbs. of butterfat, an average of 12,324.3 lbs. milk and 706.23 lbs. of butterfat a year." The further claim is that Sophie 19th has "a clear lead of 693 lbs. of butterfat over her nearest competitor, Tilly Alcartra."

The following tables will show the records of the two cows for the same number of years—seven—in both milk and fat; and we think no fair-minded person will fail to see that Tilly Alcartra, the Holstein cow, has practically twice the amount of milk and 380 lbs. more fat in that period, as well as an average of 54.42 lbs. more fat for the year. This, be it noted, is for an equal number of years for both cows:

Sophie 19th of Hood Farm.

Age.	Lbs. Milk.	Lbs. Fat.
2 years	7,050.2	395.9
3 years	9,924.8	570 8
4 years	14,373.2	854.9
6 years	15,099.4	931.9
7 years	17,557.8	999.1
9 years	11,915.4	680.49
11 years	15,948.2	847.87
7 years	91,869.0	5,280.96
Average	13,124.19	754.42

Average fat 9 years, 706.23 lbs.

Tilly Alcartra.

Age.	Lbs. Milk.	Lbs. Fat.
2 years	14,837.2	444.96
3 years	21,421.3	672.98
5 years	30,451.4	951.23
6 years	29,826.6	952.37
7 years	26,814.8	833.76
9 years	33,425.3	1,058.42
10 years	23.686.1	748.18
7 years	180,462.7	5,661.9
Average	25,780.38	808.84

Average fat 7 years, 808.94 lbs.

The Jersey cow, Sophie 19th of Hood Farm, is credited on the books of the American Jersey Cattle Club with nine records, while the Holstein cow, Tilly Alcartra, is credited on the books of the Holstein Friesian Association of America with only the seven shown above. The claim made is that the Jersey is the "champion butter cow of the world," based on her average of 706.23 lbs. of butterfat. However, we have for the Holstein cow, Tilly Alcartra, an average of 808.94 lbs. for her seven years. Wishing to be perfectly fair, we also call attention to the fact that if we spread Tilly Alcartra's yield of 5,661.9 lbs. of butterfat (made in seven years) over the nine years to match the Jersey cow's number of records, we have within 77.13 lbs. of the Jersey's average. Or, to put it more plainly, it took Sophie two years to make the 694.16 lbs. of fat claimed as a "clear lead."

Again, out of the seven records given above, the Jersey has only one year with a higher fat record, and the next year slumped down to 300. lbs. less, while the Holstein gave 224 lbs. more in her next period. Also, in the last of the

seven periods Tilly Alcartra gave in 305 days within 99 lbs. of Sophie's fat for the whole year.

In the information given to the public, in which the yield of Sophie 19th is matched up with that of Tilly Alcartra and the claim made that the Jersey has far outdistanced the Holstein, no mention whatever is made of the fact that the Jersey had made nine records to the Holstein's seven; nor of the further fact that two of the Holstein cow's records were less than a year. So we take leave to correct the statements made without foundation of fact, and maintain that the champion milk and butter cow of the world is the Holstein-Friesian, Tilly Alcartra.—Holstein Friesian Extension Service.

Another Good Holstein Record.

Mrs. R. G. Douglass, president of the Holstein Friesian Breeders' Association of Colorado, who lives at Rush, has written us that her 4-year-old cow, Diana Stemwinder De Pauline, was placed on semi-official test in May. During that month she made a 7-day record of 27.57 pounds of butter. Her best 7-day's milk was 696.7 pounds, only 3.3 pounds under 700, which is close to 100 pounds of milk per day. In 30 days in official test she milked 2,768.8 pounds of milk which contained 107.37 pounds of butter Four months after calving she milked better than 85 pounds per day and her old record was made without either silage or beets.

Mrs. Douglass reports that she has not overdone herself in the least in the record, which was made without any extra effort. She comes from a cow that was also a good producer, having milked 108 pounds in a day, 3,100 pounds of milk in 30 days, and tested 3.3 per cent fat. The conditions under which these cows have made their records indicates that the 4-year-old cow has a great future before her. Such cows are extremely valuable to any dairyman and their offspring can be depended upon to produce the desirable kind.—H. A. L.

Elbert County Calf Club.

At the Kiowa community fair held at Kiowa, Colo., on September 23 and 24, the Elbert County Calf Club made a grand showing of Shorthorn heifer calves. The club leader is A. G. Cornforth of the Cornforth Live Stock Co. of Elbert.

There were fourteen calves shown by as many boys and girls between the ages of 12 and 18 years. The calves were drawn November 8 last and cost on an average $150.

Prizes were given for the best gains best written reports on how the calves made, for the best individuals, for the were fed and taken care of and also how they were broke to the halter. $250 in prizes was distributed between the fourteen boys and girls.

Last fall it was proposed that the calves be sold this fall, but when it came to the showing not a boy or girl was willing to sell his calf. All will start herds of their own.

A Big Shorthorn Event.

The Elbert County Shorthorn Breeders' Association will hold their first annual sale of Shorthorns at Elbert, Colo., on October 27. Fifteen of the best breeders have consigned 50 head for the sale—38 females and 12 bulls.

Elbert county has for many years produced feeder cattle that have won a reputation throughout the United States as the best Shorthorn feeders, and they have been winning firsts and champion prizes at all the principal stock shows. It is only a few years ago that some of these breeders commenced raising registered Shorthorns and now their herds have increased in numbers so that they are able to dispose of some of their animals.

The climatic conditions of Elbert county are such that cattle grown there have that rugged, robust constitution so much sought for. Their feeds consist of a great variety of the most succulent grasses, and cattle are found in the pastures three hundred and fifty days a year. T. B. and other diseases are not to be found in any of the cattle in Elbert county.

Among the many well-bred bulls to be found in the different herds are Superbus Cumberland by Royal Cumberland, owned by Al Carnahan & Sons. Everybody knows Al and to know his boys is an added pleasure. You'll see them at the sale.

The Cornforth Livestock Company have Cedarlawn's Best by Ruberta's Goods at the head of their herd. Here's another Al. that everybody knows, and his son Harvey is also a typical Shorthorn breeder. C. A. Melburn has that show bull, Typical Thought, to head his herd of good cows, and his daughter, Lillian, is the pround owner of a small herd of her own. Gleason & Blazer are the owners of Sunnyside Robert by Count Augustus, a great roan and winner at Denver the past two years. "Bernie" Gleason is always pleased to show him, and Mrs. Blazer, his sister, is a great admirer of the red, white and roan.

J. Paul Jones is breeding to Baron Hedgewood by Parkdale Baron, and has been quite successful as a breeder. Thos. W. Roberts is using Western Stamp by Victor Stamp and Alger Peterson, Hector by Premier.

All those interested in good Shorthorns will do well to attend the sale. For catalogues send to Dewey Allen Carnahan, Elbert, Colo.

It's the Giant Sunflower.

Under the heading "Sunflower Silage Not Suitable for Milk Cows," The Producer, official organ of the American National Livestock Association, draws some erroneous conclusions from a recent Kansas experiment. This experiment, reports on which also appeared in Western Farm Life, was with wild sunflowers and not with Russian sunflowers, the domesticated variety, which differs from the wild sunflower as does Kherson from wild oats. The Producer mentions that the test was with wild sunflowers, but its heading and conclusions are quite evidently based on the reviewer's belief that it is the wild sunflower which our stock farmers are ensiling. This is rather a common error, many farmers having been misled by just such articles as that here mentioned. Some time ago even the reliable old Breeder's Gazette made the same error in editorial comment. If the farm journals are not clear the farmer reader cannot be blamed for falling into error.

We have been referring to the silage plant as the Russian sunflower, to distinguish it from the native wild plant, but that term is not appropriate. Prof. Kezer of Colorado Agricultural College calls our attention to the fact that the plant is an American development—the Indians are responsible for it—and that it was imported by Russia and there commercialized, whence it has come back to us. Why not call it the Giant American sunflower, or simply Giant sunflower?

The plant is a new discovery for use as ensilage at the higher altitudes where corn does not sufficiently mature and in latitudes of similar climatic limitations. Let us keep the record straight and seek to prevent confusion by failure to emphasize the fact that this is not the wild sunflower, but its highly domesticated and improved cousin, growing twice the size and containing essential elements of succulent and nutritious values, favorable both to milk flow and fleshing of farm animals.

Why not the Department of Agriculture name it officially, adopting Prof. Kezer's suggestion to drop the "Russian" and perhaps adding the word giant to distinguish the plant from the weed that made Kansas famous?

The protest of farm women against rural living conditions is said to be a chief factor in the migration from country to city.

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the advertiser signed a contract for space with a sigh. He was gambling and he knew it.

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Today he buys advertising space with the same certainty that he buys any other commodity. It is measured just as surely as the coal for his furnace is measured.

The measuring machine is the Audit Bureau of Circulations and the A. B. C. report on a publication is his certificate from an impartial weighmaster.

The best publications in the country supply A. B. C. reports to their advertisers.

WESTERN FARM LIFE is one of that honorable company.

Red Seal Dry Batteries Guaranteed

Best For Every Farm Use

Red Seal Batteries spark strongest—last longest—always dependable. Have the confidence of all power farmers.

Ask Your Dealer

Every "Red Seal" he sells is guaranteed. Ask dealer also for engine owners' handbook, free to users of Red Seal Batteries.

Manhattan Electrical Supply Co., Inc.
New York — Chicago
St. Louis — San Francisco.
Factories in Jersey City, St. Louis, Ravenna, O.

Let's go

The sure way to put pep into your job on a rainy day is to get into a

FISH BRAND Reflex Slicker

There is a FISH BRAND garment for every kind of wet work or sport

DEALERS EVERYWHERE

A. J. TOWER CO.
ESTABLISHED 1836
BOSTON MASS.

TOWER'S FISH BRAND

2024

DE LAVAL CREAM SEPARATORS

The World's Standard by which all other separators are judged and valued—from 35% to 75% efficient.

The De Laval Separator Co.
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Earning Your Way

Many a young man or young woman fails to get a much desired business education because of a lack of sufficient funds to meet the expense.

Let us secure you employment so you may EARN your own expenses while in attendance.

Write for our catalogue and information about "Earning One's Way." New classes every week.

Central Business College

211 Fifteenth Street, DENVER
E. A. Van Gundy, President.
Accredited School. 34th Year.

O. J. Snyder
SADDLES

Best in the West.

Send for our new No. 20 Catalog, just out.

1535 Larimer St., Denver, Colo.

We Fix Radiators

AND FIX 'EM "RIGHT"

Honey-Comb Cores installed in automobile, truck and tractor radiators. Write for price list and information booklet.

PARAGON AUTO RADIATOR CO.
1455 Court Place Denver, Colo.

Lee Union-Alls

The most popular work and play garment in America.

The millions of Americans who are wearing LEE UNION-ALLS insist on the trade-mark not merely because of the great comfort and convenience of these nationally famous garments but because they reduce substantially the high cost of living.

They're not Union-Alls Unless they're Lee

Dept. No. 4148.

The H. D. Lee Mercantile Co.

Kansas City, Mo. Kansas City, Kas. Minneapolis, Minn. St. Louis, Mo. Los Angeles, Cal. South Bend, Ind. Trenton, N. J. Chicago, Ill. San Francisco, Cal.

"Just Like Dad's!"

A Perfect Cow Stanchion

Tubular in construction and there are no sharp corners to injure the animal's neck.

Full description and price upon request.

Fred N. PLATTNER

1609 Wazee Street. Denver, Colo.

We Invite You

To test ANY BLACGLEG AGGRESSIN ON THE MARKET, regardless of price, and compare results.

Many large cattlemen have done this and are now using OUR product. It does not clog the needle.

20c per dose—Why Pay More? Write, Phone or Wire.

THE U.S. BLACKLEG SERUM CO. INCORPORATED

STOCKYARDS STATION, DENVER, COLO.
OKLAHOMA CITY, OKLA.

Sell Your Milk---and Feed A. & C. Calf Meal

It Costs Only One-Third Of What Your Milk Sells For

It contains all necessary food elements to fatten calves **quickly and** keep them in good condition. Most dealers carry it in stock or **will order** it for you.

ORDER FROM YOUR DEALER

IN 25, 50 OR 100 POUND SACKS.

If your dealer cannot supply you we will ship you direct. A. & C. CALF MEAL is sold with a guarantee to give results or money refunded. A trial order will prove that you can raise better calves for one-third what it now costs you to raise them on milk. Manufactured and guaranteed by

ADY & CROWE MERCANTILE CO.
1900 Fifteenth St. Denver, Colo.

$25.00 Sweep Feed Grinder | $31.00 Galvanized Steel Wind Mill.

We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.

CURRIE WIND MILL CO.,
610 E. Seventh Street, Topeka, Kansas.

Only $2 DOWN ONE YEAR TO PAY

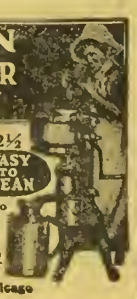
$44 Buys the New Butterfly Jr. No. 2½ Light running, easy cleaning, close skimming, durable. EASY TO CLEAN

NEW BUTTERFLY Separators are guaranteed a lifetime against defects in material and workmanship. Made also in four larger sizes up to No. 8 shown here; sold on

30 DAYS' FREE TRIAL

and on a plan whereby they earn their own cost and more by what they save. Postal brings Free Catalog Folder. Buy from the manufacturer and save money. (21)

ALBAUGH-DOVER CO., 2129 Marshall Bl. Chicago



Big Money Boring Wells

One Man One Team

Have water on your own farm. In spare time make wells for your neighbors. It means $1000 extra in ordinary years, double that in dry years. No risk—no experience needed.

Outfits for Getting Water Anywhere

Earth augers, rock drills and combined machines. Engine or horse power. *Write for easy terms and free catalog.*

LISLE MFG. CO.,
Box 743 Clarinda, Iowa

Proposed Milk Marketing Plan for City of Denver.

A plan is well under way in the counties surrounding Denver for the marketing of the producers' milk. The dairy situation is in a very critical condition at this time. The producer of milk tributary to Denver is getting less for city supply, bulk, whole milk, 35 per cent fat, than any other city of its size in the United States, excepting only a few of the small towns in the eastern dairy belt of ten to twenty-five thousand. A careful survey among dairymen in this county shows that there is hardly a milk producer but what has his cows for sale, and all that troubled him was that every other dairyman was of the same notion, hence cows would not bring on the market more than 60 to 75 per cent of what they cost a little over a year ago. One producer sold fourteen head of good grade Holsteins that cost him $165 per head fifteen months ago for around $85. Denver at this time is shy on milk and is reaching out 20 miles farther than usual to get its supply.

Farmers are given the privilege of collective bargaining if they want to use it and the marketing project well under way takes advantage of that recourse. A close corporation has been formed by the breeders and Farm Bureaus of the six counties surrounding Denver that is not for profit. The breeders are interested from the standpoint of increasing the efficiency of the herd by using purebred sires and purebred females, but with the price of milk where it is it is mighty hard to interest producers in purebred stock. The sale of this stock is handicapped because the producer of milk is not getting cost of production. The Farm Bureau is interested because this kind of work is in line with the purpose of the organization, to make farming a better and safer business. The Jefferson County Farm Bureau has indorsed this plan and organization and instructed the county agent to do whatever he can to make the facts plain to the producers. It is being handled as a joint Farm Bureau and breeders' proposition.

Under the collective bargaining privilege the law states that it is legal, providing said association does not make over 8 per cent. This means that if a surplus does accumulate it must be turned back to the producer. This association states in the contracts that it is a non-profit organization. If they did take a profit the association would not have the privilege of collective bargaining. The officers of the association are Arthur Ponsford, president; Carlos W. Hall and L. C. Donley, vice presidents; E. J. Linquist, treasurer; Wallin G. Foster, secretary. Plans are for taking on the board the dairy committeeman of two or three Farm Bureau organizations from Douglas, Adams and Boulder counties.

The secret of success of this plan is in the very stringent contracts. The reason for the failure of past co-operative organizations of farmers is that the farmer could change his mind the next week if some one offered him more money, which usually was for the express purpose of breaking the association, and the association gradually died. This cannot happen with this organization as the contract is just as binding as it could be made. The dairyman agrees to make the association the exclusive marketing agent, he agrees to skim his milk if this becomes necessary, he agrees to pay never at any time over one cent per gallon and that only after the association has got a raise in price, and if that one cent per gallon piles up a surplus, that surplus must be turned back to the producer. He agrees that in case he breaks his contract he will pay all expenses of a suit and five dollars per day for every day that he sells milk outside the association. The association agrees to use its best efforts at all times to sell the milk and cream and is liable for any negligence, fraud or deceit. Plans are to test the milk at the association offices, to buy feed cooperatively, to increase the consumption of milk by presenting to the consumer the facts as to the food value of milk, and to present to the consumer the cost of production of this milk, and other items of importance to the dairyman.—Jefferson County Farm Bureau Reporter.

Water users under the Salt River Valley project will pay a total of $5.40 an acre for water and assessments for the year beginning October 1, 1920. Water this year will cost $1.87½ a foot. There is also an assessment for drainage, construction work, etc., which brings the cost of the first two acre feet up to $5.40 an acre.

Grand View Grange Fair.

Grand View Grange in Arapahoe county, three miles east of Littleton, annually holds a community fair that is winning fame for the neighborhood. Each season has witnessed greater interest, better exhibits and keener competition. On September 27 the climax was reached in a show of farm crops and livestock that was truly representative of a district farmed by progressive people who take pride in their work and enjoy the friendly competition for ribbons at a community fair. Not only were the farmers and their families from the immediate neighborhood present, but Littleton, the county seat, was represented by scores and there were many families from the Clark Colony and more distant neighborhoods. The Curtis brick school was used as the agricultural building, the old Grange hall for the home economics exhibits, and livestock was displayed in pens and stockades outside.

The attendance was estimated at 700. A program of sports including baseball, tug-of-war and foot races was carried out. The livestock division was especially strong in draft horses and mules, including a Percheron stallion from Wyldemere Farm (J. B. Benedict), another of the same breed from the Great Western Sugar Company's Littleton farm, and some of H. Bert Cave's (Woodlawn Breeding Farm) famous Belgians. The dairy cattle exhibits consisted of a few purebred and grade Holsteins and some Milking Shorthorn grades. In hogs there were some good Pig Club exhibits, giving evidence of the practical work done by J. T. Robertson, county club leader.

The agricultural exhibits showed quality in all lines. There was a good showing of irrigated garden crops—tomatoes, canteloupes, watermelons, cabbage, cauliflower, cucumbers, pumpkins, squash and the like; a fine showing of potatoes, dry and irrigated, and a display of small grains and corn, in sheaf stalk and peck measure.

Notable among the general exhibits was that made by Henry Breymaier of the Curtis community, whose farm lies across the road from the schoolhouse. He showed dry land crops and took first premium on Turkey Red winter wheat, second on Marquis spring wheat and sweepstakes on general dry land exhibit. He showed Pearl and Ohio potatoes, white flint, Swadley and yellow dent corn, white beans and other field crops, all evidencing quality and artistically displayed.

There were many other displays worth mentioning, but space limitations prevent further detail. It was a fair that did credit to the Grand View Grangers and the efficient committee on arrangements and it indicated that there was perfect co-operation between the Grange and the Farm Bureau. County Agent H. E. Vanderlip was there rendering service where needed. The farmers were doing the work in true Farm Bureau fashion. It was a complete demonstration of community co-operation. This observer was impressed by the undercurrent of good will and good cheer.—A. T. S.

Inflammation of the Udder.

We have a cow that has been fresh about three months. Several weeks ago we first noticed her milk was bloody. She is not that way every day, but quite often. Can you give us some information as to what to do and what may be the cause for same.—A.H.B., Jefferson Co.

There is inflammation of the glandular structure of the udder, probably due to infection. The clotting of milk in the udder is caused by acidity incident to bacterial invasion. A chronic inflammation of the mammary glands is most likely to follow an acute attack but may appear, with clotting of the milk or bloody milk, with very little heat, swelling or pain. This condition usually becomes normal within a few weeks without special treatment. A solution of boric acid, ten grains to the ounce of water, may be injected through a sterile milk tube, with beneficial results in some cases. Massaging the udder with mild liniments will be helpful. Also laxative food and regular milking.—G. H. G.

Question of Cruelty to Animals.

Can a person be prosecuted under the humane laws for holding stock that he has taken up for trespass, for 36 hours without food or water? Could it be called cruelty to animals to do so?—L. E. H.

This would be a matter for a judge or jury to decide on the evidence to be presented. The proper procedure would be for you to file complaint with the district attorney at your county seat. He would advise you whether the circumstances under which the stock had been held were sufficient to justify arrest on charge of cruelty.

HUDSON SUPER SIX

The Exclusive Super-Six Motor Gives This Advantage

From Men Who Do Not Own Hudsons Comes An Interesting Expression on Super-Six Performance

Many men who covet its abilities learned to admire Hudson from the viewpoint of the "man in the other car." Perhaps you, too, have noted the characteristic all Hudsons reveal when fast going without exceeding the speed limits, is a factor.

Alertness and immediate response to the throttle accounts for the way Hudsons take advantage of every driving opportunity. There is no motor labor.

When Driver and Car Act as One

You frequently hear Hudson owners speak of the way their cars answer as though they were a part of their own impulse. Never a sense of the mechanical. All feeling that there is a motor and complicated mechanism is absent.

No wonder Hudson owners are so partial to their cars. And no wonder other motorists are forced to recognize the Hudson quality.

Pride of ownership to many means beauty of line and the qualities that excite admiration while the car is inactive. In those particulars the Super-Six in every type of design meets every wish. But it is pride of performance that excites the greatest praise for Hudson—whether it be in establishing world records for speed, acceleration and mountain climbing, or in the constant uninterrupted and therefore economical operation required in private service.

Yet Hudson's supremacy means no added complications, weight or size. It results from an exclusive Hudson invention, which added 72% to the power of motors of its size, and increased efficiency by 80%.

A Leadership That Has Stood for Five Years

For five years that invention has kept Hudson foremost in performance. And since its discovery and adoption Hudson has always been the largest selling fine car in the world.

The unremitting study, experiment and development of years has made the present Hudson a finer car in many ways than those earlier Super-Sixes. No rival challanges its supremacy by official proof.

You will best assure delivery when you want it by speaking for your Hudson promptly.

Hudson Motor Car Company, Detroit, Michigan.

(4016)

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Stephens' New Trappers' Book tells you how. Coyotes, Muskrats, Skunks, Wild Cats and all other Western Furs are selling in Denver at prices which will bring you big profits.

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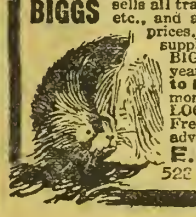

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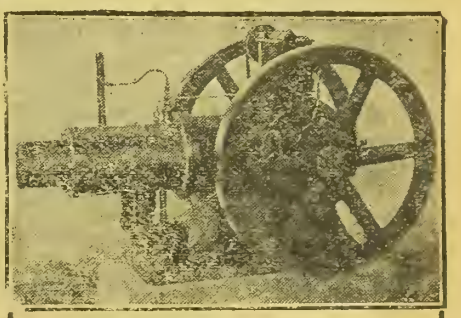

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An engine built in the west to solve western power problems.

No electrical equipment, no carburetor, no valves. Fool proof and economical. Runs on kerosene or low grade fuel oils. Starts quickly. Hundreds in use. Unlimited guarantee.

Buy a HASSELL and forget your engine troubles.

HASSELL IRON WORKS CO.,
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Manufacturers (for 35 Years)
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We want one exclusive representative in each locality to use and sell the new Mellinger Extra-Ply, hand made tires. Guarantee Bond for 8000 Miles. (No seconds). Shipped prepaid on approval. Sample sections furnished. Do not buy until you get our Special Direct Prices. Write

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YOU certainly want to save money, and you would like to have better bakings.

Then use Calumet. It's the biggest thing you can do to improve the quality of your bakings—and lower baking costs.

Calumet is made in the largest, most sanitary Baking Powder Factories in the World. No Baking Powder is made under better conditions—none can be better in quality.

It contains only such ingredients as have been officially endorsed by the U. S. Pure Food Authorities. An absolute guarantee that it is pure.

RAISES THE QUALITY—LOWERS THE COST OF ALL BAKINGS

CALUMET BAKING POWDER

"BEST BY TEST"

It received highest Awards, World's Pure Food Exposition, Chicago — Paris Exposition, Paris, France—positive proof of its superior merit.

It is used by more housewives, domestic scientists and chefs than any other brand. That would not be the case, if it were possible to secure a higher quality leavener.

It is sold at a moderate price. All you have to do is to compare costs to determine how much you can save by buying Calumet.

Pound can of Calumet contains full 16 oz. Some baking powders come in 12 oz. instead of 16 oz. cans. Be sure you get a pound when you want it.

Calumet Cream Cake Recipe

—3 cups pastry flour, 3 level teaspoons Calumet Baking Powder, ½ cup butter, 1½ cups granulated sugar, Yolks of 3 eggs, ¾ cup cold water, Whites of 3 eggs, 1 teaspoon orange extract. Then mix in the regular way.

Free Trial

Let us send this brand new Oliver to you for free trial. Not a penny in advance. Try it as if it were your own. If you decide to keep it, pay us at the rate of $4 per month. Price $64 — was $100. The finest money can buy. Over 800,000 Olivers sold.

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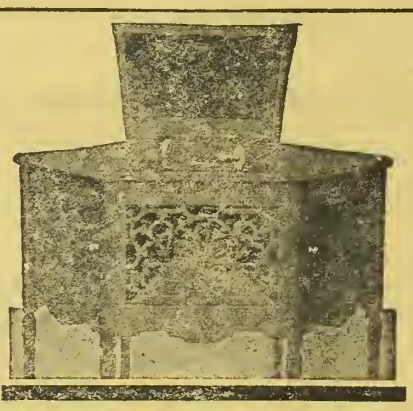

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If you want a phonograph with no "tin can" in it, and no needle scratch, hear

The Electrella Reproducograph

"World's Greatest Talking Machine"
NO SCRATCH! NO BLAST! NO ECHO!
TRUE REPRODUCTION!
There is dealer territory open.

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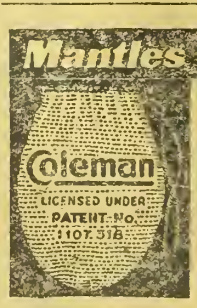

And Give Better Light

Reinforced base on every Coleman mantle. Stands up under rough usage. Outlasts all others. Gives the most light. Made in our own factory by special patented process. Price per doz. $1.50 net. If your dealer can't supply you order from nearest office, Dept. C33

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We Specialize On Watches and Watch Repairing

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Rates $1.00 per Day and Upward.

STOCKMENS' HEADQUARTERS

18th, CORNER OF LARIMER ST.

The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Spring and Autumn.

Every season hath its pleasures;
Spring may boast her flowery prime.
Yet the vineyard's ruby treasures
Brighten Autumn's soberer time.
So life's year begins and closes;
Days tho' shortening still can shine;
What tho' youth gave love and roses,
Age still leaves us friends and wine.

Phillis when she might have caught me,
All the Spring looked coy and shy,
Yet herself in Autumn sought me,
When the flowers were all gone by.
Ah, too late—she found her lover
Calm and free beneath his vine,
Drinking to the Spring-time over,
In his best autumnal wine.

Thus may we as years are flying,
To their flight our pleasures suit,
Nor regret the blossoms dying,
While we still may taste the fruit.
Oh, while days like this are ours,
Where's the lip that dares repine?
Spring may take our loves and flowers,
So Autumn leaves us friends and wine.

—Thomas Moore.

Fairs for the Fair.

Fairs for both the fair sex and the otherwise fair or just, have been the order for the past month and the women will be interested in some of the big points in their special lines. "Big points" is used advisedly, for there were so many "points" that the whole of Western Farm Life could not give them all.

There have been two fairs in the state where more stress was placed upon women's work than in any other counties. These were the Logan and Mesa county fairs. At all fairs visited, however, the women's work is growing in interest, has larger exhibits and more exhibitors, who show an increasing tendency to show only first-class stuff.

In Logan county there were six booths devoted to women's work alone. These booths were arranged by the women of six different communities, Peetz, Padroni, Mount Hope, Iliff and Kelly, and each booth would have been a credit to a county fair.

They had tried to stress in each booth some project followed in their work with the home demonstration agent, Miss Susanne Thompson. Three had unusually good exhibits of canning, two had home-made dressforms, one had a fly trap, practically all of them had an exhibit of some very practical use for old garments or the sugar or flour sacks. These took the form of made-over dresses, hats, underwear, or rugs. To say that the women of Logan county treated these booths as just points of interest isn't doing justice to what happened, for every women's club in the county wanted to see what the women of a particular community or all communities had brought in to show, and there was a constant crowd of interested spectators around every booth. There were two or three women in charge of each one all the time. The very faithful few are always weary but joyful for work well done, and from things said it is safe to say there will be community exhibits made by women in Logan county again next year. Here's success!

To the women of Mesa county belongs the credit of having the largest exhibit of women's work in Colorado. The State Fair exhibit in both fancy work and pantry stores was smaller by about one-half. Mesa county's was exhibited in community style as it had been in Logan county—so that the aggregate was not so staggering as it really was, to the judge at least.

To begin on the canned goods. Those Mesa county women certainly know how to put up fruit, vegetables, marmalades, butters, jams, preserves, pickles—whoa—we can't stop, once we get started talking about it. To some of our uninitiated eyes apple butter looks like apple butter, plus—or minus—spices in quantities. But, no sir—you can't fool a woman from the orchard lands—"that's from snow apples, or this looks like Jonathan culls"—and so it goes through the best kind of pear for preserves and the most beautiful grapes for jelly, and woe be unto the judge who doesn't know when a jelly's proper color or a jam's a jam, or a marmalade isn't!

They stood by and watched the judge test jellies, perhaps as high as eighteen entries in a single class, watched while she opened every glass, took a teaspoonful off the top, and cut for edges, tenderness and "stand up" qualities, and gazed for color. It was better than many demonstration meetings, for, all honor unto canning demonstrators, experts had made most of the jelly shown there.

When it came to fancy work and flowers the same staggering aggregate held good and quality was the order of the day. Beautiful embroideries, crochets, quilts, garments of all descriptions kept the workers literally "snowed under" from early morn till dewey eve until all the "blues" and "reds" were placed.

Two things fairs have shown this year, particularly the two fairs mentioned. One is that the same standards of excellent workmanship hold for both town and country women, for honors in baking, canning and sewing were about equally divided and the glory of good spirit and fair play goes to both groups. The other point is that the community exhibit and community spirit are necessary to make the county fair a success. It means a centralization of effort and a comparison of this centralized effort from one community to another. That is worth the time and patience expended. It isn't my community, nor your community, but our community and our county.—E. D.

How to Make Apple Butter.

Apple butter has probably not lost its old-time popularity, but it does not seem to be made in such generous quantities, nor in so many homes as formerly. There is no better way to use good apples and the sound portions of windfalls, wormy and bruised apples, than to make them into butter. While almost any apples will make good apple butter, those which are of good quality and will cook well are most satisfactory. Varieties of coarse texture naturally make a rather coarse product, unless it is put through a colander or wire sieve. Such varieties ought to be made into apple sauce and be put through a colander or wire sieve before adding them to the boiled cider.

Sometimes sweet apples are used with tart apples, the usual proportion being one-third of the former to two-thirds of the latter. Over-ripe apples are not desirable, but if they must be used, a little vinegar should be added to give some snap to the butter. The amount of vinegar required must be determined by the taste. Only fresh sweet cider, or commercial sterilized cider should be used. This should be boiled down to about half its original quantity. If boiled cider is canned or bottled hot in sterilized containers it will be available for future use in making apple butter.

The peeled and sliced apples may be cooked in the boiled cider to make the butter in one operation, or they may be made first into apple sauce, which is then cooked in the boiled cider. With apples of coarse texture the latter method is no doubt preferable. Otherwise the method to be used is one of personal choice, as both make equally good butter. The cooking should be continued until the cider and apples do not separate and the butter, when cold, will be as thick as good apple sauce. The thickness is determined at frequent intervals by cooling small portions.

It usually takes about equal quantities of sweet cider and peeled and sliced apples to make butter of the right consistency. In other words, 5 gallons of sweet cider should be boiled down to 2½ gallons, and 5 gallons of peeled and sliced apples should be added to it either uncooked or as apple sauce.

Two of the essentials of making good apple butter are long, slow cooking (4 to 6 hours), and constant stirring.

If sugar is used, it should be added after the cooking of cider and apples is about two-thirds done. About a pound of either white or brown sugar is the usual proportion per gallon of apple butter, but more or less (or not any) may be used to suit taste.

Apple butter is spiced according to taste, about half a teaspoonful each of ground cinnamon, cloves, and allspice being used for each gallon. These are stirred into it when the cooking is finished.

While still boiling hot, apple butter should be packed into hot, sterilized glasses, or hermetically sealed stone jars, with tightly fitting covers, and be sterilized in steam as follows: Set the containers filled and with the tops on,

in a vessel fitted with a false bottom and deep enough to hold them, pour in a little water, put on the cover to hold in the steam, and set over a fire. Begin to count time when the steam starts to escape, and after five minutes for quart or smaller sizes, ten minutes for half gallon sizes, and fifteen minutes for gallon sizes, take the containers out to cool; then set them away for future use. Do not disturb the covers until the apple butter is to be used. If the covers do not fit tightly, place waxed or oiled paper in them to make a tight fit before sterilizing. This sterilizing is for the purpose of preventing any molding, spoiling, or infection of the top layer of apple butter, and also to take the place of paraffin, which is now quite expensive. All fruit butters and similar products should be sterilized in this way, but if this cannot be done then hot paraffin should be poured over the fruit butters to protect them from spoiling.

Good apple butter is often made without the use of cider. Enough water is added to the peeled and sliced apples to make a thin apple sauce and this is allowed to cook very slowly, or simmer over a low fire for 3 or 4 hours. Brown rather than white sugar is usually used, being added when the cooking is two-thirds done. A pound per gallon is usually sufficient; but this amount is a matter of taste, as is also the amount of cinnamon, allspice and cloves to be added when cooking is done.—C. P. Close, Pomologist, U. S. Department of Agriculture.

Our Fashion Service.

All patterns 12 cents each. Address Western Farm Life, Pattern Department, 1518 Court Place, Denver, Colo.

Read This Before Ordering: Patterns ordered through this magazine are mailed promptly from the factory at Brooklyn, N. Y., and arrive in 10 to 12 days from time order reaches Western Farm Life. Be sure to specify size and number of patterns. Write your name and postoffice address plainly to avoid delay. These patterns are handled at cost, as a service to our women readers. The price of 12 cents includes postage.

3043.—A Good School Dress. Here is a splendid style for gingham, chambray, Indian head, linen, drill, gabardine or serge. One could have plaid silk for collar, cuffs and belt or have these parts of self material, with braid or embroidery for decoration. Cut in sizes 8, 10, 12 and 14 years. Size 10 requires 3⅜ yards of 44-inch material.

3352—Attractive Model in One-Piece Style. Cut in sizes 12, 14 and 16 years. A 14-year size requires 3 yards of 38-inch material. As here portrayed, taffeta was used with embroidery in floss. This is a good style for wash fabrics, woolens, cloth, combination of material and lingerie fabrics, also crepe, crepe de chine, and net.

3347—New and Stylish Costume for Slender Figures. Cut in sizes 16, 18 and 20 years. A 16-year size will require 4¼ yards of 38-inch material. This style is suitable for satin, taffeta, serge, velveteen, crepe, velours, duvetyn and suitings. The sleeve may be finished in wrist or elbow length.

3366—A Popular Model. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38-inch size will require 4½ yards of 40-inch material. Braided serge or duvetyn would be attractive for this style, or satin, taffeta, tricotine and velveteen. The dress measures about 1¾ yards at the foot.

3350—Comfortable Under Garment. Cut in sizes 36, 38, 40, 42, 44, 46 and 48 inches bust measure. A 38-inch size will require 2½ yards of 36-inch material. Long cloth, nainsook, batiste, crepe, linen, silk and satin, lawn, dimity and crossbar muslin are good materials for this style.

3094—Simple Dress for Work or Leisure. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. For comfort, convenience and attraction, this model has much to recommend it. The lines are simple, and the garment may be made for service, or as a "porch" or "afternoon" dress. Foulard, taffeta, serge, gabardine, crepe de chine, voile or poplin would be nice for a "dressy" dress. Developed as a work dress it would look well in gingham, chambrey, linen, lawn or percale. Size 38 requires 6⅛ yards of 36-inch material. Width of skirt at lower edge is about 2¼ yards.

3354—Stylish Frock for Mother's Girl Cut in sizes 6, 8, 10 and 12 years. A 12-year size will require 4½ yards of 38-inch material. One may have this without the plastron and with long or short sleeves. The skirt and over blouse show attractive style features. Serge, taffeta, satin, velveteen, linen, check suiting, plaid woolens and mixtures may be used for this design.

3368—Becoming Dress for the Growing Girl. Cut in sizes 6, 8, 10 and 12 years. A 10-year size will require 4¼ yards of 36-inch material. Gingham, seersucker, lawn, linen, serge, gabardine, velveteen and Jersey cloth are good for this style.

Fall and Winter Catalogue.

Send 15 cents in silver or stamps for our up-to-date **Fall and Winter 1920-1921 Catalogue,** containing over 500 designs of ladies', misses' and childrens' patterns. A concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various, simple stitches), all valuable to the home dressmaker. Catalogue price 15 cents; all patterns 12 cents each.

Review of Crop Exhibits at Pueblo.

(Continued from Page 4).

Rodgers of the Larimer County Farm Bureau, with a score of 97.2. This is Ben's first year in pig club work, his score being remarkably high; in fact, only three-tenths behind the first prize winner.

Third was John Elliott of Pueblo with a score of 95, who is handling Duroc Jerseys.

This contest was judged by J. T. Tingle, manager of the American Guarantee Company's hog farm at Hooper, Colo., and formerly state pig club leader. The boys were judged 50 per cent for ability to put on gain economically, 40 per cent on placing and 10 per cent on story and record. This means that their entire season's work was taken into consideration in making the awards, which were not on stock judging alone.

The stock judging teams were composed as follows: Kit Carson—Carol McDonald, L. G. Davis, Royal Burkholder.

Adams—Wayne Hess, Harry Mencimer, R. Flanders.

Boulder—Merrill Linton, Clifford Brand, Emslie Linton.

Montrose—Frank Little, Ruth Dunlap, Robert Shafer.

The above were all pig clubs, there being 42 entries in this class. There was one calf club, the winner being James Tomberlin of Merino, Logan county, with Shorthorns.

In canning clubs Morgan county received first prize, Denver second, and Logan county third.

In poultry clubs, culling was the principal feature, Logan county winning first and Kit Carson second prize.

Larimer county won in sewing club work, with Saguache second, and Douglas county third.

Practical Encouragement.

Western Farm Life:

I just now came across a copy of your paper, and it is the first time I have seen in any paper a defense of the Federal Farm Loan system, so I want to encourage you with my subscription of one dollar.—**D. A. McHugh, Tacony, Colo.**

Great Majestic

The Range with a Reputation

Delightful, consistent baking results make users of great Majestic ranges enthusiastic.

These ranges have long been renowned for their fuel-saving as well as their sure-baking qualities. Heat can be accurately controlled and utilized with utmost economy.

Moreover, Great Majestic ranges are easy to keep bright and sanitary.

All surfaces are perfectly smooth. The beauty of the burnished blue cooking tops is ever-lasting—an occasional rubbing-over with paraffine is all the care needed.

Great Majestic ranges are made in many regular and combination styles with or without legs. They are sold by leading retailers of ranges in practically every county in forty-two states.

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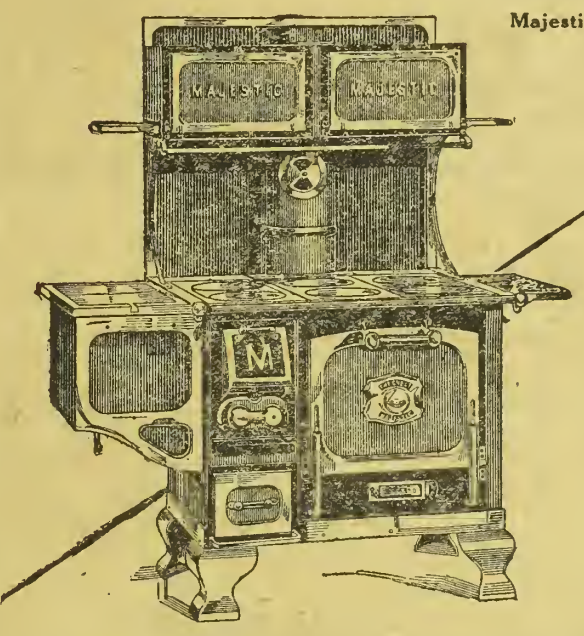
St. Louis, Mo.



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Think what that means to you in good hard dollars with the great demand for wheat at high prices. Many farmers in Western Canada have paid for their land from a single crop. The same success may still be yours, for you can buy on easy terms.

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For illustrated literature, maps, description of farm opportunities in Manitoba, Saskatchewan and Alberta, reduced railroad rates, etc., write Department of Immigration, Ottawa, Canada, or

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Dunn Block, Great Falls, Montana.
Canadian Government Agent.

WESTERN CANADA
Farm Lands
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At least one-half of all records must be kept from each order.

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The Chas. E. Wells Music Co.

Home of the Chickering.

1626 California Street Denver, Colo.

Shorty's got 'em breaking a wide open!

Buzzing on the Limited
West-O!

PETE ME BOY!

If you ever did have a doubt in your peppy old soul as to how Camels stand *nationally*, take a fly over the country! Gee, every time I swing around I see men smoking Camels or buying Camels or talking Camels! Every newspaper and magazine flashes Camel ads! Every billboard spills a scream about Camels!

Pete, you never can beat Camels expert blend of choice Turkish and choice Domestic tobaccos! Certainly does put it over either kind smoked straight! And say, do you get that mild Camel body! Oh gee, Pete, fire-up another Camel—That's the answer!

Now listen: I'm going to draw up some Camel ads and shoot 'em in and I'm going to tell the world whats-what about Camels! Bet you I can clean-up on a job like that—and it's all inspiration right from Camels themselves! For instance, Pete, I'm slapping this sketch down here to put you wise—Sav-vy? *I'll tell 'em old pencil, I see the point!*

I'll drop you a line from Chicago and tell you s'more! I'll have a baleful of stunts by the time this letter blows into your hands!

And—you know me, kid!

Shorty.

Camel

For Winter Eggs Use it NOW

RIGHT now—*today*—when your hens are building up after the molt—when your pullets are maturing and developing their laying organs—give them Pratts Poultry Regulator. It costs but a trifle—only about one cent a hen per month—but, as life-long users say, "*it does make hens lay.*"

Pratts Poultry Regulator

for nearly fifty years has been America's most popular poultry tonic and conditioner. It is a medicinal preparation, not a food—a natural tonic and health builder. Used daily at the rate of a rounded tablespoonful for each ten fowls, it strengthens the weakened molters—hastens the growth of the pullets—starts them laying early—helps keep them at it all winter. The *extra* eggs are *clear profit!*

Try this plan and get that extra profit. But be sure to use the genuine Pratts. Then we take the risk, because

"Your Money Back If YOU Are Not Satisfied"

There's a Pratt dealer near you. See him at once.

PRATT FOOD CO. Philadelphia Chicago Toronto

Makers of Pratts Animal Regulator, Pratts Cow Remedy, Pratts Hog Tonic, Pratts Dip and Disinfectant, Pratts Poultry and Stock Remedies

Pratts

P24

"The Heart of Virginia Keep"

This all-absorbing, gripping serial story is just starting. Turn to page 6 of this issue and begin this red-blooded American story now. You'll not want to miss a single issue.

State's Agricultural Progress Shown at Pueblo.

(Continued from Page 3)

people know the worth of your animals than through showing at the fair.

Windstorm Does Damage.

From the standpoint of attendance the fair left little to be desired during the first part of the week, but a severe windstorm on Thursday cut the gate receipts for that day about 50 per cent below expectations. Considerable damage was done to the temporary quarters in which the beef cattle were kept; the tent over the exhibit of the State Reformatory was completely wrecked and for several hours the canvass over the Pig club exhibits was in danger of blowing down, with the possible injury to some of the valuable stock. The storm emphasized the need for better housing of the livestock.

Tent and outdoor displays of farm machinery, tractors, trucks, autos, and equipment, were larger than ever. Farmers show greater interest with each passing year in devices that lighten labor and cut the cost of operations. This division of the State fair can be improved with the co-operation of the implement and equipment dealers.

Another splendid division was the poultry and pet stock show, which cannot be given a detailed review in these columns.

The Colorado State fair as a whole is as strong as it can be made under the handicap of insufficient state aid. It is showing improvement from year to year and it needs more universal support from the farming interests, in the way of exhibits as well as attendance.

State Fair Awards.

Holstein Friesian.

Judge—W. S. Moscrip, Lake Elmo, Minn.

Exhibitors—Spencer Penrose, Colorado Springs; W. G. Foster, Englewood, Colo.; P. K. Hudspeth, Pueblo; American Beet Sugar Co., Rocky Ford, Colo.; Hall Bros., Denver, Colo.; Modern Woodmen Home, Colorado Springs; R. P. Lamont, Jr., Larkspur, Colo.

Aged Bull—1, Penrose on Sir Pieterje Ormsby Fobes; 2, Modern Woodmen on Woodcraft Pontiac Johanna Lad.

Bull, 2 years old and under 3—1 and 2, Penrose on Columbine Piebe Changeling and Columbine Pietertje Pontiac.

Junior Yearling Bull—1, Penrose on Columbine Pontiac Valdessa; 2, Hudspeth on Sir Concordia Segis Pontiac Burke; 3, Hall Bros. on Western Champion Sir Beauty.

Senior Yearling Bull—1, Foster on King Johanna Cedarside Pontiac; 2, American Beet Sugar Co. on King Ormsby Fobes.

Senior Bull Calf—1, Lamont on S. O. S. Daffy Uneeda; 2, Foster on Segis Creamelle Pontiac Maria; 3, Penrose on Columbine Mercedes Valdessa.

Junior Bull Calf—1, 2 and 3, Penrose on Columbine Maid Valdessa, Columbine Surprise Valdessa, and Columbine Ormsby Rue Valdessa.

Aged Cow—1, Penrose on Columbine Fayne Johanna; 2, Hudspeth on Steven's Concordia Duchess; 3, American Beet Sugar Co. on Colorado Beauty Walker Johanna.

Heifer, 2 years old and under 3—1, Penrose on Columbine Valdessa Snowflake.

Senior Yearling Heifer—1, Penrose on Columbine Aurora Valdessa; 2, Foster on Avoca Lodge Butter Girl De Kol; 3, Penrose on Columbine Cheron Valdessa.

Junior Yearling Heifer—1, Foster on Sunny Flats Polly Walker; 2, Hudspeth on Win-o-Dee Iola Veeman Hengerveld; 3, Penrose on Columbine Mercedes Changeling.

Senior Calf—1, Penrose on Columbine Pledge Valdessa; 2, Hudspeth on Win-o-dee Concordia Segis Pontiac; 3, Foster on Fernal Calf.

Junior Calf—1, Penrose on Columbine Changeling; 2, American Beet Sugar Company on Colorado Smithdale Sally; 3, Hudspeth on Win-o-dee Aggie Wayne Segis.

Senior and Grand Champion Bull—Penrose on Sir Pietertje Ormsby Fobes.

Junior Champion Bull—Penrose on Columbine Piebe Changeling.

Senior and Grand Champion Cow—Penrose on Columbine Fayne Johanna.

Junior Champion Cow—Penrose on Columbine Pledge Valdessa.

Exhibitors' Young Herd—1, Penrose; 2, Foster; 3, Hudspeth.

Calf Herd—1, Penrose; 2, Foster; 3, American Beet Sugar Co.

Get of Sire—Penrose, 1 and 2; American Beet Sugar Co., 3.

Produce of Cow—Penrose, 1, 2, 3.

Guernsey.

Judge—W. S. Moscrip, Lake Elmo, Minn.

Exhibitors—W. L. Stone & Son, Pueblo; F. C. Kay, Pueblo.

Aged Bull—1, Stone on Robb of Hillside.

Junior Yearling Bull—1, Kay on Interloch May King.

Junior Calf—Stone on Robb of Stonemoor.

Aged Cow—1 and 2, Kay on Fancy Star Chief Beauty, and Jessie Mamie; 3, Stone on Vera's Blossom.

Heifer, 2 years old—1, Kay on Countess of O. K. Farm; 2, Stone on Vera of Stonemoor.

Senior Yearling Heifer—1, Stone on Stonemoor Blossom.

Junior Yearling Heifer—1, Kay on Interloch Star.

Junior Heifer Calf—1, Kay on Interloch May Rose; 2, Kay on Interloch Venus.

Both championships to Kay.

Milking Shorthorns.

Judge—W. S. Moscrip, Lake Elmo, Minn.

Exhibitors—Pine Valley Dairy & Farms Co., Colorado Springs; J. B. Benedict, Littleton, Colo.

Bull, 2 years and under 3—1, Pine Valley on Master Sam; 2, Benedict on Royal Glenside.

Junior Yearling Bull—1, Pine Valley on Pine Valley Darnley.

Senior Bull Calf—1, Pine Valley on Pine Valley Clifton.

Junior Bull Calf—1, Benedict on Kirk Levington Beau.

Aged Cow—1, Pine Valley on Pine Valley Lady.

Heifer, 2 years old and under 3—1, Benedict on Venus 5th.

Senior Yearling Heifer—1, Pine Valley on Roan Clara.

Junior Yearling Heifer—1 and 2, Benedict on Wyldemere Princess and Wyldemere Baroness.

Senior Heifer Calf—1, Pine Valley on Pine Valley Daffodil; 2, Benedict on Wyldemere Ava; 3, Benedict on Blossom Bates.

Junior Heifer Calf—1 and 2, Pine Valley; 3, Benedict on Marion Bates.

Senior Champion Bull—Pine Valley on Master Sam.

Junior Champion Bull—Pine Valley on Pine Valley Clifton.

Senior Champion Cow—Pine Valley on Pine Valley Lady.

Junior Champion Cow—Benedict on Wyldemere Princess.

Grand Champion Bull—Pine Valley on Master Sam.

Grand Champion Cow—Benedict on Wyldemere Princess.

Exhibitor's young herd—Pine Valley.

Young herd—Pine Valley.

Calf Herd—Pine Valley.

Get of Sire—Pine Valley.

Produce of Dam—Benedict.

BEEF CATTLE.

Aberdeen Angus.

Judge—A. L. Weston, Denver, Colo.

D. D. Barr & Sons of Sanford, Colo., were the only exhibitors in this class. They won all premiums on a herd headed by Eran, an excellent type 2-year-old bull. In the cow class, he won on Prize Nora.

Herefords.

Judge—A. L. Weston, Denver, Colo.

Exhibitors—J. D. Canary, Littleton, Colo.; Dr. T. F. DeWitt, Denver; Gillette Hill, Denver; Colorado State Reformatory, Buena Vista; R. P. Lamont, Jr., Larkspur; L. C. Grant, Avondale, Colo.

Aged Bull—1, DeWitt on Mischievous, Jr.; 2, Canary on Repeater 2nd.

Two-year-old Bull—1, DeWitt on Beau Blanchard 75th; 2, Hill on Star Blanchard; 3, Canary on Repeater 12th.

Senior Yearling Bull—1, Hill on Repeater 170; 2, Colorado State Reformatory on Beau Blanchard 76; 3, DeWitt on Prince Imperial.

Junior Yearling Bull—1, Canary on Beau Gudgell 6th; 2, Lamont on Beau Domino; 3, Grant on Ted Mischief.

Senior Bull Calf—1, Canary on Repeater 55th; 2, Grant on Prairie's Model.

Junior Bull Calf—1, Canary on Repeater 63rd Jr.; 2, DeWitt on Colorado Fairfax; 3, Canary on Repeater 64th; 4, DeWitt on Punch; 5, Hill on Repeater 13th Jr.

Aged Cow—Hill on Miss Repeater 5th.

Heifer, 2 years and under 3—1, Hill on Miss Carrie; 2, Canary on Miss Repeater 15th; 3, Hill on Miss Repeater 18th.

Senior Yearling Heifer—1, Hill on Miss Repeater; 2, Hill on Miss Repeater 36th; 3, Canary on Miss Gay Lad 135th; 4, DeWitt on Normandy 2nd.

Senior and Grand Champion Bull—DeWitt on Mischievous Jr.

Junior Champion Bull—Hill on Repeater 170th.

Junior Yearling Heifer—1, DeWitt on Juliet; 2, Hill on Miss Mixer; 3, Hill on Miss Donald H 1st.

Senior Heifer Calf—1, Canary on Miss Repeater 66th; 2, Hill on Miss Donald H. 3rd.

Junior Heifer Calf—1, DeWitt on Lady Ideal; 2, Canary on Miss Repeater 68th; 3, Grant on Petunia; 4, DeWitt on Lady Blanchard; 5, Canary on Miss Repeater 65th; 6, Hill on Miss Repeater 211th.

Senior Champion Cow—Hill on Miss Repeater 5th.

Junior and Grand Champion Cow—DeWitt on Lady Ideal.

Aged Herd—Hill. Young Herd—DeWitt. Calf Herd—Canary.

Get of Sire—1, Canary; 2, Hill; 3, Canary.

Produce of Dam—Hill.

Shorthorns.

Judge—A. L. Weston, Denver.

Exhibitors—Maxwell-Miller Cattle Co., Steamboat Springs, Colo.; C. D. Hyatt, Monte Vista, Colo.; H. F. Harmon, Boulder, Colo.; Jay & Allan, Boulder, Colo.

Aged Bull—Maxwell-Miller on Princely Stamp.

Bull, 2 years old and under 3—1, Hyatt on Agamemnon; 2, Jay & Allan on Types Lad.

Senior Yearling Bull—1, Maxwell-Miller on Maxmill Pride; 2, Harmon on Royal Type.

Junior Yearling Bull—1, Maxwell-Miller on Max-mill Prefect; 2, Jay & Allan on Type's Lad 2nd.

Senior Bull Calf—1, Maxwell-Miller on Maxmill Victor; 2, Jay & Allan on True Thought; 3, Harmon on Advocates Ury.

Junior Bull Calf—1, Maxwell-Miller on Maxmill Royal; 2, Maxwell-Miller on Max-mill Silver; 3, Jay & Allan on Boulder Dale.

Aged Cow—1, Maxwell-Miller on Cloverleaf Lovely; 2, Jay & Allan on Ruth; 3, Jay & Allan on Royal Queen 16th.

Heifer, 2 years and under 3—1, Jay & Allan on Missie Sultania 4th; 2, Harmon on Scottish Lady 4th.

Senior Yearling Heifer—1, Jay & Allan on Lady Marquis.

Junior Yearling Heifer—1, 2 and 3, Maxwell-Miller on Lothian Lady, Max-mill Myrtle and Max-mill Acorn.

Senior Heifer Calf—1, Maxwell-Miller on Maxmill Susan; 2, C. D. Hyatt; 3, Jay & Allan on Carrie Blossom.

Junior Heifer Calf—1, Maxwell-Miller on Maxmill Lovely; 2, Maxwell-Miller on Max-mill Mina; 3, Jay & Allan on Vera Dale; 4, Harmon on Scottish Lady 5th.

Senior and Grand Champion Bull—Maxwell-Miller on Princely Stamp.

Junior Champion Bull—Maxwell-Miller on Maxmill Victor.

Senior and Grand Champion Cow—Maxwell-Miller on Cloverleaf Lovely.

Junior Champion Heifer—Maxwell-Miller on Max-mill Susan.

Exhibitor's Herd—Jay & Allan.

Young Herd—1, Maxwell-Miller; 2, Harmon.

Calf Herd—1, Maxwell-Miller; 2, Harmon.

Get of Sire—1 and 2, Maxwell-Miller; 3, Jay & Allan.

Produce of Cow—1, Jay & Allan; 2 and 3, Harmon.

SWINE DIVISION.

Duroc Jerseys.

Judge—L. A. Weaver, Columbia, Mo.

Exhibitors—Blue Ribbon Live Stock Co., Pueblo, Colo.; Caldwell Martin, Littleton, Colo.; Hart & Son, Longmont, Colo.; H. D. Rusler, Pueblo, Colo.; American Beet Sugar Co., Rocky Ford, Colo.; Geo. E. Morton & Son, Fort Collins, Colo.; W. L. Stone & Son, Pueblo, Colo; Burke & Kellogg, Olney Springs, Colo.; E. D. Hardman, Pueblo, Colo.; J. W. Brauer, Colorado Springs Colo.; R. O. Love, Colorado Springs, Colo.; Arthur & Potter; Colorado Agricultural College.

Aged Boar—1, American Beet Sugar on Cherokee; 2, Blue Ribbon Live Stock Co. on Blue Ribbon Sensation; 3, Morton & Son on Montaire Sensation; 4, W. L. Stone & Son on Stonemoor Sensation.

Senior Yearling Boar—1, Hart on Pathfinder the Great; 2, Burke & Kellogg on Red Pathfinder; 3, E. D. Hardman on Brae Side Orion.

Junior Yearling Boar—1, Brauer on Colorado Chief Sensation; 2, American Beet Sugar Co. on

FARMERS' AND STOCKMEN'S EXCHANGE

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LEGHORNS.

BUFF LEGHORNS—BEST LAYERS ON EARTH; have some classy cockerels. Champney(2057 South Broadway, Denver.

RHODE ISLAND REDS

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

SEVERAL VARIETIES.

CHAMPNEY'S POULTRY YARDS—IF IT WEARS feathers we have it, or will get it for you. Write us your wants. 2057 S. Broadway, Denver, Colo.

PET STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

NEW ZEALAND AND RUFUS RED BELGIAN hares, the very best weight, 6 to 10 lbs., according to age. All pedigreed stock; guaranteed safe delivery. Price from $5 to $10 each. J. C. Myers, Burr Oak, Jewell Co., Kans.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HOGS

BIG TYPE POLANDS, YOUNG BOARS AND gilts for sale. Write for breeding and particulars. Gad Barney, Haswell, Colo.

HIGH-GRADE DUROC JERSEY PIGS, $40 FOR males, $25 for females. Papers furnished if taken soon. L. A. Kieser, Aroya, Colo.

REGISTERED HAMPSHIRE BOARS, THREE last winter boars and four spring boars; big type, no better blood. Priced right for quick sale. Wm. H. Baker, Otis, Colo.

BUY YOUR DUROCS AT WEANING TIME, AND make the big profits yourself. I have prize-winning gilts and boars a few weeks old sired by champions that should be worth several hundred dollars each this year. Write for prices. J. N. Caldwell, Willow Grange Farm, Littleton, Colo.

CATTLE.

FOR SALE—REGISTERED SHORTHORN HEIFer with heifer calf at side. Johnson Bros., Erie, Colo.

FOR SALE—TWO SPLENDID REGISTERED Holstein bulls and bull calves. Prices right. Pedigrees furnished on request. Norman R. D'Arcy, 3 miles north of Parker, Colo.

FOR SALE—ONE REGISTERED HOLSTEIN bull, 4 years old. Captain Tehee Beets, Reg. No. 245945 H. F. H. B. from Austin D. Crile, State College, New Mexico. Dam, Aggie Tehee Beets, No. 184286 H. F. H. B. In 1050 lbs. butterfat class. Three hundred dollars will buy the above animal F. O B. car either Dedman or Des Moines, New Mexico For further information write the Bank of Dedman, Dedman, New Mexico.

GOATS.

MILK GOATS—GOOD SAANEN AND TOGGENburg grades. Write your wants. A. Waldsberger, 1259 Inca st., Denver, Colo.

FOR SALE—HEAVY MILKING SAANEN GOATS, bred to pure buck. Geo. T. Cramton, 4912 Hooker st., Denver, Colo.

SHEEP.

100 REGISTERED SHROPSHIRE EWES. A. M. Plumb Estate, R. F. D. No. 4, Box 47, Greeley, Colo. Phone Red 27R2.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

SEND FOR NEW FARM, RANCH LIST, 100 bargains. A. J. Simonson, Cooper Bldg., Denver, Colo.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wis.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

SHAWNEE, OKLAHOMA, CENTER OF A GREAT farming country. Write for free Agricultural booklet. Board of Commerce, Shawnee, Oklahoma.

OWING TO CHANGE OF OCCUPATION, I WILL sell my ranch and full blood Angus cattle and Percheron horses, or any portion of them. Address G. F. Lucore, Arriba, Colo.

FINE IRRIGATED RANCH NEAR DENVER—1,000 acres, 600 acres irrigated, best of water right; 225 acres in alfalfa; four sets of improvements. Priced $100,000, one-third cash. C. K. Davies & Son, 434 Foster Bld., Denver, Colo.

TWO STOCK AND DAIRY RANCHES IN ROUTT County, Colo. Will sell one or both; early water rights; A1 range rights; near town, good roads, good schools. Reservoir on the place stocked with trout. Write for particulars. Owner, Box 67, Yampa, Colo.

HEREFORD AND OTHER FINE CATTLE LANDS or farms that offer best opportunities. Eight months pasturage annually. Silage crops. Improved or unimproved lands. Wonderful mild winter climate. Write for our listings and terms. Railroad Farm Land Bureau, San Antonio, Texas.

DAIRY FARMS AND LANDS, WHICH OFFER splendid opportunities for dairying, with creamery and market right at your door. Also excellent for diversified and other farming. Ideal mild healthful climate. Schools, churches, railroad and other advantages. Write for listings, terms, etc. Railroad Land Bureau, San Antonio, Texas.

YOU CAN OWN A FARM FOR LESS MONEY IN Oklahoma and Arkansas than anywhere in the old thickly settled states; a little money and energy to clear virgin land will make a farm for the right man. Cheap lands, of good quality, along the Kansas City Southern Railway. Write to S. G. Warner, G. P. A., 432 K. C. S. Ry. Bldg., Kansas City, Mo.

SELL YOUR PROPERTY QUICKLY FOR CASH, no matter where located. Particulars free. Real Estate Salesman Co., Dept. 11, Lincoln, Neb.

REAL FARM OPPORTUNITIES IN TEXAS, where farming pays best. Best markets, schools, railroads and roads. Ideal, mild winter climate. Would you like to know of these opportunities? Write us crops you are interested in, livestock you want to raise, acreage you want, whether improved or unimproved, and terms wanted. We can then locate you ideally, where markets are guaranteed. Railroad Co-Operative Farm Bureau, San Antonio, Texas.

SAN LUIS VALLEY IRRIGATED FARMS—THE best land in the valley, under a first-class irrigation district; 125 acres, improved, adjoining Federal Aid Highway; 40 acres, improved, adjoining Federal Aid Highway; 40 acres, unimproved, ½ mile from Federal Aid Highway; 80 acres, unimproved, 1 mile from Federal Aid Highway; 20 acres, unimproved, 1 mile from Federal Aid Highway. Every foot can be irrigated and will raise a crop. Look at the crops on the above and adjoining lands and be your own judge. For prices and terms write or see owners. A. A. Salazar & Son. San Luis, Colo.

LIVESTOCK RANCH IN ARAPAHOE COUNTY, Colo., sub-dividing the famous old cattle ranch, Bo-Peep Meadows, about 4,000 acres in tracts. No. 1—1,240 acres, 100 acres sweet clover, 40 acres native hay, 60 acres now in alfalfa, 100 acres fine corn, balance good pasture; plenty of timber for shade and protection, watered by spring well, and windmill and all nicely fenced. A completely equipped ranch for dairy or pure-bred livestock. Good line of ranch improvements including water system. Located two miles from Deer Trail, on U. P. R. R. Price $45.00 per acre and exceptional good terms. C. K. Davies & Son, 434 Foster Building, Denver, Colo

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GUARANTEED ALFALFA SEED, $11.00 BU.; Sweet Clover, $12; Red Clover, $20; Timothy, $3.50; Sudan, $7 per bushel; Sugar, $16.50. Bonds accepted. Order now and save one-third. Meier Seed Company, Russell, Kans.

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GOVERNMENT AND RAILWAY MAIL CLERKS needed everywhere; high salary; permanent positions. Particulars free. Write Modern Institute, 455 Charles Bldg,, Denver, Colo.

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OLD HATS MADE NEW. S. M. BELWOOD, 1542 Court place, Denver.

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KENTUCKY HOMESPUN TOBACCO, 10 POUNDS $3; 20 pounds, $5. Rule Veal, Jonesboro, Ark.

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100,000 SACKS FOR SALE, SECOND-HAND. Western Sack & Burlap Co., 2727 W. Colfax ave., Denver, Colo.

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INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

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VIOLINS WITH COMPLETE OUTFITS FOR SALE on easy monthly payments; five days free trial. Write Miss Bertha Mardiss, Shawnee, Kans.

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PATENTS—BOOKLET FREE. HIGHEST REFERences. Best results. Promptness assured. Send model or drawing for examination and opinion. Watson E. Coleman, Patent Attorney, 624 F st., Washington, D. C.

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BUTTER WRAPPERS—FINEST PARCHMENT, pound size, neatly printed, guaranteed. By mail promptly at 100, 60c; 250, $1.25; 500, $2.00; 1,000, $3.75; postage prepaid. Home Specialty Co., Middleton, Idaho.

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KODAK PICTURES WELL PRINTED DOUBLE the pleasure you get from them. Mail your Kodak finishing to us. Write for price list and sample prints. Haanstad's Camera Shop, 404 Sixteenth street, Denver, Colo.

HONEY.

DELICIOUS NEW HONEY, 10-POUND PAILS $2.50; 60-pound cans, $13.00. You will find this honey pure, clean and nice. A. A. Lyons, Fort Collins, Colo.

"THEBESTO" ROCKY MOUNTAIN HONEY, light colored, thick, fine flavored; per can, five pounds net, postpaid, anywhere west of Ohio river, $1.50. Send remittance with order. The Colorado Honey Producers' Association, Denver, Colo.

Taxpayer B.; 3, Blue Ribbon Live Stock Co. on Long Sensation 5th; 4, Brauer on Pathfinder Orion.

Senior Boar Pig—, Martin on Edgemoor Principal; 2, Brauer on Golden Chief; 3, Hardman on Great Wonder's Colonel; 4, Martin on Edgemoor Orion King 2nd.

Junior Boar Pig—1, Blue Ribbon Live Stock Co. on Burke's Sensation-I-Am; 2, Colorado Agricultural College on Royal Chief; 3, Stone & Son on Alkali Wonder-I-Am; 4, Brauer on Proud Illustrator 4th.

Aged Sow—1, Martin on Edgemoor Juno; 2, Morton & Son on Lucy Wonder of Edgemoor; 3, Brauer on Pathfinder Goldfin 3rd; 3, Blue Ribbon Live Stock Co. on Lulu Long-E-Nuff.

Senior Yearling Sow—1, Hart on Miss Golden Pathfinder 3rd.

Junior Yearling Sow—1, Blue Ribbon Live Stock Co. on Highback Sensation Rose; 2, Brauer on Sensation Jazz Baby; 3, Blue Ribbon Live Stock Co. on Sensation Lady 2nd; 4, Stone & Son on Golden Topsy.

Senior Sow Pig—1, Blue Ribbon Live Stock Co. on Sensation Queen; 2, Martin on Edgemoor Ilelen 6th; 3, Hart on Miss Illustrator Orion 2nd; 4, Hart on Miss Illustrator Orion 5th.

Junior Sow Pig—1, Rusler on Rusler's Flashlight Sensation; 2, Blue Ribbon Live Stock Co. on Burke's Queen Sensation; 3, American Beet Sugar Co. on Cherokee's Campaignia; 4, Colorado Agricultural College on Walts Willetta 11th.

Senior and Grand Champion Boar—American Beet Sugar Co. on Cherokee.

Junior Champion Boar—Martin on Edgemoor Principal.

Senior Grand Champion Sow—Martin on Edgemoor Juno.

Junior Champion Sow—Blue Ribbon Live Stock Co. on Queen Sensation.

Exhibitor's Young Herd—1, Martin; 2, Blue Ribbon Live Stock Co.; 3, Hart; 4, Colorado Agricultural College.

Aged Herd—1, Blue Ribbon Live Stock Co.; 2, Stone & Son.

Get of Sire—1, Blue Ribbon Live Stock Co.; 2, Martin; 3, Hart; 4, Blue Ribbon Live Stock Co.

Produce of Sow—1, Hart; 2, Blue Ribbon Live Stock Co.; 3, Colorado Agricultural College; 4, Blue Ribbon Live Stock Co.

Futurities.

Senior Boar Pig—1, Martin on Edgemoor Principal; 2, Brauer on Golden Chief; 3, Morton on Edgemoor Orion King 2nd; 4, Arthur & Potter on Bearing Chief; 5, Morton & Sons; 6, Arthur & Potter on Chief Bearing; 7, Blue Ribbon Live Stock Co.; 8, Arthur & Potter on Western Bearing.

Senior Sow Pig—1, Blue Ribbon Live Stock Co. on Sensation Queen; 2, Martin on Edgemoor Hellen 6th; 3, Hart & Son on Miss Illustrator Orion 2nd; 4, Hart on Miss Illustrator Orion 5th.

Litter of Four Senior Pigs—1, Blue Ribbon Live Stock Co.; 2, Martin; 3, Morton & Sons; 4, Arthur & Potter.

Junior Boar Pig—1, Blue Ribbon Live Stock Co. on Burke's Sensation-I-Am; 2, Colorado Agricultural College on Royal Chief; 3, Love on Sensation Wonder; 4, Hardman on Braeside Orion, Jr.; 5, Blue Ribbon Live Stock Co. on Fancy Sensation; 6, Colorado Agricultural College on Model Cherry Chief; 7, American Beet Sugar Co. on Cherokee's Dream; 8, Hardman on Braeside Orion 1st.

Junior Sow Pig (33 shown)—1, Rusler on Rusler's Flashlight Sensation; 2, 6 and 7, Blue Ribbon Live Stock Co. on Burke's Queen Sensation, Lula Sensation and Queen Sensation; 3, American Beet Sugar Co. on Cherokee's Campagnia; 4, 5 and 8, Colorado Agricultural College on Walts Willetta 11th, Cherry Chief Princess and Walts Willetta 12th.

Junior Litter of Four—1, Colorado Agricultural College; 2 and 3, Blue Ribbon Live Stock Co.; 4, Love; 5, Hardman; 6, American Beet Sugar Co.; 7, Rusler; 8, Brauer.

Poland Chinas.

Judge—L. A. Weaver, Columbia, Mo.

Exhibitors—H. B. Payne, Littleton, Colo.; A. D McGillvray, Boulder; Colorado Agricultural College, Fort Collins; Vern Long, Willard, Colo.; Ellis Johnson, Fort Morgan, Colo.; T. F. Simpson, Manzanola, Colo.

Aged Boar—1, Payne on Baldwin's Prize First; 2, McGillvray on Samson Over.

Junior Yearling Boar—1, Colorado Agricultural College on Joe's Monarch 2nd; 2, McGillvray on Big Tim Again; 3, McGillvray on Samson Again.

Senior Boar Pig—1, Colorado Agricultural College; 2, McGillvray on Imperial Lad.

Junior Boar Pig—1, Colorado Agricultural College on Liberator's Giant; 2, Long on Maston on Colonel; 3, Colorado Agricultural College on Joe King, Jr,; 4, Johnson on Eureka Joe.

Aged Sow—1, 2 and 3, McGillvray on Victory, Royal Lady and Bessie Orphan.

Junior Yearling Sow—1, Colorado Agricultural College on Joe's Smooth Giantess; 2, McGillvray on Lady Royal; 3, Long on Eureka; 4, McGillvray on Western Maid.

Senior Sow Pig—1, McGillvray on Clover Leaf.

Junior Sow Pig—1, Johnson on Daisy Lee; 2, Simpson on Roxie Wonder; 3, Simpson on Zola Wonder; 4, Colorado Agricultural College.

Senior and Grand Champion Boar—Payne on Baldwin's Prize First.

Junior Champion Boar—Colorado Agricultural College on Liberator's Giant.

Senior and Grand Champion Sow—McGillvray on Victory.

Junior Champion Sow—Johnson on Daisy Lee.

Aged Herd—McGillvray.

Exhibitor's Young Herd—1 and 2, Colorado Agricultural College; 3, Simpson; 4, Payne.

Get of Sire and Produce of Dam—1 and 2, Colorado Agricultural College; 3, Simpson; 4, Payne.

Futurity.

1, Payne on litter by Antelope Maid.
2, Vern Long on litter by Eureka.
3, McGillvray on litter by Western Maid.

Chester Whites.

Judge—L. A. Weaver, Columbia, Mo.

Exhibitors—L. F. Rockey, Saguache, Colo.; Harry Cochell, Pueblo, Colo.; G. W. Ball, Greeley, Colo.

Grand Champion Boar—Cochell on Major C.
Grand Champion Sow—Cochell on White Queen.
Senior Boar Pig—1, Cochell on Major C.
Junior Boar Pig—1, Rockey on Colorado Boy, Jr.; 2, Ball on Curly; 3, Ball on Colorado Boy; 4, Ball on Big Joe 3rd.
Junior Yearling Sow—I, Ball on Perfection 2nd.
Senior Sow Pig—1, Cochell on White Queen.
Junior Sow Pig—1, Rockey on Columbine; 2, Rockey on Colorado Queen; 3, Rockey on Snow White 2nd.
Junior Champion Sow—Rockey on Perfection 2nd.

Hampshire Hogs.

There were two excellent herds of this breed represented. One of these was that of C. S. Bratt & Son of Arapahoe, Neb., who won most of the firsts. The other herd was that of N. E. Mosher & Son of Hugo, Colo., who were in the money several times.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

TANNING.

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

LEATHER TANNING RECIPES—ONE FREE guaranteed. Cheap way, proof furnished. Agents wanted. R. N. Gilley, Carlton, Tex.

TRACTORS AND FARM IMPLEMENTS.

POWER HAY PRESS AND 12-25 AVERY TRACtor; both guaranteed excellent working order; $900; tractor alone, $600; real bargain. Owner, 1739 Fifteenth st., Denver, Colo.

FOR SALE OR TRADE, 12-25 AVERY TRACTOR, Guide & Sanders 5 disk plow, good condition. Crop payments to responsible party. Write to F. J. Shindler, Deer Trail, Colo.

AUTO AND TRACTOR SCHOOLS.

THE DENVER Y. M. C. A. AUTOMOTIVE School guarantees satisfaction in teaching these well-paying trades: Auto and Tractor construction and repair, oxy-acetylene welding, vulcanizing (including truck pneumatics), and after Sept. 1, storage battery building. Day and night; School backed and supervised by Denver automobile industry. 600 students last year. Our object is service, not money-making. We charge less and give more personal attention. If you are mechanically inclined, write for descriptive booklet.

YOUR CHANCE FOR ADVANCEMENT—WANTed, mechanics and truck drivers. How many times have you seen this kind of an advertisement in the daily papers? Why not let us train you to take one of these highly paid positions? We train you in the practical way on regular automobiles, trucks and tractors, give you the benefit of the most experienced instructors. We have day and night classes, in other words, we do all that other schools do and a little bit more, as we are the oldest and operate the world's largest chain of practical motor schools. Bring us your problems and we will help you. Write or call 1733 Champa st. for free catalogue and information. Do this now. Special rates for short time. Hemphill Bros., State Auto and Tractor School. Denver branch office at 1733 Champa st. Other branches at Portland, Ore.; Tacoma, Wash.; Vancouver, B. C.; Victoria, B. C.; Calgary, Alta.; Winnipeg, Man.; Edmonton, Alta.; Saskatoon, Sask.; Regina, Sask.; Salt Lake City, Utah.

Genuine Aspirin

Name "Bayer" means genuine
Say "Bayer"—Insist!

BAYER

Say "Bayer" when buying Aspirin. Then you are sure of getting true "Bayer Tablets of Aspirin"—genuine Aspirin proved safe by millions and prescribed by physicians for over twenty years. Accept only an unbroken "Bayer package" which contains proper directions to relieve Headache, Toothache, Earache, Neuralgia, Rheumatism, Colds and Pain. Handy tin boxes of 12 tablets cost few cents. Druggists also sell larger "Bayer packages." Aspirin is trade mark of Bayer Manufacture Monoaceticacidester of Salicylicacid.

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AT ½ PRICE PUT OTHER HALF IN BANK

Sugar, Flour, Soap, Canned Goods, Lard, Tobacco and everything. Write at once for our "Special Get Acquainted Bargain Lists," also send names of five friends and we will mail them a free copy with your compliments. Tell them about it. We positively assure big savings. Order anything—no restrictions—orders shipped same day rec'vd.

ALLIED GROCERS, Chicago, Illinois, Dept. 148

America's Pioneer Dog Medicines

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DOG DISEASES
And How to Feed
Mailed free to any address by the Author
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THE
Albany Hotel
DENVER
Where Sam and Frank Dutton are always glad to greet their friends.

Cut Among the Breeders.

An exceptional chance to secure some excellent Jerseys is offered by Mr. Augustus Pullis of Nunn, Colo. He is going out of the dairy business and is offering his entire herd, which includes one registered Jersey bull, six registered cows and heifers, and two registered calves, as well as six very high grade cows. Foundation stock came from the University of Tennessee. Read his ad in the Livestock Department of this issue.

More than 191,000 head of livestock owned by Navajo Indians in New Mexico henceforth will be bred only to purebred sires. The female stock includes 3,000 cattle, 8,000 horses, 150,000 sheep and 30,000 goats, besides smaller numbers of swine and poultry.

The Divide Herd

Young Bulls

We are now offering at very reasonable prices some good Shorthorn bulls suitable for small herds. Fall calves and a few yearlings priced for quick sale. Full particulars on application.

THE ALLEN CATTLE CO.,
SHORTHORN BREEDERS,
Colorado Springs, Colorado

Polled Herefords

Beau Donald, Polled Plato and Success blood constitute our herd.
SMITH LIVESTOCK CO.,
Chivington, Colo.

FOR SALE—ENTIRE HERD OF
Registered Holsteins

Bred right. Many of them closely related to the cow "Western Ascalon" that sold at the National Sale for $5,500. These cattle will be priced right. Must sell because of failing health. Call or write. W. B. & E. M. DOWNS, ROUTE 1, YUMA, COLO.

GREAT BARGAINS—REGISTERED HEREFORDS; DURHAMS (called Shorthorns), and ABERDEEN ANGUS; ages 1, 2, 3 and 4 years old. Prices $125 per head and up. Also Percheron and Belgian Horses from 1 to 6 years old. Prices $125 and up. Write for circular. One head or car lots. Breeding Guarantees with each.
ILLINOIS HORSE & CATTLE CO.,
Good Block, Des Moines, Iowa.

FOR SALE.
Sons of Sir Johanna Bess Segis
who combines in the closest degree the blood of **King Segis Pontiac Count** and **Piebe Laura Ollie Homestead King.** Send for their story.
PAHGRE VALLEY RANCH,
MONTROSE, COLO.

Glenrose Farm Herd

REGISTERED DUROC JERSEY HOGS.
Bred Gilts and Weaned Pigs. Also a few good boars for sale. All big-boned.
R. C. VAN SCOY & SON,
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REGISTERED
JERSEY BULLS
I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.
Come and inspect, or write me.
H. J. VAUGHN, KIRK, COLO.

BOARS

DO YOU NEED ONE? WE HAVE HIM.
POPULAR BRED. POPULAR PRICED.
GUARANTEED.
DALY'S DUROCS
CAMBRIDGE, NEBR.

REGISTERED BIG TYPE
DUROC JERSEY HOGS
Am offering some good Spring Gilts and Boars. Also some good fall gilts. Write for prices and breeding.
August F. Borgmann,
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WILLIAM UPP
Livestock Auctioneer
Purebred Hogs a Specialty.
DEER TRAIL, COLO.

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.
C. F. Burke, Mgr. Pueblo, Colo.

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Do Not Replace Straight Bates Shorthorn Blood
FOR
Straight Bates Shorthorns are the "foundation source" of the Milking Shorthorns of England and America. The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.
THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

MILKING SHORTHORNS.
All Cows Officially Tested. 125 in Herd.
Service bulls of World's Record breeding. Bot males and females for sale. Personal inspection invited. Send for Illustrated Booklet.
THE BONVUE FARMS CO.,
Stockyards, Denver, Colo.

Wallie Farm Reg. Holsteins
State Milk Record

Established by Mystic Polkadot Lottie, junior 2-year-old, 540.4 lbs. milk in seven days. Best day's milk 83.6 lbs. Fourteen other excellent A. R. O. cows developed recently. All records made without fitting or forcing.
A number of wonderful records will unquestionably be made on these cows at next freshening. Take advantage of this fact by buying a Wallie Farm bull calf now. A few 2-year-old heifers for sale.
Herd Sire KING JOHANNA SEGIS PONTIAC
"His sisters have broken over 100 world's records."
W. G. Foster, Owner, 4800 So. Penn. Phone Englewood 122, Denver.

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Get Into the Purebred Game

I have twenty head of five to seven months old calves that I will sell at a close price of $50 to $100—and good ones at that.
Also yearling heifers and bulls, cows and calves.
Write me. I need the money.
W. A. DICKENS,
Longmont, Colorado.

Glendale Stock Farm

Irvindale Rowdy
Grand Champion
Belgian Stallion
Chicago, 1917,
Denver, 1918
and 1919

Breeders of
BELGIAN HORSES
and
POLLED HEREFORD CATTLE
Young Stock Always for Sale
J. D. BRUNTON, Aspen, Colo.

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Wednesday, November 10th, 1920, 10 A. M.
TWO MILES WEST OF NIWOT, BOULDER COUNTY, COLO.
Nine miles Northeast of Boulder and Eleven Miles Southwest of Longmont.
Will meet morning trains at Niwot.
I WILL DISPOSE OF MY ENTIRE HERD, CONSISTING OF
18 Head Registered and 42 Head of Highgrade Holsteins

Including
SIR ORMSBY SKYLARK PAULINE 196969,
4 years old. Sired by Sir Ormsby Skylark, the sire of Dutchess Skylark Ormsby, the only cow in the world that produced 1,506.36 lbs. of butter in 1 year.
Dam—Netherland Pauline Burke, produced 27.8 lbs. butter at 4½ years.

We have a number of grand-daughters of Colantha Johanna Lad 32481.
This is your opportunity to buy great foundation stock. The foundation of the grade herd is from a grandson of the King of the Pontiacs.
AUCTIONEERS:
COL. H. E. BUCHANAN, Denver.
COL. A. W. KORTE, Boulder.
Nels Anderson, Niwot, Colo.
OWNER.

JERSEY HERD FOR SALE

On account of other business taking my entire time and not being able to secure competent help, I OFFER AT PRIVATE SALE my entire herd, reserving only one cow for my own use.
7 HEAD REGISTERED COWS and HEIFERS
1 year to 7 years old.
6 HIGH-GRADE COWS and HEIFERS
8 months to 3 years old.
1 REGISTERED BULL 2½ years old.
2 REGISTERED BULL CALVES 6 and 8 months old.
Of the above cows, one is a granddaughter of the Gold Medal Bull "Rosebuds Fern Lad," and her three daughters by a son of an imported bull of Noble of Oakland breeding. Another of the cows (and her three-year-old daughter) from Biltmore breeding. A young cow and a heifer from a cow bred by the University of Tennessee.
I brought my foundation stock from Tennessee five years ago and it's all thoroughly acclimated and free from all diseases. I am pricing this herd to sell. Also a No. 15 De Laval Separator, in A1 condition. Can give best of references, bank and otherwise. If interested, full information, pedigrees, prices, etc., will be given.
AUGUSTUS PULLIS, Nunn, Weld Co., Colo.

When You See a **GOOD SHORTHORN**
Think of Jay & Allan, Boulder, Colo.
STOCK OF BOTH SEXES FOR SALE.

Milking Shorthorns

25 HIGHGRADE MILKING SHORTHORN HEIFERS,
coming two and three years old, bred to Bonvue Royal. Will start to calve in February. Will include registered bull calf six months old; a good one; $2,500 takes this nice young herd, all from cows that are real producers over the pail. Also have two nice young bulls at reasonable price. Will sell two or three registered cows.
Jas. P. McInroy,
Larkspur, Colo.

Poland China Boars

I am offering a few choice April Poland China Boars at very attractive prices. They are by Joe King, one of the smoothest boars in the country.
Also one fall boar by Joe King, out of the splendid sow Long Giantess by Kirk, him by Tecumseh Wonder, Champion of the State of Missouri.
Anyone wanting a boar of the good stretchy kind, and high backs, can't go wrong on these pigs.
Also have a very limited number of gilts.
MAIL ORDERS SOLICITED.
SATISFACTION GUARANTEED.
C. J. Mather, Longmont, Colo.

BEAU ASTER
Registered Hereford Cattle
Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.
Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.
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SOLICIT YOUR SALES
WIRE US FOR DATES.
C. W. SNOOK, Greeley, Colo.
ORD L. LEACHMAN, 205 Livestock Exchange, Stock Yards, Denver

RANGE VIEW STOCK FARM
Purebred and Registered Duroc Jersey *HOGS*
Bred gilts, young boars and pigs, all ages, for sale. Blood from Sensation, Pathfinder and other famous lines. Good stock at Right Prices.
HENDERSON, COLO., ROUTE 1, BOX 49.
Phone Hazeltine 11-J-11.

COL. H. C. JENNINGS.
Purebred Livestock
AUCTIONEER
Also conduct Sales of Real Estate.
534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

Campion's Majestic Sunbeam and Beau Mischief Herefords

MAJESTIC SUNBEAM No. 364681. Calved February 25, 1911. Sire—Majestic the 24th No. 293221. Dam—Armour Sunbeam No. 85081. Majestic Sunbeam, grandson Imp. Majestic, one of the best and biggest boned Hereford bulls ever imported to this country.

BRUMMEL MAJESTIC No. 628435. Calved March 20, 1917. Sire—Majestic Sunbeam No. 364681. Dam—Don Amelia 2nd No. 135871. 56¼ per cent Anxiety, 31¼ per cent Imp. North Pole, Lord Wilton Grove the Third. 12½ per cent Imp. Majestic.

AMELIA'S BEAU MISCHIEF No. 557094. Calved April 27, 1916. Sire—Beau Mischief the 15th. Dam—Don Amelia 2nd No. 135871. Ninety per cent Anxiety blood. Secretary Kinzer says its almost impossible to write a better pedigree.

Sunbeam Farm,

8 Miles East of Wellington, Colo.

"They're Bred in the Purple"

The best types of Majestic Sunbeam and Beau Mischief Heifers and Bulls for sale.

The Big Bone Registered Poland China Sows and Gilts and Boars for sale at all times, also fullblooded bred gilts. Come and see them. Visitors welcome at "Sunbeam Farm" any time.

A. J. Campion

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The Sigel-Campion Live Stock Commission Co.

And we will get you the High Dollar for your stock. Experienced salesmen in every department.

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DENVER UNION STOCK YARDS.

Phone Main 8300.

PUBLIC SALE

50 Registered SHORTHORNS

38 FEMALES—12 BULLS

AT ELBERT, COLO.

Wednesday, Oct. 27, 1920

(In the Sale Pavilion.)

This will be the Big Shorthorn Event of the pre-Stock Show season, and the Elbert County Shorthorn Breeders' Association are planning this as an annual sale.

Elbert County has won a nation-wide reputation as a producer of feeder cattle that have won Firsts and Championships at all the principal Stock Shows.

Some of the bulls that are in service in the Elbert County herds are: SUPERBA'S CUMBERLAND, CEDARLAWN'S BEST, TYPICAL THOUGHT, SUNNYSIDE ROBERT, BARON HEDGEWOOD, WESTERN STAMP, and HECTOR. This represents some of the best Shorthorn blood in the country. This sale offers you a REAL chance to get rugged constitution together with Show Ring qualities.

THE CONSIGNORS:

CARNAHAN & SONS
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CARL PETERSON
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CLINTON WHITTIER
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For Catalog Address

DEWEY ALLAN CARNAHAN, Sales Secretary.

Elbert Co. Shorthorn Breeders' Association, Elbert, Colo.

Auctioneers—Cols. Snook, Leachman, Albion & Watson.

Cheyenne——to——California

11 HEAD REGISTERED HEREFORDS

Shipped from our herd to Wm. Briggs, Dixon, Calif.

They were choice ones too

We can satisfy discriminating buyers.

Write for Photo "W" with Pedigree.

Hereford Corporation **Cheyenne, Wyo.**

L. G. Davis Herefords ANXIETY BRED

Sires in Service:

The Great BEAU CARLOS 2nd

BONNIE WESTON, by Bonnie Brae 15th

WYOMING 4th, Champion Senior Yearling Denver, 1919.

Have for sale 20 Heifers, 10 to 15 months old. Our own breeding.

We have a few High Class Yearling Bulls For Sale.

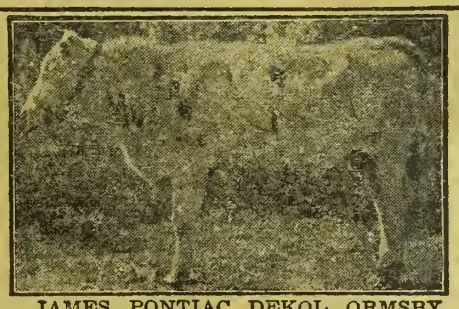
L. G. DAVIS, Saratoga, Wyo.

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
JOHNSTOWN, COLO.



JAMES PONTIAC DEKOL ORMSBY

FOR SALE

Holstein Bull Calf

BY JOHAN DUCHESS DE KOL LAD.

This calf was born May 10th to Diana Stem Winder de Pauline, by Denver Sir Segis, who is a brother to Lila Segis Pontiac, state record junior three-year-old, with her wonderful record of 34.25 pounds butter in seven days. His sire is Johan Duchess De Kol Lad, our famous herd sire. You know this bull calf's record on his sire's side—but we consider his dam our most wonderful cow; as a four-year-old she made a record of 696 pounds milk in seven days, and 27 pounds butter. Her best day's milk was 102.4 pounds. On October 1st, five months after freshening, she milked 85 pounds. Her dam, in turn, milked 108 pounds milk in one day, and 3,100 pounds in thirty days, and tested 3.3%.

This calf has two generations of over 102-lb. cows in straight line back of him.

He is a Beauty—Straight and about one-half White.

For further information and price, write

MRS. R. G. DOUGLAS, Rush, Colo.

DeWITT HEREFORDS

HERD BULL—MISCHIEVOUS JR., by THE HEIR

His dam is Mischievous 3rd, a full sister of BEAU MISCHIEF and the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

Shorthorns That Milk

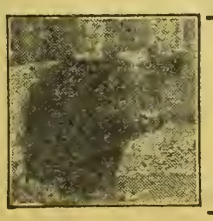
Victoria 228667

R. of M.—15,175 Lbs., 546.3 Lbs. Butterfat. Class A. Only a few cows of this breed exceed this record in Class A official test.

Bulls and Heifers for sale at Reasonable Prices.

The Pine Valley Dairy and Farms Company

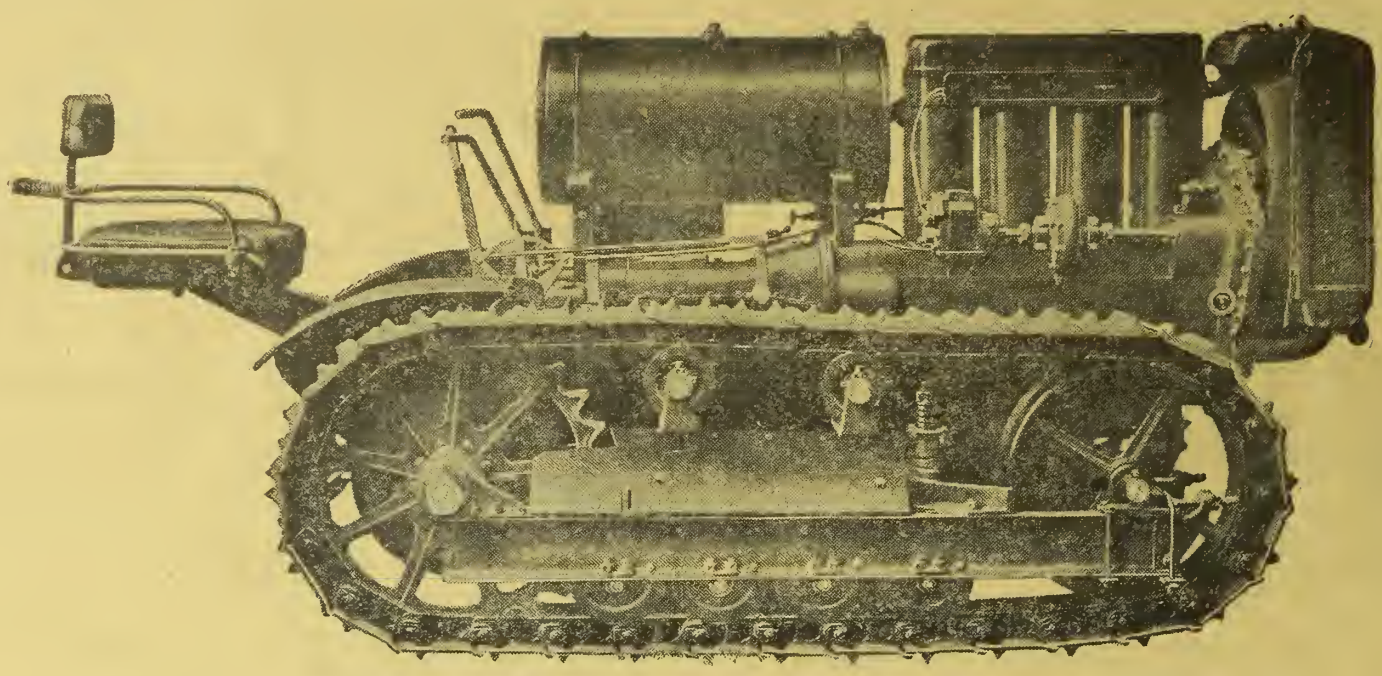
Seeley G. Rose, Manager. COLORADO SPRINGS, COLO.



WEIGHT AND QUALITY

Thirty-three Shorthorn steers sold for $273.65 per head at South Omaha July 11. Why? Because they sold at the top price, $16.25 per cwt., and they weighed 1,684 lbs. on the average. The next day 27 yearling Shorthorn steers sold on the same market for $133.57 per head. They sold at the top, $16.25, and weighed 822 lbs. Last year 134 Shorthorn cows in Canada made milk records from 7,000 to 17,723 lbs., 31 from 10,000 lbs. up. It pays to grow Shorthorns.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION,
13 Dexter Park Avenue Chicago, Illinois



Advance Announcement

BEST TRACKLAYER "Thirty" TRACTOR

Due to the insistent demand of farmers and orchardists upon the C. L. Best Gas Traction Company for a high grade tractor that could be used where the power required did not justify the purchase of a Best Tracklayer Sixty, the Company has perfected a 20-30 Horse-power model of practically the same design as their famous "Sixty"

AFTER months of trials and tests, this model is declared an exceptionally high-grade tractor, and factory production has been started. The design and materials used in this new "Thirty" are the outcome of a decade of high-grade tractor-building experience, and the knowledge gained by the successful operation of the Company's various models in the field. With each model, improvements have been made until today the "Thirty" stands a mechanically perfect tractor.

This new model is especially adapted to orchard work. It is small, compact, turns in its own length and is very easily managed. It will also eat up practically any belt job to which you may put it.

Working parts of the "Thirty" are entirely enclosed, and all gears are run in a bath of oil. Anti-friction bearings are generously used at points where long manufacturing experience dictates. Manganese steel tracks insure long life to the truck units. All working parts, though enclosed, are easily reached. The power is generated from a Best motor —a motor which has long been recognized as the leader in heavy-duty tractor motors—bore 4¾", stroke 6½", valve-in-the-head. The following additional description of the new "Thirty" will prove interesting:

Power Rating: Twenty h. p. at the drawbar, 30 h. p. at the pulley.

Speed: High, 3 1/16 M. P. H.; low, 2 M. P. H.; reverse, 2½ M. P. H.

Dimensions: Length (not including seat), 9' 4". Height, top radiator, 59". Width over all, 11½" shoes, 53¼". Width between tracks, 30¼". Ground clearance, 11½". Drawbar, 16½" high. Track centers, 41¾". Standard equipment, 11½" shoes. Length of track on ground 60". Stationary Drive: Standard pulley, diameter 12", with a 7" face. Pulley speed, 800 R. P M. Belt speed 2513' per minute.

Weight: 6700 pounds.

Write for full information, specifications, prices and name of nearest dealer.

Ready for Delivery about February, 1921

C. L. BEST GAS TRACTION COMPANY

San Leandro California

IN

The Only Agricultural Magazine Published in Colorado

WESTERN Farm Life

Vol. XXII. *Denver, Colorado, November 1, 1920.* *Semi-Monthly*

JERSEYS OF THE TYPE AND SIZE THAT APPEAL TO WESTERN DAIRY FARMERS

Copyright 1920, by The Goodyear Tire & Rubber Co.

"The big Goodyear Cord Tires make a motor truck a real farm tool. I use mine to pull a hay cutter, or a rake, or an automatic loader, as well as to haul grain to the threshing machine and then to the barns for storage. The pneumatics roll through our peat bogs, 14 feet deep in places, which we use for fuel supply; teams can't go into them after rains, pneumatics can. I haul pure-bred Holstein stock to St. Paul, 80 miles, without appreciable shrinkage. Others take days to do the harvesting that I do in hours—because of my truck on pneumatics."—E. H. Kuchenbecker, Owner, Oakcraft Grain and Dairy Farm, Owatonna, Minnesota, R. F. D. No. 1

THROUGHOUT agricultural America today there is many a farmer who can make a report similar to the one given above, regarding the all-round utility and value of a truck on Goodyear Cord Tires.

Just as the application of motor power quickens plowing, pumping, spraying, grinding and other farm operations, so does truck power aided by the active pneumatics quicken farm work in a large variety of ways.

All those tons of produce, stock and supplies that otherwise require such tedious toil in handling and hauling, are rapidly loaded and whisked between farm and town on the big, smooth-going Goodyear Cord Tires.

Farm products formerly limited to selling points only a few miles away, now have ready access by means of trucks on Goodyear Cord Tires, to markets sometimes 50 to 100 miles distant.

In the most strenuous of such duty these pneumatics demonstrate the rugged strength of their Goodyear Cord construction which makes possible that exceptional reliability with which they serve.

Farmers' reports of savings and advantages obtained with pneumatic-tired trucks and other motorized equipment, will be mailed on request by The Goodyear Tire & Rubber Company, from Akron, Ohio, or Los Angeles, California.

GOODYEAR
CORD TIRES

Western Farm Life

A Western Magazine for Western Farmers and Stockmen

VOLUME XXII. DENVER, COLORADO, NOVEMBER 1, 1920. No. 21.

Science Tackles Our Potato Problems

WORK OF U. S. EXPERIMENT FARM AT GREELEY.

ALVIN T. STEINEL.

W. C. Edmundson, Horticulturist, U. S. Potato Experiment Station, Greeley.

SHALL we plant whole seed or cut seed? Should seed potatoes be greened before planting? Shall we use immature potatoes for seed? How closely in the row is it advisable to plant in order to get the largest tonnage of marketable potatoes? What is the effect of different soil types on the yield of potatoes and the vitality of the seed? What method of seed selection will insure best results? Are potatoes grown without irrigation less apt to "run out" than those produced with the aid of artificial watering? When is the best time for planting to avoid disease? How many irrigations should be given the crop for the best results?

These are a few of the questions for which answers are being sought by experimental work on the United States Potato Experiment Station at Greeley, Colo., visited recently by the writer. Problems that have puzzled our potato growers for many years are under investigation and answers are being worked out in the slow but sure way of science. The station has been established several years and conclusions may safely be drawn on some of the work, while in other projects but a bare beginning has been made. Looking over the experimental fields with W. C. Edmundson, the horticulturist, we came to the rows of potatoes that were grown for comparison of whole with cut seed. Western growers, as a rule, use cut seed, but there are a few of our farms, among them some of the notable ones, that use whole seed.

"Which method is showing up best?" I asked. The reply was:

"Whole seed,when carefully selected from productive hills, gives the best results in a series of years."

The answer was qualified by an important statement—"carefully selected from productive hills"—that seems to be the kernel in the nut. Whole seed, if it is poor seed, is little, if any, better than cut seed of poor stock. Careful selection from productive hills—there's a lot in that whether you cut the seed or plant it whole. Aside from vitality —which means a vigorous plant—if other conditions are good, there is this to add from the experience of Dr. McMillan, the pathologist on the station, whole seed is less apt to carry infection from a diseased soil. If there is in the soil the bacterial infection that spreads, for example, rhizoctonia—cut seed offers a quick means of transmission to a new plant. The jacket on the whole seed protects it. And then, isn't it reasonable to presume that there is more vitality in a whole potato than in four separate pieces? Looks logical. But on the other hand, why not get four plants instead of one from a potato if the yields are equal? Nobody is certain on that point—that is, no experienced grower, because he knows better than a novice how very uncertain is everything in potato culture.

Passing on to the next series of rows we found an irrigation experiment. If cut versus whole seed is a moot point, what about the application of water? Here we have an endless subject that will start a hot controversy in any gathering of spud growers. They want to know from the U. S. station at Greeley whether to apply the water early and often or late; how early; how often and how late. I saw two rows of plants that had been irrigated six times; that's frequent irrigation, especially in this, a wet season. Then I saw some that were normally watered—as normal goes in the Greeley district, where it means about four irrigations. Then there were other rows that had been watered only twice. To my eyes the normal rows looked entirely normal, but I could see no very marked difference in the tops between that and the "frequent" and "infrequent" rows. Digging time tells the story. But it will take more than one season to prove anything, for we have our varying natural rainfall to consider and then to remember that soil quality and condition also are to be taken into account.

The "running out" experiments are another highly interesting series. Do potatoes run out? We all say they do. Sometimes it is like I heard Prof. Sandsten tell an audience of growers, it is the farmer who "runs out" and not the potato. Which is true, because the tendency in the potato to deteriorate is hastened by careless farming.

The station has developed that there are varieties that degenerate more quickly than others. The experiment was started with Rurals and Pearls, but these did not reproduce themselves with a show of continued vigor, consequently Rural New Yorkers were selected for carrying on this experiment. Last year those from original seed of 1915 and 1916 planting gave yields as good as could have been expected from seed of immediate importation. Pearls have had to be continually replenished with new seed stock from the north.

Are there heavy yielding commercial varieties suitable for the Greeley district that will not need constant seed replenishing? Is it a question of variety at all, or merely one of "carefully selected seed from productive hills?" That phrase of Mr. Edmundson's carries a lot of common sense, no matter where we apply it. Maybe the Pearls are all right and it is merely a question of "carefully selected seed from productive hills."

The greening experiments are next. English growers say, "Why experiment? We know that our seed must be greened."

Our American potato growers have to be shown. Many of them tell us that "greening" is of no value in hastening growth. The station will attempt either to prove or explode that theory.

Distance between plants in the row is next in order. Close planting to produce a larger tonnage of market size potatoes is the aim. Big potatoes are a failing in all of our irrigated sections. The land dealer's idea of good spuds is

(Turn to Page 12.)

Boys and Girls of Idaho Hold Own State Fair

AGRICULTURAL CLUBS GIVE ADULT FARMERS HOT COMPETITION

BOYS' and Girls' Club members of Idaho held their own state "fair within a fair" this year, as a part of the Idaho State Fair at Boise. They occupied four large tents, and three livestock sheds, in a section of the fair grounds all their own, displaying 179 calves, sheep and pigs, the most of them purebred, more than 800 exhibits of canned fruit, vegetables and meats, about 350 samples of sewing, and numerous exhibits of farm and garden crops. It was the first distinctly separate junior state fair ever held.

Boys and girls to the number of 162 also occupied for the first time a large, two-story dormitory, built for them on the fair grounds, and took their meals in a specially constructed mess hall adjoining. These 162 youngsters were winners of demonstration and judging contests, or otherwise representatives of the best farm bureau junior work done in seventeen southern Idaho counties that have organized club work. The trip to the state fair was their reward.

Dedication of these two buildings as "Camp McCall" was a feature of the fair program. A fund of $15,000 for construction of this camp for the farm bureau juniors was raised in a campaign conducted by the boys' and girls' club workers of the University of Idaho extension division. Expenditure of approximately $10,000 leaves $5,000 toward erection of a second dormitory which will be required to complete the camp.

Fifty-eight prizes in the open classes were won by the calves, pigs and sheep of the farm bureau junior members when they took their purebred animals into competition with the best breeders of the state and of other states. The grand champion Poland China boar of the fair was a boys' and girls' club pig, bred, raised and exhibited by Harvey Wolfe, a freckle-faced club boy from Nampa, Idaho, yet in his early teens.

With 37 dairy animals in their fair, the boys and girls took 24 prizes in the open classes. With 25 beef calves, they took 12 prizes in the open classes; with 35 sheep, 12 prizes; and with 82 swine, 10 prizes. Boys and girls in the open classes won eight firsts, six seconds, five thirds, ten fourths, five fifths, eleven sixths, four sevenths, three eighths, one ninth, and one tenth.

In addition, they divided their share of the $2,814 that was offered in awards in the junior department.

Elizabeth Gearhart of Boise, with a beautiful Jersey heifer, won the award in the open classes for junior champion Jersey female.

Arthur Fordyce of Gooding won the corresponding award on Ayrshires.

Club members assembled in front of new dormitory, Junior State Fair, Boise, Idaho.

Harvey Leddington of Weiser won the $175 trip to the International Livestock Show, Chicago, offered by Armour & Co. to the club member exhibiting the champion pig club pig. To win this award, young Leddington's gilt, which won first in its class in the open competition, had to win also over the grand champion boar exhibited by Harvey Wolfe.

Seymour Lee of Nampa won a trip to Portland, Ore., to attend the Pacific International Livestock Show, a $50 trip offered by the Union Stock Yards of North Portland to the club member exhibiting the first prize pig in the fat class.

Teams of demonstrators from among the boys and girls put on an almost continuous program of demonstrations for the visitors at the fair throughout the week, covering chiefly canning and baking, but also poultry culling, sewing and millinery work.

Some of the youngsters cleaned up enough in awards, in addition to what they already had received at county fairs, to finance them in their livestock ventures, or nearly so. In the dairy section alone, 22 youngsters divided $509. Already before the fair closed some of them were planning to bring more and better stuff next year and to make a better showing than they had made this time.

Review of Forty-Second Annual Utah State Fair

COLORADO BREEDERS MAKE FINE SHOWING IN LIVESTOCK CLASSES

W. H. OLIN, Supervisor of Agriculture, D. & R. G. Railway.

THIS year's State fair was the forty-second exhibition held by the Utah State Fair Association. It was entered into in the same way Utah always does things—in the best possible manner, for they want to convince visitors that this is indeed the "Promised Land."

In the years of the past have you ever seen the exhibits Utah has put up at the Irrigation Congresses held all over the west? Somehow or other Utah usually "took home the bacon." To know what Utah really is one has to see her on her own ground. There she just literally outdoes herself. Visitors who have attended most of the State fairs of the west this year, told the writer this year's fair at Salt Lake was the most complete well-balanced exhibit of superior quality products, minerals, manufactured goods, fruits, crops, livestock, educational with clean amusements, sports, etc., that has been held in the west.

The fair covered the whole of the first week of October, Monday, October 4 to Saturday evening, the 9th. There was "something doing" all the time. Manager D. W. Parratt estimated the average daily attendance at close to 20,000. Utah surely supports her state fair. Of course, it is always held at the time of the semi-annual church conference of the Latter-Day Saints, and delegates are there from all over the west and Canada.

The exhibits in livestock were larger than ever. All classes were quite full, save in sheep. The ram sale held by the National Wool Growers' association at Salt Lake draws the best from all over the west and Utah sheepmen make their big exhibit there, because of better prices then obtained. This is held the last days of August usually. We observed that Uncle John Seeley's sons' entries took all the champion ribbons in Rambouillet sheep. J. J. Cramer and J. Nebeker & Sons divided honors in Hampshire ribbons — save champion ram, which went to the Maple Leaf Stock Farm, Ontario.

The hog department had more entries than has been seen at any previous Utah State fair. The largest exhibit of high-class, well-fitted hogs in Duroc Jersey classes ever seen in Utah, came from the Richards-Olson Live Stock Company of Virginia, Idaho. They took all the champion ribbons of the breed. Senior champion boar in the Berkshire breed, grand champion boar, senior champion sow and grand champion sow honors went to Ashlane Farms. A. N. Blackmer, an old-time exhibitor, who has in the past pulled many ribbons, won junior champion sow, champion barrow, and first on produce of dam. Burt Hart of Colorado won champion honors on best pen of exhibit hogs and first on fat barrows under 250 pounds.

Cattle Exhibits.

Never in the history of the fair has there been such a fine showing of beef and dairy cattle as were entered this year. In the Shorthorn classes the two herds of Maxwell-Miller of Steamboat Springs, Colo., and John H. Seeley Sons of Mt. Pleasant, Utah, competed for the high honors. Dr. Chas. Bellows of Maryville, Mo., was the beef judge. He gave grand champion bull to Maxwell-Miller, but all other champion ribbons went to the John Seeley Son's herd. After placings were all made, and his work virtually done, Judge Bellows came to "Scotty," the herdsman for Uncle John's Mountain Dell Shorthorns and said: "Scotty, for uniform good all-round individuals, you have the best herd I have ever seen." What does this mean? A whole lot. For Dr. Bellows has a fine Shorthorn herd of his own. He has for years won ribbons at the International and he knows good beef on foot, wherever he sees it.

"Too bad," said one old-timer, who was standing near and heard this comment on the Mountain Dell Shorthorns, "too bad," says he, "Uncle John could not have lived to hear this commendation of his twenty years' work. Could he have heard it, he would have felt he had reached his goal and died supremely happy."

Uncle John was taken with apoplexy in midsummer and passed very suddenly. His five sons are carrying on the splendid breeding work their father had so well established with Rambouillet sheep and Shorthorn cattle. Before he died, Uncle John paid $5,000 for the champion Shorthorn bull at the American Royal in Kansas City last fall, to top his best in the young herd, and hired Don McCarrell—nicknamed "Scotty"—to groom his herd and take what he felt best on the road. Scotty made his own selection and the first tryout was at Billings, Mont. Here he took every blue ribbon but one. Then at the Montana State fair, the Mountain Dell Shorthorns came in contact with the Day & Rothrock herd from Spokane. This is conceded to be the best Shorthorn herd in the whole northwest. At this State fair at Helena, Scotty took blue for blue with these northwest Shorthorns. Then, on to Idaho State fair at Boise. Here the Mountain Dell Shorthorns made almost a clean sweep of premium ribbons. At Utah State fair, as said before, these good Utah-grown Shorthorns took every champion ribbon save one.

Hereford Classes.

We were pleased to see a representative showing from two good Hereford herds from Denver—the Hillcrest Farm and W. N. W. Blayney herd, whose head herd bull Wyoming 8th became a purple winning bull who so distinguished himself at Iowa State fair this season. Wyoming 8th was not at Salt Lake, for he had nothing further to win, after his great victory at Des Moines. It was a young herd that was here shown by Mr. Blayney.

The A. B. Cook herd from Montana, that has made noted winnings in all the shows of the Rocky Mountain states and middle west, was there to win as they had done before.

The Winterton Brothers' herd of Charleston, Utah, bred by these energetic beef men, amid the highlands of the Wahsatch mountains, had a much better showing than they have ever made and they have been coming for years to the State fair, the only place they have ever exhibited.

Like Johnson Brothers of Colorado, they started into the Hereford breeding as range cattle men, who plan to stay with it until they win what they set out to do—get and maintain the best individuals in Herefords, that they can possibly secure with limited capital and good breeding. They have now interested their neighbors to the extent that this Charleston region is known as the "Herefordshire" of Utah. On bull 3 years and over, Winterton Brothers won first. The beef judge told them he was such a superior bull they should keep him in their herd until he died. This gave real encouragement to these worthy brothers. Their neighbor, J. C. Whiting & Sons, won champion junior heifer in the Utah classes with Uintah Lass, a fine, well proportioned heifer that was all beef from her horns to her hoofs. The senior champion yearling heifer Utah classes went to Winterton Brothers. Best steer, one year and under three, went to the Blayney herd of Denver. This herd also won second in get of one sire, bull two years and under three, junior bull calf, aged cow, heifer two years and under three, and first on cow any age with calf by her side. The Hillcrest Farm herd of Denver won first on junior heifer calf and fat steer under one year of age. It also won first on senior yearling bull. It pulled second ribbon on aged herd, third on bull two years and under three, senior yearling heifer and junior yearling heifer. The great majority of Hereford champion ribbons went to the A. B. Cook herd, same as they did last year.

One feature of the judging that meant much to visitors as well as to exhibitors was this: The judge gave his reasons for placing every ribbon. Joe Manderfield, manager of the Union Stock Yards, North Salt Lake, was in charge of the cattle department. He said it was a real school in beef placing to follow the judge in his placing of ribbons.

Dairy Cattle.

The dairy classes were well filled with good individuals in each class. The object lesson in good dairy breeding, feeding and care of dairy cows, was this year in charge of the Salt Lake Cow Testing Association, that began an active campaign in March. Uncle Ben Eldredge, of the U. S. Dairy Division, which co-operates with U. A. C. in Utah dairy investigations and improvement work, helped this association to put on an exhibit similar to the one he himself put on last year and which was quite fully described in the Western Farm Life's write-up of 1919 Utah State fair. The splendid showing of Guernsey, Holstein and Jersey cattle, both sire and dam stock, speaks well for the dairy progress of the past year.

To encourage boys to take part in judging dairy stock, the Utah Jersey Association put up for best individual score of Jersey cattle by a Utah boy, a gift of a fine Jersey bull. A bevy of boys that must have numbered sixty competed. Kenneth Vaughn of Magna won the bull, on a score of 90 out of a possible 100. Paul Boyce of Granite came next with a score of 82, and Rollo Covlisee, also of Granite, came out third with a score of 80. The State Fair association put up a beautiful loving cup as a sweepstakes prize for the best judging by a team of school boys on all livestock. The Heber City team won this prize. This is commendable work and gives the boy a good test and fosters a desire to know more and more about good types of livestock.

County Exhibits.

As in previous years, the greatest interest centered about the county exhibits. All were competing for the high honor of winning the $150 trophy cup that different counties had fought to win ever since it was put up by the Boyd Park Jewelry Company of Salt Lake, in 1916. That year Boxelder county won the cup and in 1917 they again had first and retained the cup. In 1918 Utah county gained the big prize, while in 1919 they had to pass it on to Salt Lake county. This year not alone these counties, but many more Utah counties entered the trophy contest. All felt by no means must Boxelder be allowed to win, for should she do so, it would be the third time and give her the permanent possession of the cup. So money was spent up into the thousands to put up the winning exhibit. Never,

(Turn to Page 19.)

Method of Accumulating Moisture for Dry Farming

EIGHT INCHES OF WATER WILL MATURE MOST ORDINARY CROPS.

E. R. PARSONS.

RAISING any crop on the dry farm is mainly a problem of conserving sufficient moisture. Ordinary every day crops can be matured on about 8 inches of water, so that if we start with 3 or 4 inches in the ground and get 4 or 5 inches during the growing season there is nothing very difficult about it. It is better, however, to conserve as much water as possible, for a dry season comes every year or two and no crop can be made unless there is sufficient reserve in the soil to equalize the shortage.

Any amount of water that we wish to accumulate can be acquired by fallowing the land in question so long as necessary, therefore, we can raise any crop that the irrigator can be simply waiting until our fallowed land has acquired the necessary moisture.

Special crops need special treatment, and as a rule more water than ordinary farm crops. The land should be summer fallowed the year before and by the spring of the following season should contain from 3 to 4 feet of moisture, which, with the regular average precipitation during the growing season, will provide for the crop from 11 to 12 inches of water. At the beginning of the season every foot of moist soil will carry about 2 inches of water, so that if the farmer has 3 feet of moist soil he can figure on having conserved 6 inches; if 4 feet, 8 inches, and so on. It is very simple; if he has a soil auger and measures his water in the ground and the precipitation that falls, he can tell exactly, if he wants to, whether his crop will make, or dry out.

Perennials, which come from the root every year, are among the easiest crops to raise. The roots go deeper and deeper, hold the sap all through the winter, and at the first sign of spring are ready to start growing, bigger and stronger every season. In this class are rhubarb and asparagus which, if planted in well fertilized sandy loam, will need nothing but cultivation when once established. Rhubarb should be planted about five feet apart each way, and asparagus two feet apart in the rows, and the rows about three feet apart. Both of these crops are gathered in the spring, and when the hot weather comes, if the tops should dry up, the roots will sprout stronger than ever the next season.

Tomatoes are perhaps the next best crop for withstanding drouth. Like potatoes and beans, they do not root much in the subsoil; therefore, a deep rich seed bed is absolutely necessary. The plants are easily raised in boxes in the house and can be sown in February or March and planted out after all danger from frost is over. The spacing should be about four feet apart in the rows, and the rows of any of these crops should always be far enough apart for cultivation. The plants should be set with a little water in the hole around the roots, and as soon as absorbed, the dirt should be firmed and dry soil raked on top. Watermelons are a good crop on watermelon soil. The best soil for them and also for cucumbers and squashes is a deep rich silt which does not clod. Such soil is not found on every ranch; but the farmer can soon discover if he has any by trying a few plants anywhere that he thinks they might do well. It is much better to try everything out in a small way before planting a large acreage. Watermelons need spacing about five feet apart, for the roots will travel this distance by maturity.

Strawberries can be grown on the dry ranch by anyone who will take the trouble. Plenty of room, deep rich soil and good mulching are what is required. They should never be planted near trees. Strawberry plants sometimes die out without apparent cause. What gets them is usually nematodes or white mildew on the roots—a fungus disease. Nematodes is the fancy name for minute white worms, which infest nearly all soils and are particularly partial to strawberry roots. There should be plenty of room between the rows to cultivate and the plants should be set two feet apart. All runners should be cut off the first year. The second year one runner only should be allowed each plant and this should be pegged down, or held down with a rock in the row equidistant between the two plants. When these runners have come into bearing the old plants should be dug out, leaving the rows as they were before, all plants being two feet apart. The following year a runner from each of these plants can be saved and the process repeated. This is the best way to maintain a good strawberry bed. After the third year they are of very little account. It is better always when starting a bed (which is the most difficult part of it) to choose good rich soil and do no fertilizing until the plants are established; also to plant early, for a little frost does not hurt them at that time, but the hot sun does, and if there is any manure on the surface the drying out process is very rapid. The fertilizing is accomplished by covering them with old, short manure in winter, which is raked off in spring and cultivated under, between the rows. After this is done no cultivation in summer will be needed if the space between the rows

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Success With Alfalfa and Sweet Clover on Sod

NATIVE GRASSES CROWDED OUT BY THESE LEGUMES SOWN ON SNOW

K. L. SHELLABERGER.

A Colorado Farmer Has Similar Experience.

Shellaberger Brothers, owners of the Placita Ranch, comprising 53,000 acres and located at Los Alamos (altitude 6,700 feet), on a rural route from East Las Vegas, N. M., grow feed for a big bunch of cattle and when they experiment with new methods they do it on a large scale, so that there will be no doubt about results. That they grow alfalfa and sweet clover on sod without preparation of the ground is interesting. The accompanying article tells the story.

The editor saw a similar experiment carried out in Saguache county, Colorado, near Mineral Hot Springs, by Casper Billinghoff. I accompanied a group of farmers of the Mirage community on a demonstration tour conducted by County Agent W. A. Sauder the latter part of August, 1919. Billinghoff's alfalfa was one of the fields we viewed. We saw a fine stand of alfalfa that had been broadcasted on the native sod in the spring of 1918. This was at an altitude of over 7,500 feet, and on irrigated land. Billinghoff gave the ground some preparation, stirring the sod with a harrow before seeding. The stand was fine when I saw it, all native vegetation having been crowded out by the alfalfa, which was yielding two cuttings—all that may be expected at that altitude in a season.—A. T. S.

As we have given sweet clover and alfalfa particular attention for the past five years, we believe we may be able to offer your readers a few suggestions gained from our experiments that will prove quite a saving to those desiring to grow these crops, and especially those who have raw or sod land they wish to seed to either alfalfa or sweet clover.

The first thing is to decide the kind of sweet clover to grow, the white or the yellow. Our experiments prove to us that the yellow biennial is far superior to the white, in that it comes in the spring, fully three weeks earlier than the white, enabling you to have this three weeks more pasture for stock when most needed until the pasture grass has time to get a good start and strength.

You can secure this three weeks pasture and still get three cuttings a year easier than you can with the white—and the white is not pastured. Our altitude is 6,700 feet.

Another important point in favor of the yellow is, that it has a much smaller stalk and in this more nearly equals the best alfalfa. We find it retains more leaves, while the white produces more stalk that stock will not eat so readily.

A majority of people have not even tried to grow alfalfa or sweet clover, because they are of the opinion it is very expensive to prepare the ground for a seed bed. In this nothing is farther from the actual facts; either one has required less expense and produces greater returns than any crop that we have experimented with.

Some three years ago we seeded some four hundred acres of old ground to Grimm alfalfa. To kill the weeds, it was necessary that we plow the ground—this was in June. To secure a firm seed bed required that we roll and pack the soil twice before drilling, then drilled as shallow as possible ½ to ¾ inches deep, then followed the drill with the roller-packer.

You can calculate the expense of seeding; first, the plowing, then rolling and packing—three operations, making four expenses in the operation in addition to the drilling.

While doing this seeding the writer noticed a stalk of alfalfa here and there out on the sod that had simply had its start from seed being blown or carried there in some manner, and he said to himself, "if this volunteer alfalfa lives and grows year after year on sod, why not if you seed the sod?"

To test this we seeded about three acres on the sod some three years ago at the rate of five pounds to the acre, and secured the best stand of anything on the ranch. Now after three years it has killed out all the wild grass and there is a fine mulch around the roots.

We have had many ranchers and farmers come to make an inspection of this alfalfa on the sod, saying we would never have believed it if we had not seen with our own eyes. Several intended buying tractors and plowing their sod land, which would have meant a cost of $6 or $7 an acre to get land in fine enough condition to seed to either alfalfa or sweet clover. The writer said, "Why go to this expense when with it you do not have the ground in as good shape as when drilled direct on the sod? You do not even have to disk the sod. The minute you disk the sod or cultivate in any manner you start a crop of weeds to grow, if nothing else."

On non-irrigable land we find the best time and method of seeding sweet clover or alfalfa is to broadcast it on the snow after the first of January, or if only a small acreage, along in February. Such freezing as the seed gets takes the place of scarifying the seed as many have to do when not seeded until along in June or July. When the snow melts it carries the seed down ample depth in the ground and it is there ready to start growing early in the spring when warm enough. In this way you secure several months advantage in time over the common method of seeding.

If there is no snow in February we would suggest using a drill with clover seed attachment and stopping up every other hole, so as to place the rows at least 16 inches apart and drill direct on the sod. The ground may be so hard and dry that you can hardly see the mark where the drill has passed over, but you have the seed deposited and when the snow comes it will do the rest and get it started, and with the later rains along in May or June a good stand is secured. We have never made a failure yet and have had some very dry springs.

By seeding in rows it gives the plants more surface from which to draw moisture as well as enabling the grower to secure a good crop of seed the second year.

On land that can be irrigated, we give the land an irrigation before seeding, if we do not seed until May or June. Then we drill in not deeper than ½ inch, and if no rains come in the meantime, irrigate about every eight days for sixty days, just sufficient to keep the ground moist.

To prove that our three-acre plot on sod three years ago was no accident we are sending you a photograph of a 70-acre field of Grimm alfalfa that was seeded direct on the sod in June, 1919. The picture illustrates the first cutting the middle of June, 1920, at least 3½ feet high, as you can note by the height of the mowers. Not only did this prove a perfect stand, but practically doubled the yield of that on old ground for practically twice as tall.

Our short sod grass gives all the nurse crop needed and one man can irrigate ten acres on sod easier and quicker than one acre on newly plowed ground. With all the rolling we did on the old ground after planting and seeding it was very hard to irrigate without badly washing the ground.

Another thing we found out was that while we plowed the old ground in June, double rolled before and once after seeding, it was hard to irrigate without washing, and we had such a crop of weeds that we thought they would smother out the young alfalfa. To save this young alfalfa we had to go over all with mowers when the weeds were about 6 inches high and clip them off, while on the sod we were not bothered with a weed and the alfalfa has killed out the sod grass on the three-acre plot and we have a stand of alfalfa now without a weed.

We have a field of yellow sweet clover, drilled in the same manner as the alfalfa. One irrigation is all it had this season, and as it was so rank a growth and thick we feared we would not secure any seed, but have been running our huller and threshing from this piece, which averages around a thousand pounds per acre of fine clean seed. Before we started to thresh we said if we could secure three hundred pounds per acre it would pay to thresh. The 400 acres of sweet clover we have cut for seed will give us much more than will be required to seed 7,500 acres this coming season.

Now, some dont's in seeding direct on sod:

Don't even disk the sod. To do so starts a crop of weeds.

Don't drill deeper than ½ to ¾ inches deep.

Don't broadcast more than at the rate of 6 pounds of seed to the acre.

Don't set drill to seed more than 3 pounds of seed to the acre, with every other hole stopped. Don't use poor seed. Secure the best possible. Remember there are more than 270,000 seeds to the pound, and, if good, the above quantity is much better for a strong healthy stand than where 15 to 20 pounds is used.

We have tried both, a drill set 3 pounds to the acre and 10 pounds to the acre, and the 3-pound has proved the most satisfactory.

We find the genuine Grimm alfalfa the most satisfactory and we prefer to pay a dollar a pound for it than to have the ordinary given us. The purchaser should be very sure he is securing genuine Grimm. For those who do not seed until along in June, we would suggest that they inoculate the seed. While it might not be necessary in their section, yet it produces a stronger and hardier plant, which is needed especially on non-irrigable land.

Either alfalfa or sweet clover can be inoculated with little labor and the same bacteria for both. We buy either the bacteria cultures, or go to an old sweet clover or alfalfa field and where there is a good stand take about two inches off the top dirt and throw it aside, then take the next four inches, keep in the shade and when dry after spreading out thin, it is ready to use. Simply make a thin glue water or dissolve brown sugar in water and moisten the seed with this water just enough so the dry dust will adhere to same. It will be dry in a few minutes and is then ready to drill. It requires just a small amount of such dirt to inoculate a large amount of seed in this manner, but remember to keep the seed in the shade and plant same day treated.

Grimm alfalfa drilled direct on sod June, 1919. This picture was taken June, 1920, at time of first cutting of the 70-acre field.

Farmers Clearing Less Than $500 Cash Per Year

FIGURES on farm profits, covering seven years in two areas, and five years in a third, made public by the United States Department of Agriculture recently, show:

That comparatively few of the farmers in the groups studied have been making large profits during the recent years of comparatively high prices.

That their average return on investment increased from about 4 per cent in 1912 to 7 per cent in 1918.

That most of them are making less than $500 cash per year over and above the things the farm furnishes toward the family living, which, however, constitute a very important factor.

The facts brought out in this report are of special significance, since they represent the results of continuous studies of the same farms extending over a longer period of time than do any other such investigations thus far completed by the department.

Specialists of the Office of Farm Management and Farm Economics, who have conducted these investigations, say that while the results will not justify making flat generalizations as to what farm profits are for the country as a whole, they believe they should have weight in the consideration of the general problem, as indicative of the trend of farm returns in representative farming sections.

The three groups of farms studied are located, respectively, in Washington county, Ohio (25 farms, hill country, 7 years); Clinton county, Indiana (100 farms, corn belt, 7 years), and Dane county, Wisconsin (69 farms, dairy region, 5 years). Representatives of the department visited these farms year after year, taking records covering the farm business under the following heads:

Distribution of farm area.

Crop yields.

Amount of work stock and other livestock.

Amount of labor used.

Amount and distribution of farm capital.

Amount and distribution of receipts and expenses.

Value of the family living obtained from the farm.

Amounts of the more important products sold and prices received.

From the figures thus obtained, the farm income (receipts less expenses), and the labor income (farm income less 5 per cent on investment), have been computed for each farm and for each group of farms.

The average farm income of the 25 farmers visited in Washington county,

(Turn to Page 19.)

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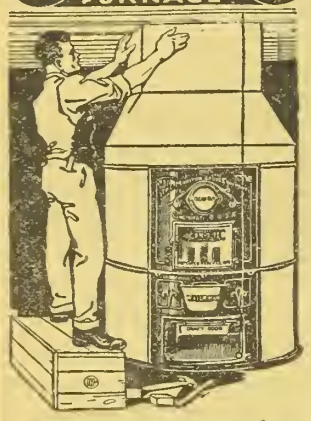

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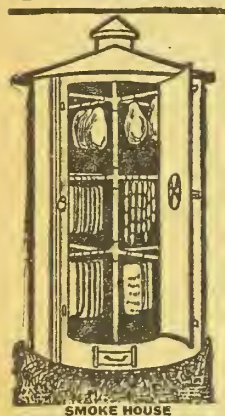

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The Heart of Virginia Keep

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CHAPTER VI.

A Gentleman of the Press.

Through the city directory Virginia learned Mrs. Schmitt's address—it was in a South Side street unknown to her—and started for it.

She refused to think of Mattock, protesting to herself that her father's trouble eclipsed her own. Yet, guiding her car southward, she knew her brain had disobeyed her will; memory of the scene lingered like a bitter taste. She was conscious primarily of humiliation.

Her self-esteem had been dealt a crushing blow. Try as she would, she could not alleviate the pain of it. The grotesque situation wrought by time impressed her as so theatrical that she could have laughed mirthlessly aloud.

When she knocked at the door of the yellow frame cottage, she had formulated no definite plan of procedure; but when Mrs. Schmitt appeared, obviously fresh from her wash tubs, she at least divined that several things she had vaguely thought of saying were better left unuttered.

Mrs. Schmitt, a thick flaccid woman of the blond Teutonic type, with china-blue eyes, offered no compromise—only a deep-rooted pessimism. Her arms, bare to the shoulders, were red, fat, flabby, and her hands, cracked open here and there, were short and leathery. She held the door ajar, barely sufficient to see her caller. From the beginning her attitude suggested that she might close it any moment.

Introducing herself briefly, Virginia said:

"Mrs. Schmitt, I want to ask a favor of you. Will you come home with me?"

Mrs. Schmitt's cold unfriendliness grew more pronounced.

"What is it you want?" she asked darkly.

"Only a confidential chat. I should like to have you stay for luncheon. Won't you come?"

"No. It's my wash day."

"But you needn't stay long if you'd rather not."

"I don't want to go with you."

"I'm awfully sorry. I should so much like to have you. Are you quite positive——"

"What's the use chewing the rag?" Mrs. Schmitt cut in curtly and started to close the door.

Forcing a smile to her lips, Virginia placed her hand gently but firmly against the knob. Somehow at that moment she recognized the real motive behind this crushing sacrifice of pride. Deep in her soul she knew that she was actuated not only by love of her father, but by love of herself as well. Public scandal must be avoided at all costs.

"If I were to come inside for a moment," she suggested, "perhaps——"

"I ain't seein' comp'ny today."

The girl's foot shot out swiftly and caught the bottom of the door—which had been wrenched from her grasp and slammed in her face—against the jamb. Her face went white.

"Mrs. Schmitt, you are making yourself ridiculous," breathlessly. "There is no reason for your acting in this way. You know as well as I that my father never—did this—thing. Everybody knows that—or should!"

Retaliation succeeded where conciliatory gentleness had failed.

"So you think! Didn't I see him when he done it?"

"But why, then," Virginia hastened, "have you waited silently all these years?"

"How could I tell your father was the one? I didn't know nothing about it till the officer come."

"Somebody must have known," said Virginia, watching her opponent narrowly, "because somebody warned my father."

"I don't know nothing about it," came the sullen denial.

"But it proves—don't you think—that you are not alone in your desire for vengeance? Some one certainly notified the police. If it wasn't you, who was it?"

"I don't know——"

"How many peasons besides yourself were in the saloon that night, Mrs. Schmitt?"

"I don't——"

"There was the barman, who is dead; the Greek, who was killed; the woman, who disappeared; and yourself. Now who else was there?"

"I ask you kindly," said Mrs. Schmitt with venomous urbanity, "please to take your foot outer my door."

"Surely you can remember," insisted Virginia—and clenched her teeth.

Mrs. Schmitt had thrown her heavy bulk against the door so that the sharp edge of it squeezed the girl's instep cruelly. After a moment of torture the pressure was relieved.

"Now will you take your foot out?"

The foot was removed from the sill. The door closed with a bang. A key grated in the lock.

* * * * * *

While Mrs. Keep was reading Virginia's "want ad" in the St. Louis Publicist there entered the editorial room of that morning newspaper a young man by the name of Arnold Dempster Trude. The staunch six feet of him and the tan of his skin, the clearness of his blue eye, and the crispness of his yellow, sun-scorched hair somehow suggested a product of the West. But his clothes were made by a Fifth avenue tailor; and the wholesome ruddiness of his boldly chiselled face came from polo, yachting, and kindred sports, not from cow-punching.

He was several times a millionaire. He owned the Publicist, the building that housed it, the ground on which the building stood, and various other properties in and about St. Louis. Yet when he walked in that morning and inquired for Charles Moffett, the managing editor, the office boy knew him not. As a matter of fact, nobody in St. Louis knew him. The boy asked for his card.

He searched several pockets, then smiled regretfully.

"Can't find one," he said. "Just say I'm a New York newspaper man."

It was somewhat early for Moffett, but happily he happened to be in. More happily still he would see his caller, identity unknown, in five minutes—he said. Trude waited patiently for twenty minutes; then a buzzer sounded, the office boy jumped from his bench, jammed his novel in a hip pocket, and presently brought the information, "Mr. Moffett will see you now."

He nearly fainted when given a silver dollar with the stern warning: "If you value my friendship, keep your mouth shut."

Entering the editor's office, Trude closed the door behind him and remained standing.

"Morning, Mr. Moffett. Dropped in for a look at my paper. I'm Trude."

Moffett, who was a thick-set, heavily-bearded Scotchman, evinced no perturbation beyond a slight tremor of the pen with which he was affixing his signature to a letter. Having disposed of the letter by dropping it in a wicker basket, he took a briar pipe from his pocket, filled and lighted it with deliberation, swung back in his swivel-chair, rested a pudgy hand on each knee, ducked his head and peered over his steel-rimmed spectacles at the young man standing beside the desk.

"I assume, Mr. Trude, you planned to take me by surprise."

"Not exactly. Had reasons, though, for not sending in my card."

He produced a thick packet of papers, removed some rubber bands, and selected several letters, which he laid on the desk.

"Credentials. Care to look 'em over?"

Moffett deposited a paper-weight on the letters, with the implication that he would investigate them later.

"If I had looked for you," he remarked as Trude made himself comfortable on the office lounge, "I should have expected to see an older man. You are hardly more than a boy."

"But old in experience, sir."

Beneath his unshaped moustache, Moffett's lips moved as if they intended to smile, then decided not to.

"If you care to look the plant over," he offered, rising heavily from his chair, "I'll be glad to show you around."

"Plenty of time for that. Keep your seat. Little business matter to settle first."

As the Scotchman sat down he shot a furtive look of suspicion at his caller from behind his steel-rimmed spectacles.

"Your lawyers——" he began.

"No lawyers needed for this." Then abruptly: "Mr. Moffett, I've come all the way out here from New York to ask you for work. Do I make myself clear?"

The editor shook his head.

"You do not," he said tersely.

"I thought not. Well, here you are: About the time Uncle Jim Dempster died and left me a lot of stuff I had no use for, I cornered myself and took stock. All winter I'd been going the pace, even for New York. Too swift. Knew I ought to quit—not that it was telling on my health, for I'm tough as a battleship. But I'd managed to get into a rather ugly mess, Mr. Moffett, and my presence in New York was an inexcusable error. I won't go into details."

He paused to light a cigarette, offering his case to Moffett, who declined.

"Talked things over with my big sister—generally do when they're worrying me—and, as usual, she had an inspiration. Why not go West? Why not earn my living? Why not, indeed, get a job on Uncle Jim's newspaper—now my own—as a reporter? Happy idea! And so here I am, all ready for work." He touched the whitening end of his cigarette with his little finger and looked to Moffett for approval.

Moffett frowned.

"You'll have to give me more light, Mr. Trude. I'm still in the dark."

"I want a job."

"But you own the paper!"

"How many people here know it? What's to prevent Arnold D. Trude of New York, becoming A. Dempster Trude, St. Louis journalist, and only you, my sister, and I, being the wiser? Not that it matters particularly, only——"

Producing a card case, he extracted a freshly engraved card, which he laid on the editor's desk. Moffett adjusted his spectacles, removed the tissue paper and read:

A. DEMPSTER TRUDE

The St. Louis Publicist
Reportorial Staff.

"I've overlooked nothing, Mr. Moffett."

(Turn to Page 13.)

Steer Feeding Results.

Steer feeding demonstrations were made by a number of Colorado farmers last winter under the supervision of county agents and at the suggestion of Prof. R. W. Clark, animal husbandry specialist of the college. Reports were recently compiled and are now being made public for the guidance of farmers. Reliable results were secured as the feeders used the scales and kept accurate account on all items. Following is the report of the work done by William Morrison of Rocky Ford in cooperation with County Agent W. F. Droge:

One hundred twenty yearling steers were used by Mr. Morrison, averaging 604 pounds. They cost a little less than 10 cents per pound. Fed on beet tops alone in field for 58 days and gained 2 pounds per head per day. Then put in dry lot and fed on beet pulp, corn silage, alfalfa hay, beet molasses and cottonseed cake for 120 days and gained 1.9 pounds per head per day. Mr. Droge figures this gain to cost 19 cents per pound.

The steers were sold in Kansas City at $11.75 per cwt. and the shrink from Rocky Ford was 54 pounds per steer.

The profit per steer, considering only purchase price, feed and interest on the money invested, was $4.48. This profit was due to the cheap beet-top pasture.

There were 300 tons of manure produced and valued by Mr. Morrison at $2 per ton.

Twenty-five of the steers averaged 1,010 pounds, dressed out 59 per cent and the rest of them that averaged 866 pounds, dressed out 57 per cent.

Mr. Morrison has a wagon scale on his farm and weighed everything carefully.

The following is an epitome of the results of the steer feeding done by Mr. Morrison in dry lot for a period of 120 days:

Feed Consumed per Head per Day.

	Pounds.
Beet pulp	90.2
Corn silage	25
Alfalfa hay	7.6
Beet molasses	2.9
Cottonseed cake	.8

Feed Consumed per 100 Lbs. Gain.

Beet pulp	4,710
Corn silage	1,304
Alfalfa hay	398
Beet molasses	154
Cottonseed cake	41

Average initial weight of steers, 720 pounds. Average daily gain, 1.9 pounds.

Practical Gardening Work.

That country children do not have a monopoly on the pleasures of the great outdoors was shown recently in a number of Denver schools, where garden exhibits were given to demonstrate the value of practical instruction in food production. Garden work in the Denver schools is in charge of Prof. P. L. Clarke, who pioneered it before it became a recognized subject and who is now beginning to see the fruitage of his earlier efforts in a general recognition of the great educational and recreational resource that we have in the backlots and vacant spaces of the city.

It was the writer's pleasure to view one of these exhibits; that of the Columbian school, where Miss Martha E. Cain, a grade teacher, has given much time and attention to the training of pupils in gardening. The display included all sorts of products grown in the back yards of the district by the pupils who had been thoroughly trained in theory before they made the practical application of their lessons in soil culture and crop production. In addition to garden stuff there was also on display butter, eggs, canned goods and a fine showing of flowers.

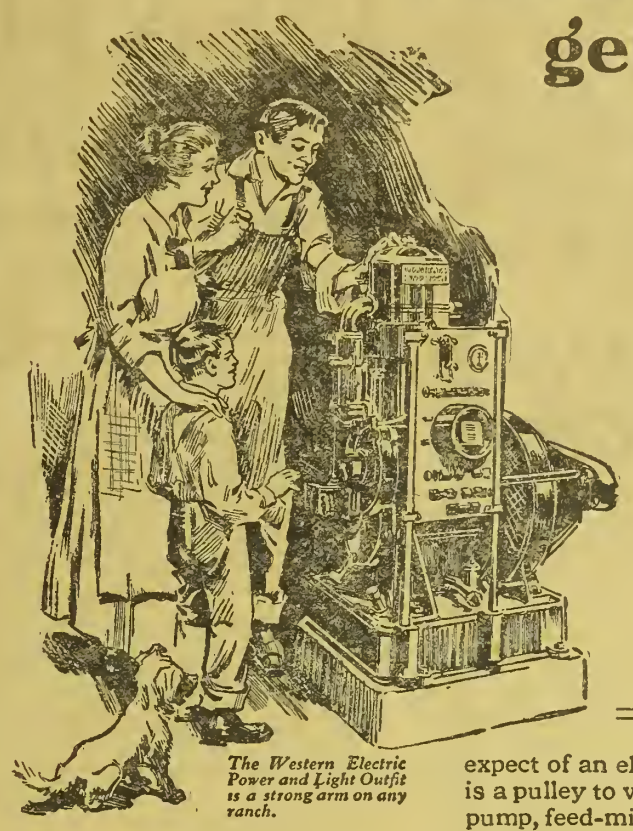
The eggs were graded as to size and color; the butter came in a neat carton. There was evident throughout the exhibit the care and attention to detail that comes only with competent instruction and practice.

The season's gardening lessons were impressed upon the entire school. Each class was taken through the exhibit-room separately and given a brief lecture while examining the exhibits.

"Why isn't this a good beet?" inquired Miss Cain of the class as she lifted a stock beet for inspection. A dozen hands went up and one little girl gave the answer: "Because it has too many little sprouts around the crown."

The pupils knew why the biggest carrot was not necessarily the best; why the Hubbard squash with the stem broken off was not given the blue ribbon. It was a convincing demonstration of the value of vocational work and it indicated, moreover, that the young people who had contributed exhibits, had put their theoretical knowledge into practice during the vacation period.

"When you can't get man-power try horsepower"



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H. P. Jensen

Editor's Note: *Mr. Jensen is a cattle rancher and farmer near Rexburg, Idaho.*

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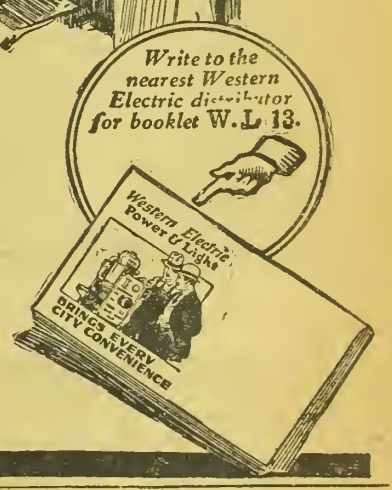

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Farmers Facing a Loss.

Farmers are facing big losses on the 1920 wheat crop. In fact, all farm products have reacted unfavorably to the general movement for a reduction in the cost of living. As usual, the reductions in the finished product are only nominal when compared with the declines in farm products. The reason for this is that agencies controlled by dealers and middlemen are in position to dictate prices on what the farmer produces. Other agencies, also outside of farmer control, are in position to say how and to what extent the farmer shall be financed. Between these two forces the farmer is apparently helpless. He may protest, but his remedy is not yet fully developed, although it is coming.

In the issue of September 1 we called attention to what happened on the Chicago Board of Trade, immediately on resumption of trading in futures, which had been forbidden as a war measure by the government. The wheat price went down in the face of an abnormal foreign demand and a congestion of freight traffic that made market supplies very light.

Obviously if speculation in wheat was a bad thing for the nation in war times, it could be no better now for either producer or consumer. The only benefit—if such it may be called—is to the speculator. Still when any serious legislative effort is made to stop speculation in foodstuffs the cry is raised that it is interfering with "the law of supply and demand." The other day B. E. Clement, president of the Texas Grain Dealers' Association, in an address at the National Grain Dealers' convention in Minneapolis, said:

"Propagandists both in class and in politics are seeking to create the impression among the producing and consuming masses that there is need for a new order of things. These disturbers are striking right now at the great primary grain markets which provide facilities to care for the heavy surplus movement at harvest time, which protect the producer against abnormallly high prices when such movement is over. On our great boards of trade the world's estimate of value, based always on the law of supply and demand, is crystallized into dollars and cents. Yet there are those whose vision is so circumscribed, or whose personal ambitions are such that they would strike a death blow to all these fundamentals of grain commerce. The professional organizer, alert for power, tries to show the producer that he is not getting enough for his products, at the same time endeavoring to convince the consumer that he is paying too much for them."

Mr. Clement has yet to learn the difference between propagandists and class agitators and earnest, conservative thinking farmers, who are seeking an orderly, lawful solution of marketing problems. Let him ponder the statement of J. R. Howard, president of the American Farm Bureau Federation, a clear-headed, conservative business farmer whose comment on the wheat situation in a recent Associated Press dispatch was as follows:

"This is 100,000,000 bushels under America's normal consumption," Mr. Howard said. "There is no secret in the grain trade that conditions of supply and demand justify a price of at least $3 and possibly $4 a bushel for wheat, and the present demoralized condition of the grain market is largely due to manipulations and propaganda by large speculators who sold tremendous quantities of wheat abroad in June and July at prices then prevailing and who are now trying to fill these orders at prices that will net them an extraordinary margin. One of the large packing houses is known to hold huge contracts for export grain and has been interested in seeing the market beaten down."

Let the general public be told that a fair price for the wheat of 1920 need not stand in the way of a decline in the price of bread. No less an authority than Herbert Hoover, recently gave the public figures showing that the cost of wheat in a 12-cent loaf is 3 cents. Why attempt to take all of the cut out of the wheat raiser? But we are anticipating. Bread has not declined, though wheat and flour have come down. The questions asked by T. C. Atkeson, Washington representative of the National Grange, are pertinent:

"While the farmer and the manufacturer are reducing their prices and accepting less for their products, what is labor doing and willing to do? Will Henry Ford's workmen be willing—now that the cost of living is reduced from 6 to 11 per cent, and the price of what they make has gone down from 10 to 30 per cent—to come across and offer to reduce their wages in equal proportion? Or will this offer be made by the operatives in the cotton or the woolen mills, or the hired help on the wheat and corn farms? The controlling arguments for increasing wages before wage and arbitration boards was the cost of living had advanced, making wage increases necessary. Is the reverse argument good, and will it now operate?"

The farmer expects to bear his part of the burden of readjustment, but why saddle him with the whole load?

What is the remedy? Co-operative control of the leading staples by the farmers. The farmer is entitled to and must have a say in determining the market value of his product. Such movements as that undertaken by the Committee of Seventeen, backed by the Farm Bureau Federation and other leading organizations, for an overhead wheat marketing organization, are on the right track toward an equitable solution of these problems—and equity means a fair deal to producer and consumer. This is not class propaganda or radical agitation, nor does it mean a change in the social system. It means that the farmer has ceased to bemoan his fate and is actively engaged in working out his own salvation along economically sound and safe lines.

✦ ✦ ✦

Field and Farm Merger.

The Denver Field and Farm recently announced that it had been merged with the Capper Farm Press, a syndicate of agricultural papers published at Topeka, Kansas, which point will be the place of publication in future. Mr. L. M. Wilcox, who established Field and Farm and was the publisher of that magazine for many years, states in the official announcement:

"Thirty-five years ago when I established this journal at the beginning of our agricultural advancement, I made it a point to say, in the few lines of a salutatory, that I had no promises to make but preferred to allow the conduct of the paper to speak for itself. In like manner at this time of retiring from the publication business I have no apologies to offer nor offenses to condone. The paper has been merged into the Capper Farm Press syndicate and will hereafter be issued by its large crew of editors and specialists as a semi-monthly periodical."

Senator Capper of Kansas has built up a syndicate of publications at Topeka which includes the Daily Capital, the Farmer's Mail and Breeze, and a number of other magazines, all of them issued from the Kansas publication house, but circulated in various states. Field and Farm has now been added. Offices will be maintained in Denver.

State Aid for Stock Show.

The state of Oregon has appropriated $30,500 toward the payment of premiums at the 1920 Pacific International Livestock show, to be held at Portland in December. This is the sort of practical support that the National Western ought to have from the Colorado legislature. Untold good has been accomplished for the state in building up the livestock industry and now that the packers have been forced by the federal government to relinquish control of stockyards, stock shows and other side lines, financial support for the stock show must come from other sources. The livestock industry will bear the brunt of the burden, but a public enterprise of this kind which counts its results in public good through the development of agriculture, has a just claim on state support.

The Fence That Sagged

A Little Homely Philosophy by The Mountain Farmer.

An unkempt philosopher came by my place this morning. He wore patched overalls of a light blue that indicated their having been washed, a weather-beaten coat and a limp-brimmed hat.

He stopped to chat and rested one foot in a mesh of the woven-wire fence. It sagged rather badly.

"Your fence is not very tight," was his opening comment.

I agreed with him.

"The corner posts not solid enough," he went on, ready to follow his advantage now he had scored a point. I nodded.

"There is no tension on the wire and these posts wouldn't stand it anyway. Fence has to have a good tension to look right and hang right. Lasts longer when held up in shape, too. A slack woven fence soon gets bulged and broken. Stock gets into it with horns and hoofs and soon puts it out of shape."

I began to feel uncomfortable. This exposure of my shiftlessness was hard, especially as it was unanswerable. But I acknowledged the fault as amiably as I could, and so encouraged worse and more of it.

"I see your field fences are slack too," he mused, with kindly tolerance. "A calf could get in or out of there with no trouble at all. A cow could ease through if she got the notion. I expect you've had a little trouble, ain't you?"

I admitted the cautious and gentle impeachment.

"You have used too light a wire anyway. Number fourteen wires will stretch too much. If a bird lights on your fence it sags from then on. A wet snow will make it droop. After you've stretched it tight it won't stay tight any time at all. You can't ever get that light wire real tight. 'Bout the time she sings she breaks." He was scoring right along. I murmured a rather faint encouragement.

"Never ought to use a lighter wire than the legal limit—number thirteen wires. It's a hundred per cent better than this long distance special. It only makes a man think he's got a fence when he ain't." He paused. I thought he had exhausted his subject.

"I noticed a place or two as I came along where the staples had come out and the wire was loose from the post. You used too short a staple. Inch and a half isn't enough for this kind of wood. Ought to have a two and a quarter inch staple in lodgepole pine posts, and longer in aspen. Aspen posts crack so bad. They're forever letting go of short staples. Aspens are easy to get, but it pays to go to twice the trouble and get seasoned pine. Can't you get some pitch posts on your place?"

"No, there is no yellow pine," I said.

"And you haven't any cedar?"

"Only a few sticks."

"Well, you have a lot of lodgepole snag-tops. The dead top is pitchy, and makes a dandy good post. Lots of these trees would give you two posts, and you can use the balance of the tree for building or let them season for firewood." Again he fell silent while his eye roved over the hills. Then—

"Got a fence through that green timber?"

"Yes, on the survey line, all the way round." This with a flash of pride.

"Bet you've stapled your wire to the trees to save digging post holes."

"Sure."

"And the tree waves in the wind and the staple wears through the top wire."

"Yes," I admitted, for have I not mended fence in a score of such cases.

"There you are again," he triumphed. "Always cut off the top of the tree so the wind won't move it. And if there are dead trees standing near your fence, push 'em over, or they will wreck your fence some breezy day."

My face fell, for less than a month ago I found a tree down that I had tied to and in its fall it had wrecked two hundred feet of fence, and the horses had got out twice before I found where, and I didn't have them when I needed them, besides wasting two half days hunting them. Shucks!

"A crop not fenced is a waste of work and seed," went on my loquacious friend. "Stock not fenced is never where you want it. You can't find the cows at milking time, nor the horses when you want to hitch up. A bum fence makes a bum farm."

He wouldn't stay for dinner, and when he had gone down the road I thought of my fencing and how it would look in his eyes for another mile, the faults and flaws and horrible examples he would notice.

I also thought about his parting words. I had asked him if he owned a farm, or a business. He said not. Then he saw a question in my eyes that I did not put into words.

"All I've got is what I stand in," he said. "And if you want to know how I got this way, I'll tell you. By doing what you're doing," waving his hand at my fence.

"Just following the line of least resistance."—GORDON KENT, Pinecliffe, Colo.

Strasburg Farm Bureau Fair.

Strasburg was for the second time the scene of the Arapahoe County Farm Bureau fair, early in October. Progress over the previous year was shown in every department. More space was provided for exhibits and it was well filled; in fact, additional tent room had to be made for some of the agricultural displays. There was only a small showing of livestock. The calf and pig club exhibits were good, the youthful breeders doing their share toward the success of the fair.

It was largely a showing of the products of the Kiowa valley, where there is no irrigation, but careful tillage methods conserve the natural rainfall for the production of all the usual farm crops—wheat, corn, oats, rye, cane, Sudan grass, etc. There was an especially strong showing of garden products, for many of the farmers make effective use of their windmills to supply water for the gardens. One of the reasons for the success of farming in the Kiowa valley is the practice of raising food for the family as well as feed for livestock. Silos are becoming more plentiful in the section and dairy cows and hogs are found in increasing numbers as a necessary adjunct to the farming operations.

Much attention is given the production of leguminous crops, as was evident from an examination of the exhibits. Sweet clover and alfalfa are extensively grown. There was a showing of the new annual white sweet clover, the plant discovered by the Iowa Experimental station. It was labeled the "giant annual," and alongside was displayed a plant of the common biennial white sweet clover. The annual had made a growth this season of exactly 8 feet, while the biennial native was only half as high.

Grapes, strawberries and other fruits not usually expected on plains farms were shown; canteloupes and watermelons were there of a size and quality to match the famous Rocky Fords. There was a fine showing of corn, with which crop both club members and adult farmers have been making tests, in the effort to secure a variety that will mature regularly under the prevailing climatic conditions.

Howell Wins at Wheat Show.

Word comes from Wichita, Kan., to the effect that John Howell of Montrose won the world's sweepstakes prize for best bushel of wheat at the International Wheat Show. Mr. Howell exhibited black-hulled Turkey winter wheat in the contest for best bushel, open to the entire world. He won against exhibits from the best wheat farmers of America and his victory is an indication that Colorado can and does produce quality wheat. John J. Skinner of Fruita, another Western Slope grower, pulled down second prize in the wheat contest.

Remember that the tractor has a lot of fall plowing and belt work to do yet this year. Maybe a little looking over would be a good thing.

Comment by Farmer Putnam

OUR MISSOURI FRIEND GROWS ENTHUSIASTIC OVER MONUMENT POTATO BAKE.

EVERY time I go up to Monument it makes me wish that I lived thar. It's a fine country and finer people nobody could wish to meet. It was the Potato bake that I was to and this time they didn't only have baked spuds, done brown in the ashes, but they had barbercued beef with buns, coffee and butter. I come away from the ranch without tellin' Josephine that they was a-goin' to have eats. She thought I was a-goin' to some kind of a farmer's institoot and she was plumb put out when I got back and told her all about it, which I hadn't intended to do, but gave myself away by sayin' that I seen some of her friends and that they sends regards and sympathy. When she asked me who they was I was kind-a caught nappin' and mentioned over some of the names like Mr. Sawyer of the Springs, Mrs. Evans, the Democrat Tablerocker, John Green, Bill Lauck, J. M. Bradshaw, etc., and she sez right quick:

"I thought you said this was a kind of a institoot? What kind of a institoot was it anyhow? Judging from them names my guess is that it was a fried chicken match. Tell me the truth, Tom; didn't you go to a picknick and leave me to home a purpose?"

"Now, Josie, I reckon I did make a mistake by not thinkin' to tell you that I heard they was a-goin' to serve baked spuds, but I thought Prof. Sandstone was to be thar and to lecture and when I got thar lo and behold it was a barbercue and no speech makin' was allowed."

"Yes, and I reckon you was purty sore when you found out that it warn't no intellectual feast. You're so all-fired fond of feedin' your mind that you'll walk clear around a picknick fur fear somebody might want to force somethin' down your face fur the refreshment of the inner man. You'd go hungry any day to hear a highbrow from the Agriculture college lecture ruther'n waste time at a barbercue; you cain't bear the smell of roast beef, or spuds; and fried chicken just about makes you sick—when you cain't git to it! I know you like a book. Don't tell me you didn't know it was comin' off; tell the truth. Say, 'Josie, I cain't tell you a lie: I wanted to eat it all and if you'd a been thar you'd a kep' sayin': "Now, Tom, don't- make a pig of yourself ag'in'!"'"

This here kind of argymint don't tell us nuthin'. I'm sorry I left her at home because them people at Monument had enough and to spare. They had a nice oven built for the beef right in the ground and it was cooked done. The spuds was baked in a pit in the hot ashes and was just fine too. When noon come we was all lined up around the big square inside of which the committee was a-workin'. Ralph Walker was one of the bosses and I asked him if I couldn't serve on the committee, and he sez:

"It's certainly fine of you Farmer Putnam to want to help us, but you're our guest and it wouldn't do to have you work."

Of course, after he was that polite I couldn't insist on gittin' inside of the fence and had to wait with my paper plate like the rest of 'em till the servin' begun. Some of the most active on the inside was Mr. Mangas, Mr. Betts, Mr. Watts, Mr. Higby, Ben and Bill Millwright, Mr. Shrader, Mr. Preble. Among the most active on the outside was President Jim Gauld of the Farm Burro, Ex-president W. H. Taft—no, no, W. H. Paul, County Agents Miller of Douglas county and Hale of El Paso. Miss Snow was thar too. She's the county demonstration agent but I failed to see her washin' dishes or carryin' water to the crowd. The people has been kind-a joshin' about Hale and Snow, and now wherever them two goes why remarks is made about the weather. They ought to call 'em the Thermometer Twins.

While we was a-waitin' fur the grub to be dished up we was kept busy shakin' hands with statesmen from all parts of the county. State Senator Puffer and Representative A. M. Wilson give me their cards and both of 'em said they knew me by my reputation. I don't hardly know whether to take this as a compliment or not, because I don't know who'se been talkin' to 'em, but not livin' in their county I cain't vote fur 'em anyhow. I reckon they knowed I was from Arapahoe and couldn't do 'em no good at the poles, because they didn't bring out their cigars when I talked to 'em, but reserved the smokes fur their own consituents, which is good politics and less expensive.

Just after I got through shakin' hands with them statesmen I seen John Lennox and I says: "Why, hello, here's another one; what air you runnin' fur?"

"A baked potato and a nice piece of roast beef," he sez. Well, we didn't have much longer to wait, but while we was waitin' the Monument band played several nice pieces. I allus did like band musick and what makes me sore now is that I cain't play no horn of no kind. I tried to blow a cornet onct, but my whiskers got caught in the suction and it tooted a kind of a falsetto note that sounded half high and half low. The feller that owned the horn said he'd learn me to play it if he was sure that I had a lip that would fit the mouthpiece. If I didn't, he said, it wouldn't be no use to try to learn, and he couldn't tell what kind of a lip I had onlesson I shaved my chin whiskers off. Musick is a funny thing. Fur some kinds you got to have a ear—like the feller that I seen at the Logan county fair that I wanted to learn to play the saxaphone from; he sez, I'd have to have a ear fur musick. Now this feller sez I'd have to have a lip to play the cornet and the leader of the Monument band sez it takes a feller with a big stummick to play the base drum. I reckon before I kin join the band I'll have to have a physical examination, but I cain't help wantin' to join whenever I hear a good one like that thar Monument band.

They had some good exhibits of corn, spuds, wheat, barley, oats and wimmins' stuff—jellies, preserves, canned goods, cake and candy. I wanted to help judge them things fur Miss Snow, but she sez she didn't need me and she had Mrs. Taylor, the banker's wife, to guard the chocolate fudge and other valuables from them predatory males.

The corn was nearly all from Douglas county, brought in by County Agent Miller and raised by club boys. I seen one of the young corn raisers, Lyle Waring by name. He was from Larkspur, which is nearly 7,000 feet, but he raised good White Australian and Minnesota 13. It don't seem to make no difference to them kids what the climate is like—they go at it and raise crops by preparin' their ground right and givin' the corn good cultivation, so's the weeds don't steal all the moister. Lots of times them old farmers blames the climate fur their own shortcomin's. Its the easiest way to excuse poor farmin' to say, Oh, we had a late spring, or a dry summer, or a early fall, or didn't git rain when we needed it. I hope them people that trains our young folks will git 'em away from the idee that the climate is ag'in the farmer. A good deal depends on how a feller tackles a job. If he sets out afraid of the weather and thinks right from the start, "Oh, what's the use," why his results air just about in proportion to his faith. God made the climate and I reckon if he didn't want us farmers to hustle fur our livin' and overcome the climate why He would-a made it different.

Anyhow them Divide farmers don't seem to worry about climate. I seen some of the finest oats—Swedish Select—in a sheaf took right out of the field by J. M. Preble, and his place is 7,800 feet up. He took the blue ribbon on this oat and also on Turkey Red wheat. His neighbor, Chas. Wisler, had the blue ribbon on Petkus rye and it had a fine plump berry, nearly as big as barley. That's one thing I've noticed about them high altitood grain crops, the weight and quality is better'n you git lower down. So it pays to buck the short season. Mr. Preble was a-showin' me some Mexican flint corn that he has been a-growin' several years up on his

(Turn to Page 11.)

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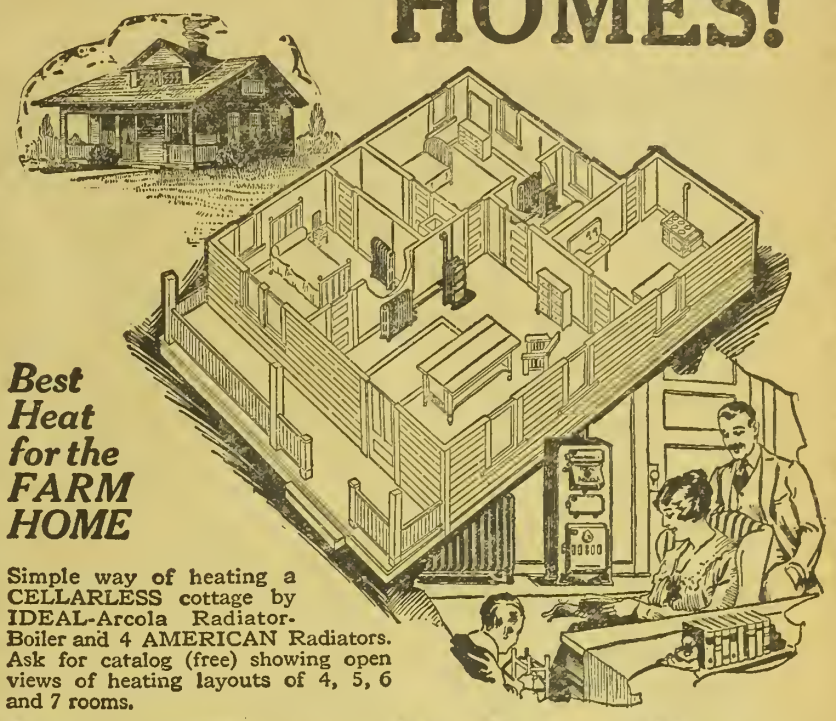

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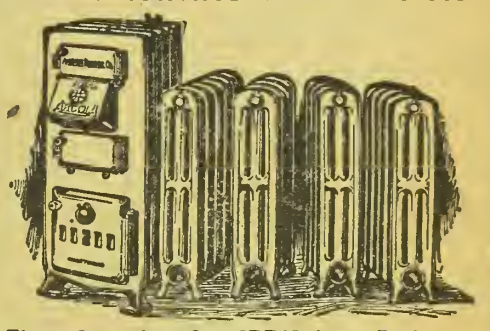
Prices include Expansion Tank and Drain Valve. Prices do not include labor, pipe and fittings used in installation and which are supplied by the local dealer at extra charge. Radiation is of regular 38-in. height 3-column AMERICAN Peerless, in sizes as needed to suit your rooms. Outfits shipped complete f. o. b. our nearest warehouse, at Boston, Providence, Worcester, Springfield (Mass.), Albany, New York, Philadelphia, Harrisburg, Pittsburgh, Baltimore, Washington, Richmond, Buffalo, Cincinnati, Indianapolis, Birmingham, Detroit, Chicago, Milwaukee, Minneapolis, St. Paul, Des Moines, or St. Louis.

Shipped complete for immediate installation

The beauty of the IDEAL-Arcola method is that no cellar is needed. Everything is on one floor. The Arcola is placed in any room that has a chimney connection. No running to cellar. Same water is used over and over again for years. No fire risk.

Buy now at present attractive prices for outfits complete!

IDEAL-Arcola outfits consist of the boiler and radiators to heat various size houses. Write us your requirements! Unlike stoves, there are no coal-gas leaks into the living-rooms. The IDEAL-Arcola delivers the soft, radiant warmth of hot water—not the dry, burnt-out atmosphere of stove heating. There is no fire risk to building—no danger to children—fire lasts for hours! The Arcola burns hard or soft coal.



The outfit consists of an IDEAL-Arcola Radiator-Boiler and 4, 5, or 6 AMERICAN Radiators and Special Expansion Tank—everything except labor, pipe and fittings, which any local dealer will supply. See table above for various sizes and prices of outfits.

Catalog showing open views of houses, with the IDEAL-Arcola Boiler in position will be mailed (free). Write today

Sold by all dealers. No exclusive agents.

AMERICAN RADIATOR COMPANY

Write to Department F-27 Chicago

IDEAL IDEAL IDEAL IDEAL IDEAL IDEAL IDEAL IDEAL IDEAL IDEAL IDEAL IDEAL IDEAL IDEAL IDEAL IDEAL

Have you had trouble or misunderstandings over the division of water for irrigation? Do you know if you are getting all the water to which you are entitled? The Burnham measuring device is the answer.

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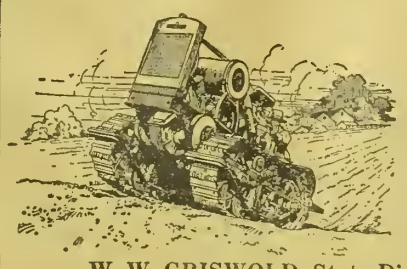
1837 Market St. Denver, Colo.

We manufacture a complete line of Irrigation Supplies, such as Flumes, Pipe, Gates, and other accessories. Write for catalogues and information.



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Creeper Type, with four mould-boards over other types. Three speeds, 1½, 2¼, 3½ miles. A GIANT FOR PULLING!! It has Manganese Steel Treads, which require no attention or oiling and Guaranteed.

It is Non-Slipping, Light Ground Pressure, Non-Packing, Short-Turning, Ditch-Regardless. Tractors in Denver, ready for immediate delivery. Medium sizes and prices. Absolute guarantee of successful field work.

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$25.00 Sweep Feed Grinder | $31.00 Galvanized Steel Wind Mill.

We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.

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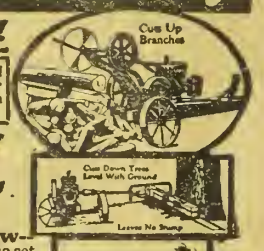
Easily—At a Cost of 1½ Cents a Cord!

Write today for Big Special Offer and Low Direct Factory Price on Ottawa Log Saw. Strictly a one-man outfit that will *Beat the Coal Shortage* and make big money.

Friction Clutch You pull the lever to start saw blade, push lever to stop; engine runs on.



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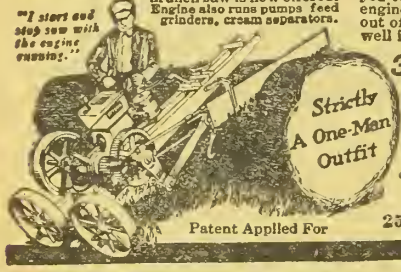
Does Work of 10 to 15 Men at less than one-tenth cost. Saw makes 310 strokes a minute. Mounted on wheels. Easily moved from log to log and from cut to cut along the log by one man. No more back-breaking cross cut sawing. The Ottawa fells trees any size. As one-third of the tree is in the branches, a specially designed fast cutting branch saw is now offered. Engine also runs pumps feed grinders, cream separators.

Direct Gear Drives Saw—no chains to tighten; no keys; no set screws. 4-cycle Frost Proof Engine with counter-balanced crank shaft. Pulls over 4 H-P. Oscillating Magneto Ignition and Automatic Governor with Speed Regulator. Special clutch, lever controlled, enables you to stop saw without stopping engine. Simply built; nothing to get out of fix. Uses little fuel. Works well in any kind of weather and on any kind of ground.



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FREE BOOK. Send for big 82-page book and customers' reports. Today sure. Also our low prices.

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Patent Applied For

Method of Garnishment.

A. owes B. money. B. has hard time to collect it. C. owes A. money. Can B. stop C. to pay the money to A., and to pay it to B.? That is, the amount A. owes B. Please explain the way of garnishing and the proper authority to go to for making out the papers.—A. B., Oregon.

The usual method of garnishment is to bring an attachment suit against the person owning the money and as incidental thereto garnish the person owing money to the defendant. In this way the fund is tied up. You may also garnish in aid of execution, that is after you have the judgment the garnishment can go against the party owing the defendant money.—Hamlet J. Barry, 724 Equitable Bldg., Denver, Colo.

Mineral Reservation Rights.

A. has a farm cultivated and fenced, leaving the usual right-of-way road on section lines. B. has unfenced land on the opposite side of the road. Has A. a right to turn his stock into the road where it can get to B.'s land? If not, how much land would A. have to throw open in order to call it or make it open range?

A. bought railroad land subject to the usual coal and mineral reservation. B. bought the coal reserve, which says he has the right to use as much of said land as is convenient or necessary for the removing of the coal. B. is stripping the coal, which is the most practical way to get it out. Has put in scales, has put in a combination scale house, bunk house, and garage, has a stable for his own and the coal haulers' teams; also fenced a small feed lot. These things are as compact as is consistent with safety. He also keeps some cows for his own use in this stable. Is B. going out of his rights in doing any of these things? If so, which?—W. B., Elbert County, Colo.

As to the first question, B. must fence the cattle out as I understand it. As to the second question, in my opinion B. is within his rights with the possible exception of the cows kept for his own use, though even these seem all right to me.—Hamlet J. Barry, 724 Equitable Building, Denver.

Little Chance for Rehearing.

In 1905 my father filed on a homestead, 160 acres. He got a clear filing direct from the government and he and my mother improved and lived on this claim for over two years. My father got sick and was obliged to leave the claim and live with my brother. In 1911 his claim was contested, but he was too sick to go, so the government let another man file on it; this party proved up on it and then sold it as soon as he got his deed. My father died in 1914. Is there any way in which we can get this land back?—G. B., Oklahoma.

We do not think it possible for you to reopen this case and have only one suggestion to make: You should furnish this information to the congressman from your district and ask him to take the matter up with the U. S. General Land Office at Washington, D. C., and find out whether proceedings brought by the heirs would be effective in re-opening the case. In matters of this kind that have been settled by regular court proceedings there is little hope of a rehearing, especially where the land has already passed out of the hands of the contesting party.

Execution of Judgment.

Answer to Subscriber, Colorado:

1. If A. has a note at the bank due in 30 days, can A. have the bank protect his wages so he can meet its payment?

No.

2. In what way can a judgment against A be executed if he holds no property, real or personal?

By assignment of wages to the bank.

3. Can the law compel A. to go before the court and swear to this fact, or does a person's exemption protect him against ransacking of his home?

The law protects you against unreasonable searches and seizures.—Hamlet J. Barry, 724 Equitable Bldg., Denver.

Colt Has Cerebral Meningitis.

I have a three-year-old gelding colt, weight 1,150 pounds, that we were working on the header this fall and a short time before noon he got so that he would not pull up as good as he always did, and at noon when we unhitched him he acted dizzy and when we put him in the barn he was so dizzy he could hardly get in. We hadn't been working him hard only about two-thirds of a day at a time. We changed off with other hores. He holds his head like a blind horse, but his eyes are all right and his hearing also. He has been this way about three weeks.—H. E. S., Larimer County.

The indications are that the colt has suffered a rather mild attack of cerebral meningitis. This may have been induced by overheating. Many of these cases can best be classified under what is commonly known as forage poisoning. The Kansas Horse Plague is ascribed to forage poisoning, although the exact nature of the poison involved is not known. There are a few isolated cases of this strange disease again this summer and many of them are atypical. Just what induced the disease in this case of course we do not know. It would not be surprising if more of your horses became affected, although there is no indication that the disease is infectious. It will be better to keep the horse in the shade and on a light laxative diet, such as alfalfa, roots and bran. Feed from a manger and do not turn him in a pasture. It is impossible to treat the case intelligently without knowing more about it. Potassium iodide in dram doses once a day for ten days might be beneficial.—G. H. G.

Colt Has Paralysis.

A month ago I discovered something was wrong with my yearling colt, so I called a veterinarian and he pronounced it loco. He put the colt on arsenite and green alfalfa. There is slight improvement. The colt has swelled on the stomach to the throat. He has poor use of his hind legs and if turned short would fall down. Eats and drinks well and is in fairly good flesh.—Montana.

Paralysis of colts when about a year old is quite common and suggests the probability of a uniform cause. Certain it is that these symptoms frequentil follow strangles (distemper) although the disease may have been mild and scarcely noticed. The symptoms indicate intoxication, either from preformed toxins associated with foods or from infection. Arsenic as an alterative and tonic, combined with green alfalfa as a laxative, would seem to be an appropriate treatment, but the arsenic should not be given longer than for a period of two or three weeks. This treatment might possibly be followed by potassium iodide with beneficial results, but since your veterinarian has seen the case and appears to have it well in hand it would be very inappropriate to "swap horses while crossing the stream."—G. H. G.

Keen Kutter Farming Tools Stand the Test of Time

"Wood Chopping Time"—and the brisk, clean air of the great out doors—that's the real test time of Keen Kutter Farming Tools. Right then in the happy, "day-long" sawing, chopping and splitting is when every Keen Kutter Saw, Axe or Wedge really "proves up" to the skill of the man who uses them.

The friendly feel and balance of hand picked handles, steel painstakingly tempered to predetermined degree and designs that actually meet working conditions all contribute to make Keen Kutter Tools look cleaner, work better and last longer.

The patented Keen Kutter zig zag tang so firmly welds metal to handle that Keen Kutter farming tool handles cannot come loose

Fifty years of experienced tool making is behind the Keen Kutter money back guarantee.

The buyer is always protected.

Simmons Hardware Company

KEEN KUTTER

Comment by Farmer Putnam.

(Continued from Page 9.)

place and it makes a fine hog feed and gits its growth in lessen 90 days.

I got a chanct to shake hands with Pat Murphy, the oldest farmer in the west—he'll be a hundred years old next March. Him and Tom Long is bachelors and a-livin' on a ranch that Pat Murphy has been farmin' fur fifty years. I took off my hat to the old veteran. A man that'll stick to the game till he's past 99 deserves to be honored. The editor is a-goin' to give him a write-up soon.

Everytime I go up to Monument I wonder what makes me like that country so well and I cain't figger its anything but the people. They make a feller feel to home among 'em. I was a tellin' Josephine what I thought about it and she sez:

"I reckon they know how to make you feel at home, Tom; they feed you well."

They is somethin' to her theory.

Thos Jefferson Putnam.

Method of Accumulating Moisture for Dry Farming.

(Continued from Page 4.)

is mulched with straw about 4 inches deep.

The Everbearing is one of the hardiest of the strawberries and if the early blooms are destroyed by frost they still keep coming. If any other variety is desired, be sure that it is a late blooming kind. If there is a long dry spell and the plants have quit for want of moisture, it is a good idea to pull off all the leaves and then as soon as rain falls the center bud will swell and fresh leaves and blossoms appear.

For all the above mentioned crops, the land should be plowed as deeply as possible in May or June and allowed to lie fallow and accumulate moisture until the following season. If fertilized the manure should be plowed under at the time the fallow is prepared. The following spring before planting the land should be worked again about 4 or 5 inches with the plow or disk and harrowed almost to a dust mulch.

For tomatoes, squashes, watermelons, etc., and all crops which require plenty of room the dead furrow method is a good way of laying off the land for planting. This is done by plowing out a dead furrow where the row is to be, making two rounds with the plow. The harrow or drag of some kind is then used crosswise, dragging some of the topsoil back into the dead furrow and the field is then smoothed and disked towards the plant rows, which gives them the advantage of all the drainage from the interspace during the summer rains. This method of fixing the land for special crops should be used only for level fields, for on slopes or hillsides flood water will follow the depressions and wash them out.

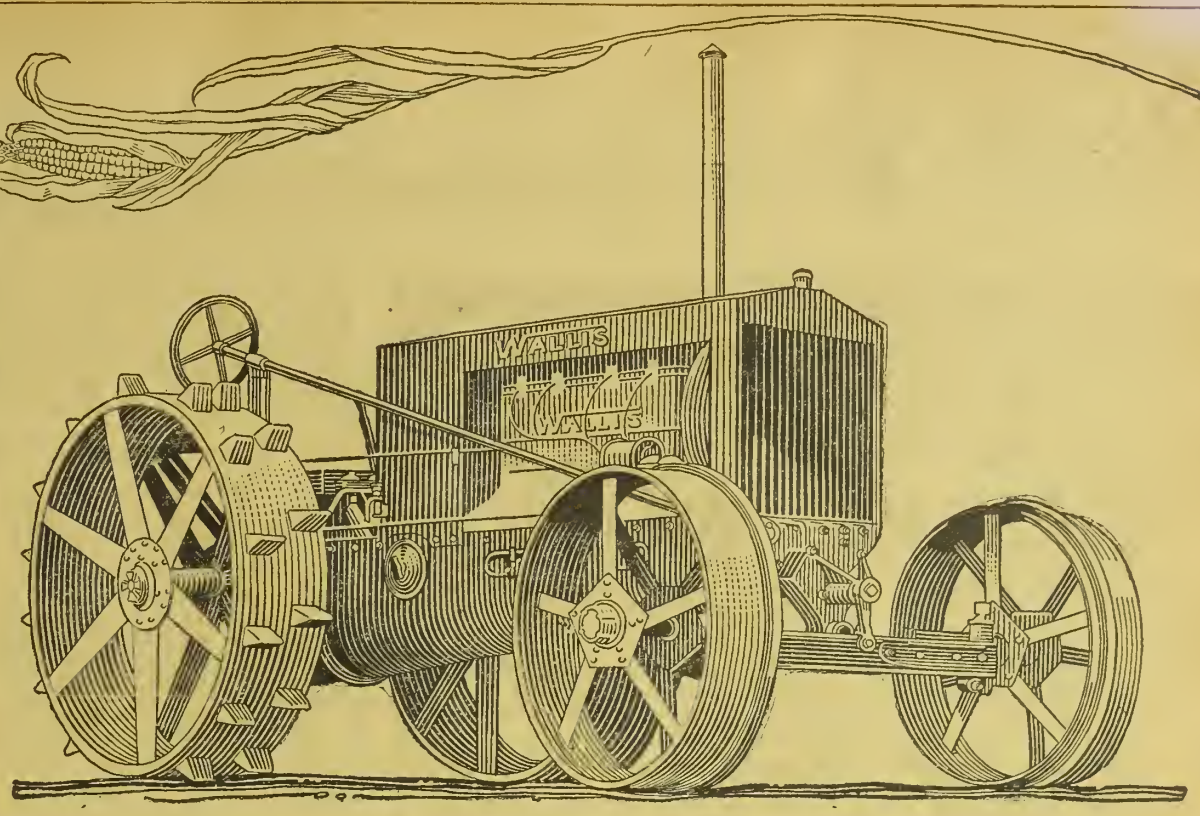
Although it is quite possible to raise a family garden as well as crops without any artificial watering, it is much handier to do it with a windmill, and tank, or if there is a small hill behind the house, with a reservoir. Farmers are sometimes persuaded to buy a gas engine instead of a windmill. A good windmill is on the job day and night, regulating itself according to the wind, and the repairs for the first ten years may not amount to $10. There are all sizes and shapes of windmills and some in Kansas and Nebraska are double-headed, pumping enough water to irrigate with. If a tank is used it can be rocked or concreted up underneath with good thick walls for a milk house and the pipes for the house coming from the bottom of the tank through this into the ground will never freeze in winter. A wooden tank is handier for the farmer to make connections with than a galvanized one, for holes can be bored anywhere in it with a common auger and pipes or faucets screwed in where required. The garden can be laid out in rows leading from the highest point nearest to the tank and each row being trenched on one side, the children can water it by just placing the hose in the trench and turning the water on.

Doubtful Honor.

"My husband tells me that he was out late last night with your husband."

"That isn't so. I want you to understand that my husband was out with your husband."—Detroit Free Press.

Yes, paint does cost more than it used to. But a little will go a long way in sprucing up that dingy kitchen.



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The U-shaped frame of the Wallis is typical of this tractor's sensible design. Yet, it required exhaustive experiments to develop this exclusive frame, simple as it is.

To the Wallis this **"U"** frame gives a solidity and rigid strength best obtainable in this method of construction. There is a noticeable freedom of vibration, too, whether the Wallis is pulling a load or working on the belt. With this U-frame the Wallis is lighter in weight than any tractor of its class.

This ideal combination of great power with light weight makes the Wallis AMERICA'S FOREMOST TRACTOR. The U-frame is but one of the many desirable features to be found only in the Wallis. Years of untiring research and experience with the problems of tractor building and operation have placed Wallis in a leading position. Wallis power means *more acres per hour*, whatever the field or belt operation.

Let us tell you more about Wallis—what it does—how it is built—how it means bigger, better crops and more profits to thousands of farmers. Inquiries will receive prompt response. Also visit the nearest Wallis dealer.

J. I. CASE PLOW WORKS COMPANY, Dept. A578, Racine, Wisconsin

WALLIS
—more acres per hour

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are helping their husbands to prosper—are glad they encouraged them to go where they could make a home of their own—save paying rent and reduce cost of living—where they could reach prosperity and independence by **buying on easy terms.**

Fertile Land at $15 to $30 an Acre

—land similar to that which through many years has **yielded from 20 to 45 bushels of wheat to the acre.** Hundreds of farmers in Western Canada have raised crops in a single season worth more than the whole cost of their land. With such crops come prosperity; independence, good homes, and all the comforts and conveniences which make for happy living.

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are sources of income second only to grain growing and stock raising. Good climate, good neighbors, churches, schools, rural telephone, etc., give you the opportunities of a new land with the conveniences of old settled districts.

For illustrated literature, maps, description of farm opportunities in Manitoba, Saskatchewan, and Alberta, reduced railway rates, etc., write Department of Immigration, Ottawa, Can., or

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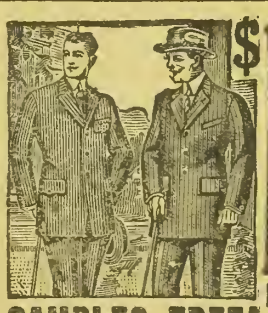

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Where Sam and Frank Dutton are always glad to greet their friends.

Herefords Break Records.

The best sale of Hereford cattle ever held in Colorado and adjacent western territory was that P. J. Sullivan's at Wray, Colo., Wednesday, October 13, when forty-three head of fancy bred Anxiety 4th bluebloods averaged $1,022.09. While it stands as a record in western territory this sale is also one of the best in the country in recent months and opened the eyes of Hereford breeders from many states as to the esteem in which these animals are held. Many of them will remain in the west to further the advance that is being made in Herefordom.

The offering consisted of forty females and three males, the top price of the sale being $7,000, which was paid by C. H. Thompson of Indianola, Neb., for Bright Duchess 85th, with calf at side, and rebred to Superior Mischief. She is a Domino female from a Dandy Rex dam, and was the subject of lively bidding by breeders from several states.

Major Domino Jr. brought the third highest price of the sale—$3,400, paid by Kee & Babcock of Cambridge, Neb. The second cow brought $4,600, and went to C. Blaine Scott of Idalia, Colo. Many of the females in the sale were bred to Superior Mischief, the $22,000 bull purchased by Mr. Sullivan last January at the Mousel sale. John J. Phillips of Goodland, Kan., secured nine heifers, ranging in price from $400 to $1,000, and the Firm Bros. of La Veta, Colo., purchased several of the Wilton Domino bred heifers. Other western buyers were J. F. Miller, Holly, Colo.; L. J. Keech, Alvin, Colo., both of whom purchased young herd sires; J. O. Hallpit, Kirk, Colo.; D. Ogh, Benkelman, Neb.; F. E. Bullard, Laird, Colo.; Mason Chamberlin, Wray, Colo.; E. L. Belsky, Eli, Neb.; L. A. Burson, Morrill, Neb.; W. J. Moore, Wray, Colo.; John Sullivan, Wray, Colo.; Joseph Keenan, Wray, Colo.; Wm. Wells, Wray, Colo.; Gus Jesse, Wray, Colo.; H. Mahoney, Alva, Wyo.; Foster Livestock Co., Rexford, Kan., and F. S. Hyland, Akron, Colo.

Science Tackles Our Potato Problems.

(Continued from Page 3).

large ones, but no one else cares for them. Yet we go on year after year planting our potatoes so that a large percentage of tubers come "extra large bust measure." The average planting distance in the Greeley district is 12 to 14 inches—mostly the latter. On the station they are trying 8, 10, 12 and 14 and results are to be compared over a series of years to find out what effect—if any—close planting has in reducing tuber size. Some growers decline to believe, it will have any appreciable effect. They say, the seed, the soil and the season, plus irrigation methods, take this question largely out of the grower's control and they fear that close planting will reduce the tonnage of marketable spuds rather than increase it. That is, they had rather risk growing many big ones than too many small, undersized ones. Grading has emphasized the need for more of the medium market size tubers—the size that fits a lady's hand and not the vegetable monstrosity. The experts feel sure that size can be controlled, so we shall let them try to prove it.

How about immature potatoes for seed? To date there are no conclusions to make public from this test, but like the other questions it is one for which a definite answer is desired. The seed selection experiments are showing up about as growers who study their business have reason to expect—in favor of "carefully selected seed from productive hills." In this test there are rows from bin selected seed, some from roughed fields, some from mass hill selection and some straight hill selected. Reports on this experiment are awaited with interest.

The station has a medium-heavy loam soil, not an ideal potato soil, and its irrigation supply is not overly certain. In a year when the water is short the station is apt to feel it. There is, therefore, no advantage of either soil or water supply, but more nearly a condition that approximates the average in a large part of the Greeley district. That district is peculiar in one respect—much of the potato crop is produced on soil not ideally suited to the tuber. This is due to the fact that other farmers not so favored took advantage of the success of those located on typical potato soil. They found the potato an adaptable plant, especially so after alfalfa, and they needed it as a cultivated crop in the rotation and knew it would be profitable as a cash crop. The potato experiment farm comprises 40 acres of land situated northward from Greeley and at the edge of some of the most productive farms in the section. Experimental results are therefore typical of the average, which is desirable and more valuable in applying the lessons than if the soil type were highly favorable to potatoes. The potato crop should be practically universal in temperate farming regions, rather than a specialized crop, as for example celery. We not only need the food, but our soils need the culture that potatoes require; and the cost of production is low, compared to other root crops. What have we that produces more tons of food to the acre at the same outlay?

Colorado's potato industry is, however, a specialized business, due to our ideal climatic conditions approximating those of the native habitat of the solanum tuberosum. We are shipping about 12,000 carloads a year from the various districts in the state and the quality is of the best. For that reason the work of the United States Potato Experiment Station at Greeley deserves support from our growers. Mention it to your congressmen and senators.

Proof.

"Herbert, you weren't listening to what I said."

"Er—what makes you think that, darling?"

"I asked you if you could let me have a hundred dollars, and you smiled and said, Yes, dearest."—Life.

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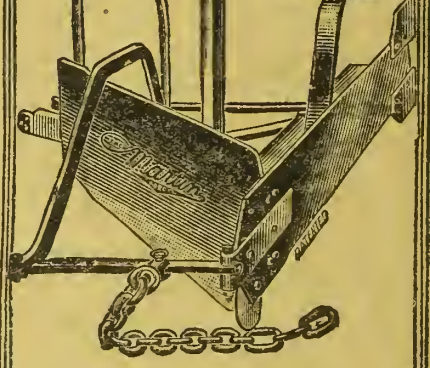

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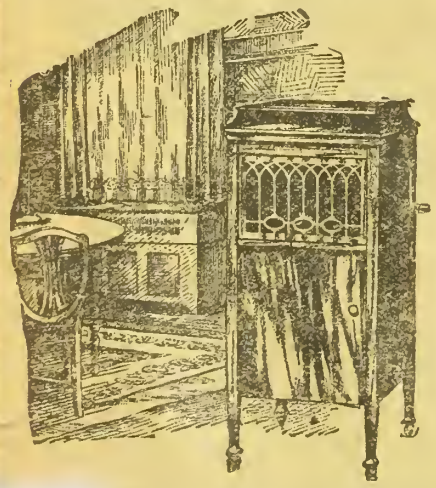

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A. J. KIRSTIN COMPANY, 223 E. Morrison St., Portland, Ore.

The Heart of Virginia Keep.

(Continued from Page 6.)

"And lost no time, I see. When did you intend to start?"

"Today," promptly.

Moffett sat back, filling his pipe again.

"The policy of the paper?" he threw out tentatively, eyeing Trude over the steel-rimmed spectacles.

"Will remain unchanged. I leave everything in your capable hands; and in the hands of my lawyers, too, of course."

After a thoughtful moment, however:

"I may offer a suggestion from time to time, but never except for the good of the paper."

"What salary do you wish to pay yourself?"

"Whatever is customary. No more. I start empty-handed. And that's no joke, by the way. Gave your office-boy my last cent. Foolish, eh? But I wanted to have an advance for my first assignment."

The editor hitched himself forward with sudden brusqueness and picked up Trude's credentials.

"I believe," said he, "I'll have a look at these."

"Good!"

A careful investigation proved beyond doubt that the odd, sunny-tempered, rapid-speaking young man was the person he claimed to be. There were even newspaper photographs to clinch the proof. At last satisfied, Moffett removed his spectacles, and, while polishing the lenses on a cotton handkerchief, regarded the youthful millionaire in open perplexity.

"I can't make you out at all," he finally confessed.

Trude smiled. "Don't try. Useless. Mind calling your assistant, or whoever it is does the hiring and firing? And remember," holding up a warning finger, "secrecy!"

Moffett nodded and pressed a button on his desk.

"Ask Mr. Benson to step here,' he told the boy.

It appeared that Benson, the city editor, had not yet arrived. Pending his arrival, Trude and Moffett improved the time in becoming acquainted.

At the ages of five and eight, respectively, Arnold Trude and his sister, Dorothea, had been left motherless. A few years afterward their father died intestate, the hulk of his fortune falling to his son. Dorothea married well, and Arnold went to Harvard, where his gift for spending money and his ebullient zest in living assured at least a bubble popularity.

But the love of adventure was in his blood, and no spot could claim him long. Before finishing his second year he left college to join a polar expedition, and later, giving free rein to his adventuresome spirit, he explored Africa, or a part of it, fought in a Latin-American revolution, bought a Texas cattle ranch, roughed it in the Canadian Northwest, toured the world in a palatial yacht, wrote and published—at his own expense—a book, and then swooped upon New York to take a whirl at society and Broadway.

In New York the open-handed liberality which was ever his most salient trait surrounded him with sycophants who battened upon his money-lavishness like flies about a leak in a molasses-barrel. Though always eccentric, he was never disagreeably so; and his mercurial temperament led him to regard each new caprice as the long-awaited and only one, and all the others that had gone before as mere preliminaries.

Leaning forward in his seat, blue eyes shining, sun-browned hands flattened between his knees, he was telling Moffett that to play the newspaper game, penniless and unknown, should prove incomparable sport, when the city editor, an alert, hard-grained man of thirty, entered.

"Benson, I want you to add this young man—Mr. Trude—to your staff. Put him on at once. You will find him raw at first, but he's willing to learn. He has no references."

"Your recommendation's enough, chief."

"I hope so, Benson; though I'm somewhat doubtful. Mr. Trude's newspaper experience touches zero. But do the best you can with him." As the two started from the office he added: "You'll have to advance him a dollar or so. He's broke."

Thus it came about that some time later A. Dempster Trude boarded a Maryland street car and set forth on his first newspaper stunt. Several blocks away, speeding silently in her motor car, Virginia Keep travelled a parallel route. Both were journeying to the same destination.

As the street car rattled its way toward the west, Trude became conscious of a slow disappointment. He had expected something livelier—a murder, perhaps, or at least a fire. But to go prying into the private affairs of a respectable old banker, asking impertinent questions of the man's family, begging for "a picture of the girl"—well, he didn't like it. It smacked of the scandalmonger.

A little surprised to find himself already picking flaws, he opened a copy of the Publicist and hid his shame behind it. Lackadaisically he wandered to the "want ad" section; and presently he sat up and read with quickening interest something that had arrested his eye. Then with a penknife he cut out the item and put it carefully in his pocket.

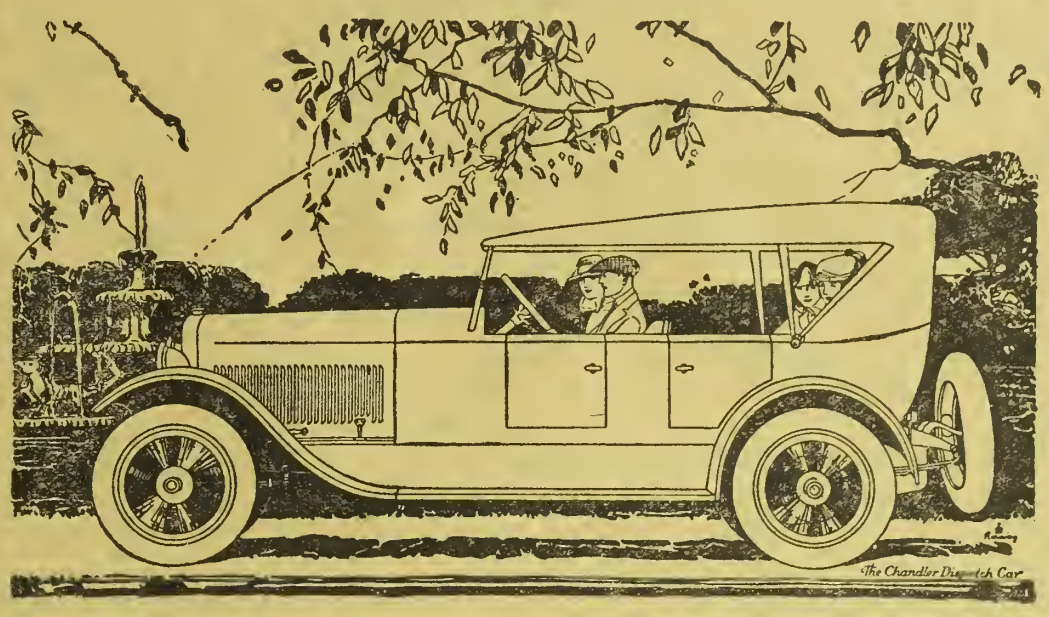
Virginia reached the goal first. Dazed, numb, she felt as a newly-trapped hare must feel when at the mercy of the hunter. To think, to plan, to find a way out of the terrible maze infolding her in its bewildering coils—that was the problem. All her reflections converged at one point. When the doorbell rang she was sitting at the telephone making an appointment with Lewis & Lewis, her father's solicitors.

The parlormaid, explaining that Mrs. Keep was away, brought Trude's professional card. Virginia looked up to see its owner in the hall near by. Until that moment the inevitability of newspaper notoriety had not crossed her mind. Now as she thought of it, proclaiming broadcast her father's arrest, insidiously declaring him guilty, shrieking with rumor and innuendo, she experienced no shock, no new grief. She could suffer no more.

(Turn to Page 16.)

CHANDLER SIX

Famous For Its Marvelous Motor



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Do You Want a Herd Bull?

Read the ads in the Livestock Department of this issue. If you do not find what you want there, write Breeders' Dept., Western Farm Life. Denver.

Crullers

Save this Dr. Price Prize Cruller Recipe

4 tablespoons shortening
1 cup sugar
2 eggs
3 cups flour
1 teaspoon cinnamon
½ teaspoon salt
3 teaspoons Dr. Price's Baking Powder
⅝ cup milk

Cream shortening; add sugar gradually and beaten eggs; sift together flour, cinnamon, salt and baking powder; add one-half and mix well; add milk and remainder of dry ingredients to make soft dough. Roll out on floured board to about ¼ inch thick and cut into strips about 4 inches long and ½ inch wide; roll in hands and twist each strip and bring ends together. Fry in deep hot fat. Drain and roll in powdered sugar.

The kind of crullers that a woman wants the neighbors to try, are these prize crullers made with

Dr. Price's
"Cream"
Baking Powder

Made with Pure Phosphate

The Economy Prices:
12 oz. for 25c
6 oz. for 15c
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Contains no Alum—
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Only $2 DOWN ONE YEAR TO PAY

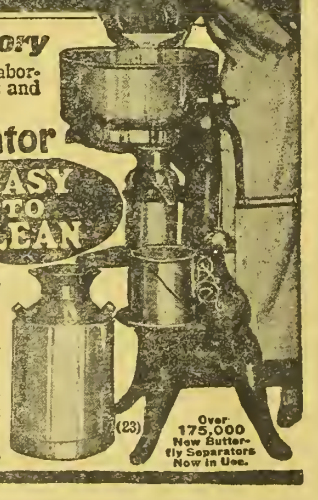
For any Size—Direct from Factory

You can now get one of these splendid money-making, labor-saving machines on a plan whereby it will earn its own cost and more before you pay. You won't feel the cost at all.

New BUTTERFLY Separator

$44

No. 2½ Junior—a light-running, easy-cleaning, close-skimming, durable, fully guaranteed separator. Skims 120 quarts per hour. We also make four other sizes up to our big 800 lb. capacity machine shown here—all sold at similar low prices and on our liberal terms of only $2 down and a year to pay.



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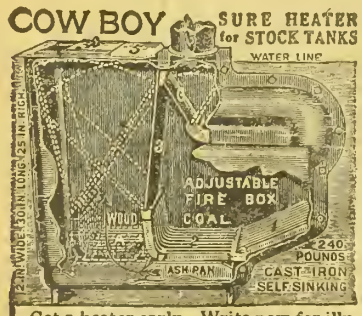
ALBAUGH-DOVER COMPANY, 2129 Marshall Blvd., Chicago, Ill.

COW BOY SURE HEATER for STOCK TANKS



Get a heater early. Write now for illustrated circulars and dealer's name, to

DON'T WASTE FEED

SAVE IT this winter by heating the water for your stock with Coal, Wood or Cobs in a

COW BOY TANK HEATER

Quickest to heat; strongest draft; adjustable grates; ashes removed without disturbing fire; keeps fire 24 hrs., **Absolutely Safe;** pays for itself in 2 months with 4 cows; **Self-Sinking;** can be used in Wood, Steel or Concrete Tanks of any size. Most reliable, practical, efficient and durable Tank Heater manufactured. Thousands used everywhere.

"Purchased 3 of your Tank Heaters last Winter, worked very satisfactorily and are well worth their cost. Every stockman should use one." W. H. PEW, Prof. of Animal Husbandry, Iowa State College, Ames, Ia.

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Dairying and Hog Raising

H. A. LINDGREN

All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, Western Farm Life, Denver, Colorado.

The Necessity of Cream Grading.

There is nothing that means so much to the improvement of our markets than a better quality of the product sold. This is especially true in dairy products. Good butter is extremely palatable and when its flavor is right a great deal more is consumed than when it is of poor quality.

Good butter starts with good cream. This must be made by the producer. The butter maker, no matter how competent, cannot overcome the bad flavors that develop before he gets the cream. He has but one alternative and that is cream grading. In this he attempts to eliminate all of the rank flavors, using these in the making of a poorer quality of butter. The good flavored cream is placed in the lot from which the first grade butter is made. The better the grade the better the price. Consequently it is to the farmer's advantage to bring his cream in in the very best condition. A little forethought regarding cleanliness and cooling of the milk and cream will greatly assist in the improvement of the quality of the finished product.

In Los Angeles the bacterial count of the city milk supply is very low, due to the fact that most all of the producers use a sterilizer for their dairy utensils. This sterilizer is not an expensive affair. It is simply a large pan such as a roasting pan, fitted with a tight lid. In the center of this lid is a hole about one and a half inches in diameter. A pipe is inserted in the hole and extends up four and one-half inches. The roasting pan is half filled with water and placed on the stove. The lid is placed on it. As the steam rises through the pipe in the lid, the cans or pails are inverted over it. They are allowed to remain until thoroughly scalded. For the separator parts and other smaller utensils a wash boiler can be used. Simply make a hole in the bottom of the boiler and set it over the pipe in the lid. A complete description of this sterilizer can be obtained from Farmers' Bulletin No. 748 of the United States Department of Agriculture, Washington, D. C. It is safe to predict that the use of this sterilizer on the average dairy farm will assist greatly in improving the grade of cream brought in.—H. A. L.

Guessing Contest Results.

An interesting guessing contest was staged at the Boulder county fair in September and later at the Adams county fair, by the Boulder and St. Vrain Cow Testing Association. Four cows were selected for the contest and farmers were given a chance to place them in the order of production. The results show that type and conformation are not reliable indicators of performance and that it takes the test for milk and butterfat production to tell the whole story about the dairy cow.

H. B. McCluskey, fieldman for the State Dairy Commission, furnishes the information on results at the Boulder county fair, showing that 942 persons placed the cows and only eighteen of this number placed all of them correctly. In the order of production the cows were C, A, D and B. The report shows that A was placed first 189 times, B 394 times, C 246 times and D 105 times. One-half of the eighteen who placed all the cows correctly were women.

Winners of the guessing contest were: Mrs. J. A. Hall, Longmont; Harvey Armstrong, Longmont; Esther Jones, Longmont; Francis Eatwell, Longmont; C. J. Carlson, Broomfield; Wm. Hough, Brighton; J. S. Click, Longmont; Charles Schweiso, Longmont; Irene Wright, Longmont; H. F. Keeler, Longmont; Elmer Williamson, Longmont; Mrs. C. J. Laverty, Longmont; C. J. Dreamer, Lyons; Miss Melva Moody, Longmont; Dan Burch, Niwot; May Summers, Longmont; E. Hammond, Boulder; Mrs. Wayne Beattie, Boulder.

The yearly record of the cows:

	C.	A.
Average test	4.3%	3.5%
Milk, pounds	7,351	7,929
Butterfat, pounds	317.4	278.5
Value of Production	$229.46	$189.35
Cost of feed	125.55	124.25
Profit over feed cost	103.91	*65.10
	D.	B.
Average test	3.7%	.....
Milk, pounds	5,384	2,626
Butterfat, pounds	198.7	77.1
Value of Production	$ 160.70	$ 53.10
Cost of feed	93.60	64.05
Profit over feed cost	*67.10	.....
Loss over feed cost	.....	10.95

*Due to difference in market price of milk.

At the Adams county fair in Brighton 20 out of 810 who guessed placed the cows correctly for butterfat production. Four cows which had yearly records last year in the association were used in this contest, two Guernseys and two Holsteins, being lettered A, B, C and D. On butterfat production B was first with 470 pounds; C second with 412 pounds; A third with 325 pounds, and D fourth with 312 pounds.

The Guernsey, A, was placed first by 359. She was best in conformation and dairy type, but stood third on production. Only 130 placed the B cow first.

More McClenahan Winnings.

Complete details on the winnings of A. M. McClenahan, owner of the famous Majesty herd of Jerseys at Greeley, at the Dairy Cattle Congress in Waterloo, Iowa, were not received in time for the previous issue. Mention has been made of the fact that McClenahan secured senior championship on cow with Westfield Girl in a class that included some of the finest herds in America, such as the Longview herd and that of Secretary of Agriculture Meredith. The McClenahan winnings:

In bull classes, 2-year-olds, third on Majesty's Featherlad.

Yearling bulls, third and fourth on Financial Dainty Prince and Majesty's Defiant Count.

Junior bull calves, fourth and fifth on Bosnian's Shy Duke and Canonness' Shy Raleigh.

In aged cows, as stated, McClenahan won senior championship.

Three-year-old cows, McClenahan third and fifth on Western King's Flora Dora and Ruby's Financial Girl.

On 2-year-olds McClenahan was first with Jubilee Oxie.

Third and fourth in junior yearling on Majesty's Finance Oxford and Princely's Sweet Star.

In junior yearling, third on Princely's Sweet Rose.

In senior heifer calf, fourth on Majesty's Cora Fern.

Fifth in junior heifer calf on Majesty's Featherlad's Tiz.

Third on graded herd; third on young herd; second on calf herd; third in get-of-sire on Majesty's Featherlad.

High butterfat cow, Boulder County Fair Guessing Contest.

Milking Shorthorns Sell Well.

The sale of dual-purpose Shorthorns held at the Wyldemere Farm of J. B. Benedict, near Littleton, Monday, October 11, was the first public offering of cattle from the herds of Bonvue Farms, Denver; Wyldemere Farm, Littleton, and Pine Valley Dairy and Farms Company, Colorado Springs. The sale was attended by a representative number of Shorthorn breeders from Colorado and neighboring states and bidding was brisk. The top prices of the sale were paid by W. C. Tegtmeyer of the Great Western Coal Co., Denver, and H. Bert Cave of Littleton. Each purchased a female at $475. The low price of the sale was $130 and the average for 35 head, $270.

The consignments consisted of two males and thirty-four females, most of which were young heifers. Several cows with calves at foot were sold and the majority of the heifers were bred to either Kirklevington's King, Royal Glenside, or Royal Prince. None of the animals offered was of fancy breeding, but many carried a strong line of Bates blood, while others were of the Clay family.

The following buyers will take their offerings into four states to enlarge their breeding operations of Milking Shorthorns: John Hendricks, Boulder; W. S. Morrow, Horace, Kan.; A. J. Snow, Englewood; C. A. Hinman, Bonvue Farms, Denver; W. N. Rogers, Chadron, Neb.; Price & Eddelblute, Strasburg, Colo.; Mike Wyatt, Sedalia, Colo.; Jay & Allan, Boulder; Vivia Echternacht, Brush, Colo.; Robert Cook, Cheyenne, Wyo.; D. A. Jay, Boulder, and L. B. Cline, Boulder.

The consignors were well satisfied with the prices brought at this, their first public sale, and both buyers and sellers were pleased with the manner in which the sale was handled by the auctioneers, Leachman, Snook and Buchanan. This was Col. Leachman's first purebred sale in Colorado, as he recently moved here from California.

Hall Holstein Sale.

Tight money and the high cost of dairy farming had a rather depressing influence on the dispersion sale at the Western Holstein Farms, October 5 and 6. However, in spite of these conditions the entire offering of 143 head made an average of $410. Ninety-nine cows and 2-year-old heifers brought an average of $473. Top price on animals going out of possession of Hall Brothers was $4,100 for Durkee Ascalon, bought for the Spencer Penrose herd at Colorado Springs. This heifer is out of Western Ascalon, the record cow developed by the Hall Brothers, and sold at St. Paul last June for $5,500.

Dissolution of partnership had been planned by Carlos W. and Storrs Hall, but after the first day's sale it was realized that original plans would have to be changed unless the brothers were prepared to stand a heavy loss. They therefore decided to remain in the business together and during the second day's sale several of the high animals were bought back for them. Among these was Western Colantha Sir Top, who went through the ring at $8,000. The nominal buyer was V. O. Coakley of Burlington, Colo.

Buyers were present from all over the eastern slope of Colorado, with some from Kansas, Wyoming and Montana. The majority of the offerings, however, went to Colorado breeders. The sale resulted in cutting down the herd at Western Holstein Farms to a size that will be more easily handled and Holstein breeders generally will be glad to learn that the good work carrid on for so many years by Carlos and Storrs Hall will be continued at the old location. The auctioneer in charge was Col. G. M. Banks.

Indian Farmers Build Silos.

County Agent Fillerup sends an interesting account of an "Apache Farmers' Observation Tour" of four days in Navajo county, Arizona. He makes special mention of the excellent potato crops in the Snowflake district and reports a large number of silos under construction in Joppa, Pinedale, and other sections. Some of the larger silos are capable of holding 375 tons. At St. Josephs the pit silo is the favorite; at Pinedale and Whiteriver, the silos are made of two by fours laid flatwise, with tar between in octagon form, and at Lakeside the farmers are using the Linden type of silo. The party had an enjoyable and instructive trip and a return visit of Navajo farmers is now planned.

A dairyman is known by the sire he keeps.

One Year Proves Its Better Qualities

In a little more than a year, the Cleveland Six has established the truth of its better qualities by its daily service to nearly twenty thousand owners. Today it is recognized everywhere for what it really is—an exceptional car, offering character and quality not found in other cars of similar size and price. It has made good in a big way.

The Cleveland, built in a great modern factory and built by an organization skilled in the building of fine cars, is featured by the performance of its exclusive motor, most highly refined of the overhead-valve type, quiet, powerful, pliant and economical.

A motor that starts instantly in even the coldest weather. The chassis construction is sturdy throughout, with long underslung springs, positive brakes and unusual ease of control.

Four attractive styles of body are mounted on the Cleveland chassis.

Touring Car (Five Passengers)	$1435	Roadster (Three Passengers)	$1435
Sedan (Five Passengers)	$2445	Coupe (Four Passengers)	$2345

(Prices F. O. B. Cleveland.)

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DE LAVAL CREAM SEPARATORS

The best of all dairy investments. Save $15 to $20 per cow every year.

The De Laval Separator Co.
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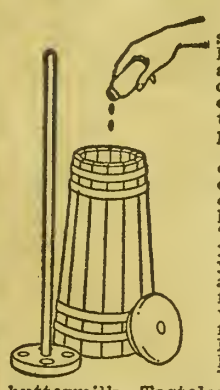
It Pays to Use Dandelion Butter Color



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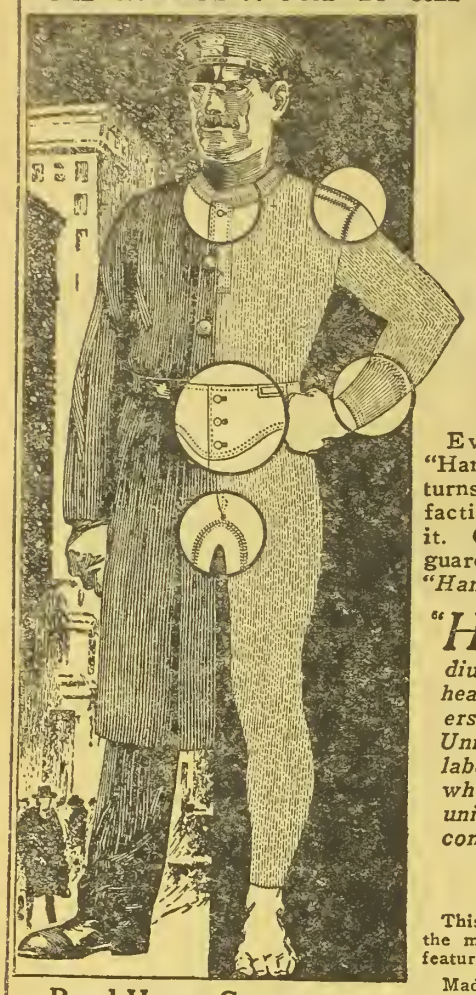

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BUY "Hanes" winter underwear for men on the strict business basis of the most unusual quality, comfort and service ever sold at the price!

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Made in sizes 20 to 34, covering ages 2 to 16 years. Two to four year old sizes have drop seat. Four desirable colors.

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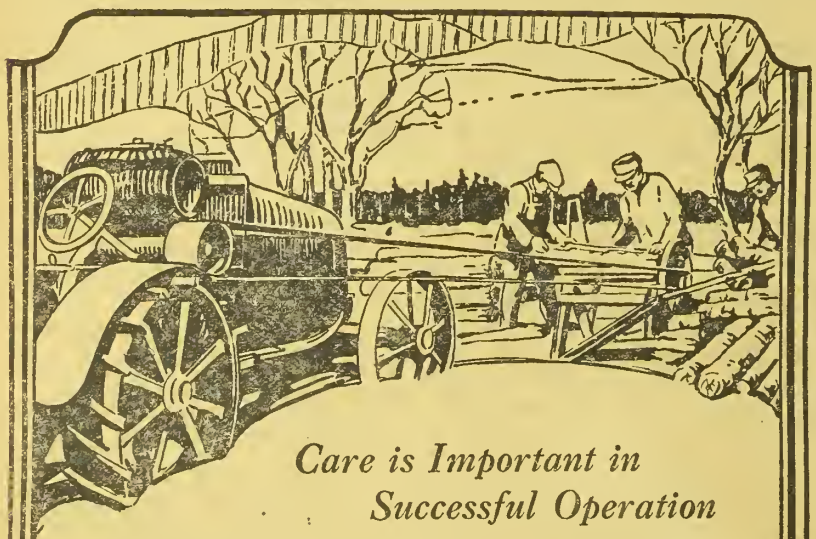

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The Heart of Virginia Keep.

(Continued from Page 13.)

He stepped toward her, his frank, blue eyes kindling with well-bred admiration.

"This unpardonable intrusion——" he began; but she ruthlessly interrupted.

"I don't care to discuss my father's affairs with you, Mr."—glancing at his card—"Mr. Trude."

"Perfectly right," he readily agreed, observing how her satiny black hair, waved luxuriantly back from white temples and forehead, set off the slight pallor of her skin. "But the chief commands, and I must obey."

She said disinterestedly: "I understand your position, but I have nothing for your paper."

Very obviously she was waiting for him to go.

He moved uneasily. "Well, if that's your ultimatum, I suppose I'd better withdraw."

"So it would seem."

"I'm sorry."

"So am I."

She turned away. He drifted doorwards.

"Miss Keep!"

She looked around, saw him returning, noticed him take something from his pocket.

"I'd like to ask you about this if you don't mind."

He gave her the cutting. She saw it was her advertisement.

"It's none of my business, of course, but I'd give something to know why you put that thing in the Publicist."

Studying the bit of printed paper, Virginia asked quietly: "Why do you suppose?"

"I thought—if you'll pardon my speaking bluntly—that it might have some bearing on your father's absence."

She folded the scrap of paper and handed it back. A rapid reconstruction of things was occurring in her brain. Having adjusted herself to the new condition, she met his eyes with:

"Will you tell me just what you came here for?"

"Sure! To learn the particulars—really of no gravity, I hope—concerning your father's departure a few days since."

"And you have no ulterior motive?"

Her black-fringed eyes narrowed upon his.

"I'm afraid I don't understand." He was puzzled.

Virginia smiled with apparent relief.

"Never mind. I'm awfully sorry I have nothing for your paper, Mr. Trude."

He noted that her golden voice was enriched with a warmth that was lacking before. "I hope your editor will be lenient.'

"You haven't explained the advertisement," he reminded her.

"It means only what it says, Mr. Trude. Good bye."

With girlish impulsiveness she held out her hand—slim and lovely and white—and for a second it lay in his bronzed palm. As he looked into her fine, dark eyes he felt the throb of his heart increase, then settle back gradually to its normal beat. He could think of nothing to say except "Good bye." He said it; then he left.

Before he had taken a dozen steps a half-dozen brilliant phrases leaped to his tongue; but it was too late. It always was, he reflected. He always thought of clever things when the time was gone for saying them.

Opening the front door, he encountered three men in the vestibule, one of whom he remembered seeing in the reporters' room of the Publicist.

"Hello!" holding the door ajar. "What's up?"

"Wake up, old boy!" advised his fellow-worker. "You're the cub Benson put on this morning, aren't you?"

Trude admitted he was that cub.

"Then stick around awhile and try to forget your importance. Benson said I'd probably find you here. There's a hot one off the A. P. wire—Alfred Keep arrested in Toronto for double murder. Punch that bell hard!"

This last in sudden anger to a roly-poly youth near the door-bell; for quite unexpectedly Trude had shut the door from within and the click of the latch told that it had locked.

Turning, he beheld Virginia ascending the staircase; and as he hastened after her, calling her name, she paused, surprised and annoyed, tentatively awaiting him. He sprang up the intervening steps, and when he stood near her:

"Reporters outside. They know——"

"Well?" as he halted lamely.

"They know—everything."

She contracted her level black brows.

"Then that means you know—everything."

He nodded silently; and simultaneously both perceived Bartley in the hall below, hurrying to answer the frantic summons at the door.

"Stop him!" he urged in an earnest undertone.

Not knowing why, though vaguely impelled by his evident sincerity, she leaned over the baluster and called to the hastening servant. Then she levelled a questioning gaze upon the young man standing just below her.

"You seem, Mr.—is it Prude?"

"Trude—A. Dempster."

"Mr. Trude, you seem to have become rather a champion for my father."

"I'd like to protect you—both of you—as much as I can," he said.

"Why?"

"It's the right thing to do."

She smiled.

"Are all men of your calling so generous?"

He matched her smile with a soft laugh that displayed his even teeth in a splash of whiteness against his tan.

"Not all, I fear."

"I was wondering," she continued, apparently without weighing his answer, "if you weren't doing this to 'scoop'—isn't that the proper word?—to scoop your colleagues."

"I assure you I have no such thought. And, anyhow," he added, reading the sketicism in her level gaze, "I couldn't get a scoop in this particular case, because every paper in town knows of it by now."

"Then what do they want?" motioning toward the door.

"Photographs—interviews."

"And you?" she interposed, resting a hand against the baluster. "Don't you want the same for your paper?"

"Not for a second!"

"But isn't that disloyal?"

He noticed how heavily she was leaning against the baluster; saw a strange expression creeping into her eyes.

"I dont care," he said roughly.

"Your paper—the Publicist—won't it print as much as the others about what has happened?"

"I—don't know, Miss Keep. I hope not!" He could not but discern in her attitude the half-frightened defiance, the piteous helplessness of a young girl fighting a man's big battle all alone; and quite suddenly he straightened up, resolved to obey the swift-gushing impulse surging upon him. "I'll do the best I can," he vowed. "I'm only a reporter, and a cub at that; but— I'll do the best I can, Miss Keep." He offered his hand.

"Thank you, Mr. Trude. I'm sure it's very kind of you."

She spoke listlessly, as if already she had forgotten his existence and was occupied with something of more moment, and moved as if to go. Then, seeing his outstretched hand, her own fluttered into it and for an instant was held captive like an imprisoned butterfly. But the innocent spontaneity which prompted her hand-clasp before was lacking now, and she seemed wishful to be rid of him.

"There's nothing more to say, I suppose," as he released her hand regretfully.

"Except good bye," she smiled over her shoulder, for she was already moving off.

Again unable to think of anything more brilliant, he said "Good bye!" turned, and walked slowly down the stairs.

The newspaper men were banging at the door and rattling the knob, so he located Bartley, atremble with alarm, and, slipping the last of his silver from his pocket, dropped it in the servant's palm with a request to be shown out the rear way.

He was piloted down the hall, thence through the dining room, butler's pantry, and kitchen, and presently stepped into a back alley. It had come on to rain—a chilling, stubborn downpour. He turned up his coat collar and started off briskly, quickening his steps to a run.

Not until he had covered three slippery blocks did he find he had taken the wrong direction. Some roaming aimlessly in the unfamiliar streets, some inquiring of chance pedestrians, and he finally located an eastbound street car. He made two blocks this time. A frantic searching through many pockets, a belated remembrance of his last coin—and the car was stopped and he was asked pointedly to leave.

In vain he looked for a cab. Tradesmen's carts and private motor cars were the only vehicles in sight. Thanks to his desire for impoverishment, he had nothing to pawn—and even if he'd had something there was no place to pawn it.

Yes; clearly he was in for a trip afoot. So thus he started, walking with a swing against the bitter rain slanting coldly from the east, and nursing the philosophical thought that muscular exercise and open air are always beneficial.

But as the rain waxed stronger his philosophy grew weaker. Before he reached his journey's end it was dead.

When he strode into the Publicist building, drenched to the skin, hungry and cross, he was disgusted with himself, with St. Louis and with all newspaperdom.

The lift-boy had a watch. It was 2 o'clock.

And upstairs in the reporters' room there brewed a verbal storm far more tempestuous than that of the elements.

CHAPTER VII.

Some Persons in Authority.

When the millionaire reporter entered the editorial room Benson looked up and called sharply: "Trude!"

And as Trude frowningly approached: "Where've you been all day? Where's that girl's picture I told you to get?"

"One question at a time, Mr. Benson," raising a protesting hand.

"Where've you been?"

"Since noon or thereabout I've been viewing the wet streets of your beautiful little city."

"Before that," probed the editor, dropping one knee over the other and leaning back with ominous calm fingers interlaced behind his head.

"I visited Mr. Keep's home."

"I told you to get a picture of Virginia Keep."

"I didn't get it."

"You don't say! Well, what did you get?"

"Nothing."

"Nothing?"

"I said nothing.'

Benson's revolving chair came down with a thwack; his hands, too.

"What are you driving at?" he demanded hotly. "What'd the girl say? What——"

"Nothing for publication, and that settles it."

"Settles it?" snapped the editor, slapping his desk with the flat of his hand. "Not by a durned sight!"

Then he proceeded to show how an angry man talks. In plain, blunt language, garnished with invective, he expressed his views on the way Trude had acted, particularly on the way he had treated his colleague; and, having talked without a break for three dynamic minutes, he ended thus:

"As a newspaper man you're a failure. I advise you to quit."

The wrathful flare-up, oddly enough, cooled the young man's ire instead of inflaming it, and, able now to regard matters unheated, he knew his role should be that of the abused suppliant.

"Surely," he protested with apprehensive countenance, "you're not going to dismiss me—the very first day?"

"You bet I am," growled Benson, reaching for a sheaf of copy.

"Give me another chance, boss, won't you?"

Benson, pencilling the copy viciously, said without looking up:

"Maybe I will if the chief says so."

"Guess I'll see the chief, then. Care to come?"

"Oh, go away and sit down!" was the annoyed answer.

Trude held his ground.

"Coming?" he asked pleasantly.

Benson looked up to call a reporter rattling away on a typewriter. Scowling at Trude:

"I'll take you in presently. Now clear out."

Trude strolled off, dropped into a chair before a typewriter desk, lighted a cigarette, and, resting his ankles beside the machine, immersed himself in thought, until Benson signified he was ready.

Moffett ducked his head as they entered his office and looked at them over the steel-rimmed spectacles, plainly suspecting trouble. Very fully and with such condemning embellishment as his brain invented, Benson stated the case, ending with:

"So he not only failed himself, you see, but through some inexplicable pig-headed notion, he preventcd my other man from succeeding. There is no use retaining him longer, Mr. Moffett. By this fiasco he has proved conclusively his utter unfitness for newspaper work."

Nodding non-committally, Moffett levelled his spectacles upon Trude.

"Well, young man?"

"I should like another chance, Mr. Moffett."

Moffett, shaggy head lowered, sat for a long half-minute in solemn silence, like a judge weighing evidence before rendering a decision. Then:

"Try him again, Benson."

And he turned back to his desk, implying that the incident was closed.

Benson's angry start of surprise was too patent to escape Trude's eye. For a moment the man seemed on the verge of explosion. Thinking better of it, he made a brief acquiescence, swung on his heel, and left the room. When the door had clicked behind him Trude sat down and rested the knuckles of one strong, brown hand on Moffett's desk.

"Mr. Moffett," he said in the calm voice of authority, "I want to give my first orders."

Moffett looked up quickly.

"You want me to discharge Benson?"

"He will have to go."

"I don't like this sort of thing, my boy. Benson is a good man. A hard worker. You rubbed him the wrong way."

"He'll have to leave. Sorry. Not room here for both of us. We'd be squabbling always, and I can't stand squabbling."

"I don't like it," maintained the sturdy Scotchman.

"I'm afraid you'll have to like it. I'm the boss, remember. And my next order is: Not a word must be printed in our—my paper about Alfred Keep or his family."

Trude never forgot the silence that followed. At last:

"Are you actually serious?" Moffett wondered incredulously.

"Quite."

This is an extraordinary request."

"It's not a request."

"Why, you can't know what you're talking about!"

"I think I do."

"Possibly you have some cogent reason?"

Trude felt uncomfortable.

"Possibly," he said.

"May I ask what it is?"

"I—think I'd rather not say—just yet."

Moffett's skin reddened slightly beneath his beard.

"Is this why you left New York—to aid the fight of Alfred Keep?"

"Never heard of the man until today."

"Then why——" began Moffett; but Trude, rising abruptly:

"There's no need of discussion."

Moffett, secretly nettled by the rebuke, though outwardly calm, asked him to resume his chair.

Trude complied, and the older man, speaking as a father might to a wayward child, pointed out how every newspaper in St. Louis would make a great display of the story he, Trude, would suppress; how ridiculous it would be for the Publicist to ignore it; how it would be ignominiously scooped; how half its readers would censure and the other half sneer; how ruinous it would be; how preposterous—to all of which Trude, holding his seat tolerantly, listened unmoved.

"Your logic," he yawned, when Moffett was through, "leaves me quite cold."

Moffett cried desperately:

"Will you tell me why you are doing this?"

"No."

"Then your reason is a poor one."

Trude stood up.

"I've told you what to do." He started for the door.

For, perhaps, the first time in his life the shaggy-bearded Scotchman lost his native imperturbability. Red, indignant clear through, he jerked at his collar—which had grown too tight—and started to relieve his flaming mind. Before Trude had reached the door, however, he was master of himself.

"You own this paper, Mr. Trude, and you can do with it as you like; but allow me to warn you——"

"Please don't!"

"——that if you persist in such idiosyncrasies you will bankrupt it. Permit me to remind you, too, of your promise this morning."

"What promise?" inquired Trude with his hand on the door knob.

"Your promise concerning the policy of the paper."

"If I remember correctly, I said I should make such suggestions as I saw fit."

"You also promised to make none that ran counter to the paper's good."

"Right," recalled the young man. "So I did."

He closed the door he had partly opened.

Mistaking his sudden thoughtfulness for indecision, Moffett summoned a fresh battery of arguments to attack the supposed weakening; but before he could fire:

"No matter. Kill the Keep story. Plenty of news without it."

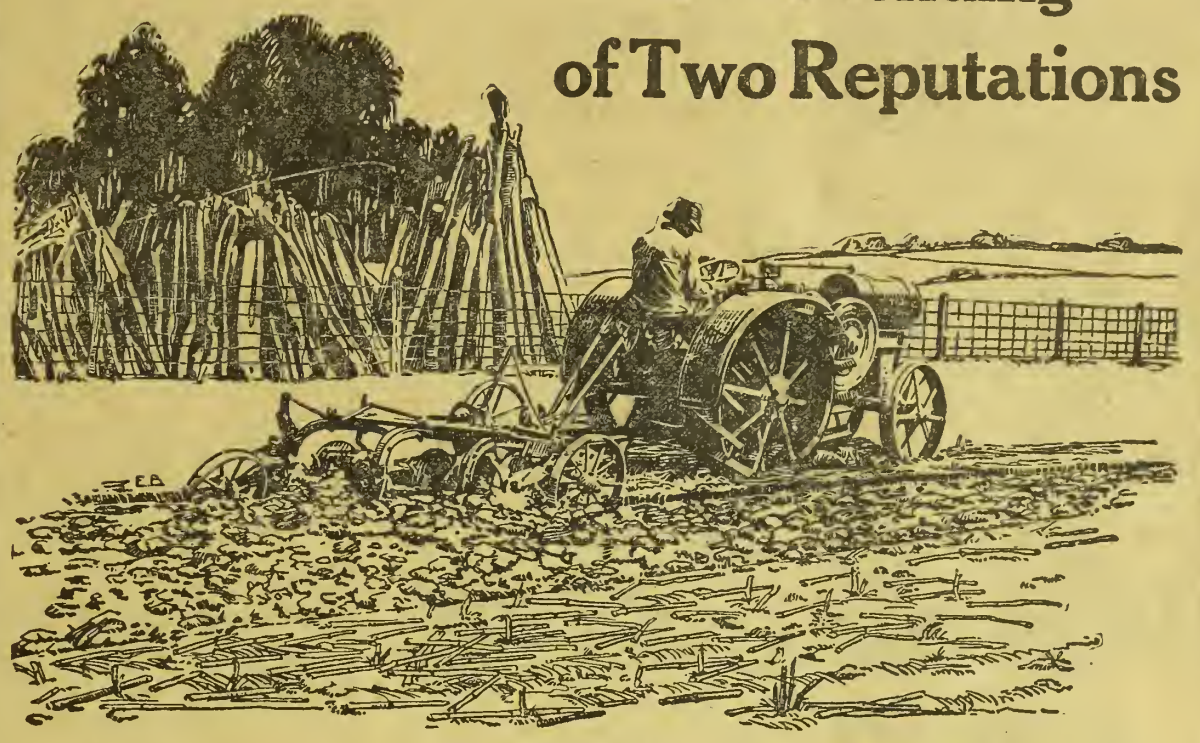
"That's not the point," protested the editor.

A minute after the door had closed it opened again to admit Trude's head.

"Too bad about Benson. Can't you fix him up on another paper? Let me know if you can't. Be happy to do whatever's possible."

(To be continued.)

The Blending of Two Reputations



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The Voice of the Farm.

When the big, strong Voice of the City calls,
Till it roars in your ears—and the Lights' brilliant glare
Sorter dazzles your eyes—and the farmin' work palls—
Well, you hardly can wait 'till you've landed there—
When you're leavin' home.

But the charm soon goes—and your thoughts turn back
To the big-hearted folks and the old, homelike place,
'N you realize times on the farm ain't so slack,
'N they're not cuttin' down just to keep up the pace—
When you hear from home.

So you think you'll go back—and you pack your grip,
'Nn you try to rub out the bright shine on your coat,
But you find that you haven't the price of the trip,
'N a big, throbbin' lump rushes up in your throat—
When you can't get home.

Then the big, strong Voice of the City seems
A great, hollow echo, delusion and snare,
'N you're sick of it all—and you lie down to dreams
Of the joys of the folks and the happiness there—
When you'll get back home.
—H. M. Railsback in The Furrow.

Co-Operative Community Butchering.

We hear a great deal now about co-operation. There are co-operative factories, co-operative stores, co-operation in enterprises of all kinds, but nowhere and in nothing has it worked for the better more than in the rural neighborhoods. Farmers have always, as a rule, helped each other out when from sickness or other causes there has been a "tight place" to tide over, but it was done in a spirit of pure neighborly kindness, not at all as a business venture. But in recent years co-operation has come to mean the clubbing together of a community or neighborhood with a view of bettering conditions of all concerned in both a financial and social way. Co-operative marketing has been a financial aid in farming communities that have adopted it, as have co-operative creameries and community cheese-making. To a certain extent there has always been a co-operation or exchange of work during harvest or the threshing season.

I am advocating here co-operative or community butchering. It has been tried in a few instances with marked success. The plan is this: The farmers in the neighborhood club together and hire one of their number, who is an expert and has or will add the facilities for doing it, to butcher all the meat for the neighborhood at butchering time, which usually extends from the middle of November to the latter part of December, sometimes into January. Each farmer arranges for a date most convenient for himself and the butcher. On that date the animals to be slaughtered are taken to the home of the butcher where everything is in readiness for rapid work. The farmer may arrange to take the meat home, dress it and pack it himself. Or the butcher will cut it up and prepare it for packing, render the lard and make the sausage, leaving nothing to do but smoke the hams and bacon and the beef for drying. This is really the better way as it relieves the farmer's wife of much hard work, including the cleaning up which will appeal to farm women generally, who usually have enough to do, be the family big or little.

November, too, is a busy month for mothers who have little children to sew for and holidays to get ready for, and I happen to know that "hog killing time" on the farm is a season looked forward to with dread by the average country housekeeper. How comforting then to know that the meat will come home all ready to be packed in jars or barrels, all greasy work and the disagreeable odor of lard rendering eliminated. This fact alone is enough to cause a smile of satisfaction to overspread the features of any neat, dainty housewife, for few women enjoy the annual mussiness of lard rendering and sausage making. And has not the farm woman as much right to avoid the disagreeable tasks if she can arrange to do so without incurring unnecessary expense as has her sister in town? Most farmers, especially farm owners, can afford to give some consideration to the comfort and pleasure of their helpmate, and I am glad to state that in most instances they do.

Unless the butcher is hired by the neighborhood for the season he either takes his pay in cash at so much for each animal, or for each farmer's lot to be killed. Counting time and labor saved the expense is not great. Besides, one has the satisfaction of knowing the cutting is done right and not haggled.

Co-operative or community butchering has been successfully tried in some sections of Colorado and in other western states and it is to be hoped that it will become general throughout most rural districts.

It has been suggested that the man who does the butchering be paid for his time instead of for each animal, or for the killing season. However, that is a matter to be agreed upon by the ones chiefly concerned in the neighborhood. —Carrie E. Frederick, Montrose, Colo.

Own Your Own Room.

"Own your own room" is the newest project in the boys' and girls' clubs. Connecticut and Iowa have many clubs of this new type and other states are fast taking up the idea.

The members in an "Own Your Own Room" club plan to buy or make over their own room themselves. The club leaders say that a girl needs a nucleus around which to build a larger life or she will not be content with her surroundings. The "own-your-own-room" idea seems to offer this nucleus. Incidentally after a girl has finished with her own room she is apt to have a larger interest in the whole house.

This new club project is not one to encourage the making of dressing tables from soap boxes or wing chairs from barrels. The club leaders assume that the girl on the farm today either has furniture which a little work will turn into a "joy forever" or is able to buy new pieces. Especially is this true of the club girls who have made and banked money through their other club projects. A knowledge of sewing, sanitation, and household decoration will be necessary, or the result will not be entirely satisfactory to the owner or her club leader.

Directions are given the girls in the "Own Your Own Rooms" clubs on the refinishing of furniture, redecorating of walls, and the making of sanitary, artistic, and simple draperies, as well as instruction on what constitutes good lines in furniture, what kind of a rug to buy or make, and what is satisfactory and unsatisfactory in wall coverings.

Our Fashion Service.

All patterns 12 cents each. Address Western Farm Life, Pattern Department, 1518 Court Place, Denver, Colo.

Read This Before Ordering: Patterns ordered through this magazine are mailed promptly from the factory at Brooklyn, N. Y., and arrive in 10 to 12 days from time order reaches Western Farm Life. Be sure to specify size and number of patterns. Write your name and postoffice address plainly to avoid delay. These patterns are handled at cost, as a service to our women readers. The price of 12 cents includes postage.

3169—A Unique Model. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Width of skirt at lower edge 1¾ yard. A medium size will require 6¾ yards of 40-inch material. Silk poplin with pipings in a contrasting or matched shade or color, and lace or embroidery would be attractive for this. It is likewise appropriate for serge, shantung, linen, foulard, crepe, taffeta and satin.

3353—Waist. 3345—Skirt. Costume for business wear, sports or general utility. The waist is cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. The skirt is cut in sizes 24, 26, 28, 30, 32, 34 and 36 inches waist measure. It will require 2½ yards of 38-inch material for the skirt, and 2⅝ yards of 36-inch material for the waist for a medium size. The width of the skirt at its lower edge is 1⅝ yards. The waist is a good model for linen, madras, gingham, batiste, crepe, silk or washable satin. The skirt could be of serge, gabardine, mixtures, broadcloth, taffeta or velveteen. The waist pattern provides a patch pocket, and is arranged so that collar may be rolled low or closed high. This calls for TWO separate patterns.

3365—A New and Comfortable Suit for the small boy. Cut in sizes 3, 4, 5 and 6 years. A 4-year size will require 1½ yards of 27-inch material for the blouse, and 1½ yard for the trousers. If preferred, blouse may of material different from that of the trousers. Linen, drill, cambric, madras, pongee, khaki, and flannel are good for the blouse, with the

same materials for the trousers, or serge, mixtures, cheviot, corduroy and galatea.

3367—Simple Frock for Little Girl. Cut in sizes 4, 6, 8 and 10 years. A 6-year size will require 2¾ yards of 27-inch material. Wash materials, silk, crepe, serge, plaid and check suiting, velveteen and poplin are nice for dresses of this kind.

3344—Neat and Becoming Work Dress. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38-inch size requires 6 yards of 36-inch material. Checked gingham in blue and white with trimming of white linen and fancy braid is here shown. Linen, percale, lawn, poplin, seersucker and sateen are good

for this design. The skirt with plaits extended measures about 1¾ yards.

3361—Popular "Cover-All" Apron. Cut in sizes 32, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A medium size will require 6¾ yards of 27-inch material. Striped seersucker with facings of white pique would be good for this, or one could have percale, gingham, drill or lawn.

3346—Seasonable Top Garment. Cut in sizes 4, 6, 8, 10 and 12 years. A 6-year size will require 3 yards of 44-inch material. Chinchilla, cheviot, mixtures, plush, velvet, corduroy and other pile fabrics may be used for this design. The facing may be omitted, or it may be of contrasting material.

3356—Dainty Dress for the Little Miss. Cut in sizes 4, 6, 8 and 10 years. A 6-year size will require 2⅝ yards of 36-inch material. As here shown, white wash silk was used with plaitings of organdy and motifs embroidered in silk floss. Gingham, calico, unbleached muslin, lawn, poplin, repp, batiste, taffeta and woolen materials, all are attractive for this style.

Farmers Clearing Less Than $500.

(Continued from Page 5).

Ohio, for the seven years 1912-18, was $610; the labor income, $276; the return on investment, 4.6 per cent. In addition to the farm income, the farmers had food, fuel and house rent, estimated to be worth, on the average, $359 per year. For 1912 the farm income of these farms averaged $456, and for 1918 the average was $719. These farms are in a hilly section, where the soil is not especially fertile.

The 100 farmers in Clinton county, Indiana, being on better land than the Ohio farmers, made a correspondingly better showing. Their farm incomes averaged $1,856 for the seven years, 1910 and 1918, and their labor incomes $558. Return on capital was 5.7, and food, fuel and house rent furnished by the farm, $425. The average farm income of these farms increased from [illegible] 1910 to $2,978 in 1918.

The farm income of the 60 Wisconsin farms averaged $1,293 for the five years, 1913-18, the labor income $408, and return on investment—determined by deducting from the farm income the value of the farmer's labor—4.7 per cent. The average farm income ranged from $1,079 in 1913 to $1,990 in 1918. On most of these farms the principal source of income is dairying.

Of the 185 farmers in the three areas, none made a labor income of $1,000 for every year of the study, but 18 in the Indiana area and 7 in the Wisconsin area made labor incomes averaging over $1,000 per year for the period. Four farmers (2 per cent of the entire number) made over $500 labor income every year. Averaging labor income and loss over the whole time, 15 per cent of the farmers failed to make any labor income at all. Ten per cent failed even to make 5 per cent interest on investment in any year of the study.

Department specialists point out that though farm incomes in most cases showed a marked increase during the years 1916-18, as compared with incomes for 1912-15, these increases are more apparent than real, in view of the decrease in the purchasing power of the dollar. The turnover for the recent years was larger than for the earlier years, but the returns were relatively little larger, if measured in terms of the things it would buy rather than in terms of dollars and cents.

Review of Forty-Second Annual Utah State Fair.

(Continued from Page 4).

outside of a world's fair, has the writer seen such elaborate and really beautiful group exhibits as these counties put up. They were made to show the resources of the county in a concrete, comprehensive manner that would fairly talk the valuable resources of that particular county. The judges carefully went over all and found that Boxelder county had the winning exhibit, with Utah county second and Salt Lake county third.

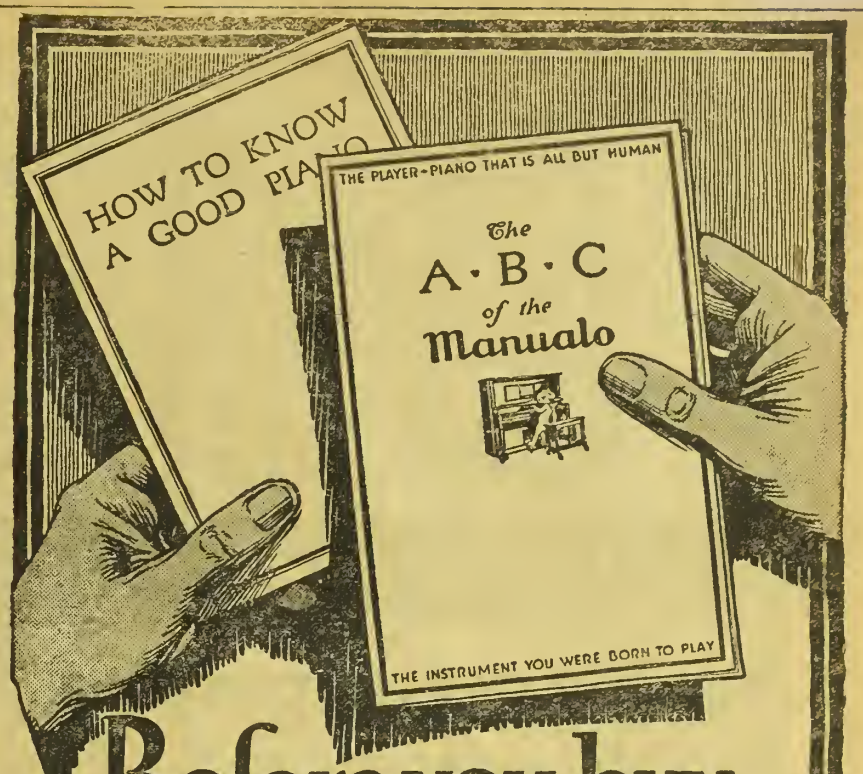
In the second class of counties Washington—the "Dixie" of Utah—won first place, and San Pete won first in counties of third class. The distance from Salt Lake, population and acreage under cultivation, determines the group class under which a county is placed.

The honey exhibit in agricultural hall was most surprising, both in quantity and quality. Utah claims to produce more honey than any other intermountain state. It is to be remembered that in the great seal of the state is a beehive; hence it is called the beehive state. Three million pounds is the 1920 honey crop for Utah.

The agricultural and horticultural individual exhibits surpassed the showings of any previous year and that is "going some." The Extension Department of Utah Agricultural College had a very unique and instructive exhibit in the college building. In the center of the room was a model of the main college building at Logan. Around the sides of the room were booths where the major work, now being done in cooperation with the resident county agent, was shown. A streamer ran from the booth to the belfry of the administration building, illustrating how the college, through its Extension Department, is reaching all parts of Utah. The manufacturers and merchants building had seventy booths, illustrating the variety of products manufactured within the commonwealth.

In a prominent place the writer found a most complete exhibit of implements and machines for farm and home use. It covered five acres of ground. In the pavilion was as good a showing of draft horses as one ever sees at a fair. It convinces one that the draft horse is not yet "out of commission." Wish a certain councilman in Denver could have seen this horse show and heard their owners discuss their "tomorrow." He would have decided the horse is far from being "out of commission."

Taken all in all, the 1920 Utah fair is a record-breaker in quality and quantity of exhibits, the careful manner in which crop resources, livestock, fruit, minerals, manufacturing and home improvement is shown up in an attractive and convincing manner. Then too, how the Utah people back up their Fair Association management by their attendance! 1920 has set a pace that will force succeeding seasons to put forth extra effort to equal, much less surpass.



Before you buy a piano or player-piano get these books

— "How to Know a Good Piano" tells how pianos are made and points out the qualities you should look for to be sure of securing a dependable instrument.

"The A. B. C. of the Manualo" tells what makes the player-piano play and explains how this mechanism has been so developed and perfected by Baldwin that the Manualo enables you to play with the same expression through the pedals as upon the keys.

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The Player-piano that is all but human.

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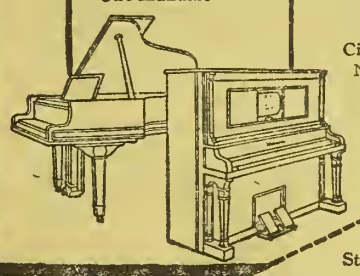

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Training For Service

What science and engineering have done to develop the mechanical efficiency of the telephone, specialized training has done in the development of workers.

Plant engineers, linemen, directory clerks, toll operators, equipment installers, electrolysis engineers, trouble hunters, line repairmen, test table operators, chief operators, contract agents, building engineers, line installers, exchange repairmen, plant inspectors, trouble operators, fundamental plan engineers, draftsmen, estimate clerks, exchange operators, cable testmen, equipment inspectors, wire chiefs, traffic engineers, galvanometer men, cable splicers, facilities engineers, surveyors, information operators, switchboard installers, accountants, testmen, supervisors, station repairmen, equipment engineers, directory operators, statisticians, appraisal engineers, routing operators and scores of other skilled employees are specially trained for the exacting work of providing telephone service.

Throughout all work of telephone construction and operation there is a ceaseless endeavor at mastery of service that makes for improvements beneficial to the public.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
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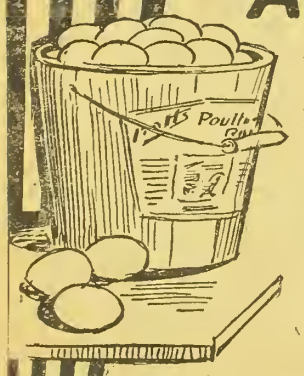
One Policy *One System* *Universal Service*
And all directed toward Better Service

You Can Have Eggs All Winter-If



you give your flock a little help. It isn't a matter of chance — you'll get eggs if you work for them. And if your birds lay heavily *this* winter you'll take in a lot of egg-money because prices will be high. The extra eggs you can get will pay for many things you want and need.

Give your layers a chance to do their best work. Feed a good ration and include

Pratts Poultry Regulator

the original poultry tonic and conditioner. It makes hens lay because it puts and keeps them in condition to lay—healthy and vigorous. Its natural tonics, appetizers, digestives and laxatives strengthen and regulate the internal organs—make hens healthy—then they lay. Nearly fifty years of successful use by the world's leading poultrymen proves it. And our money-back guarantee is your protection. Sold in packages, pails and sacks up to 100 lbs.

Pratts Roup Remedy

is another big aid to winter layers. Put it in the drinking water occasionally, especially during spells of bad weather. It heads off dangerous colds and deadly roup, and aids in overcoming these troubles if they appear.

"Your Money Back If YOU Are Not Satisfied"

One of the 60,000 Pratt dealers is near you. Talk this over with him.

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From Corral and Pasture

By H. W. HAILEY

Have you ever been in Douglas county, Colorado? If you have, then you know what an enterprising bunch of combination cattle men and farmers they have there. If you haven't, then you haven't seen all the wonderful country there is in Colorado. Douglas county has mountains, plains, plateaus, beautiful irrigated valleys, well improved farms and, better still, hundreds of purebred cattle, hogs and sheep, good running horses, an A number one fair, a live farm bureau organization, and a county agent its worth going a lotta' miles to get acquainted with. Some time when you're in the market for purebred Herefords, Shorthorns, beef or milking type, Holsteins, Durocs, Poland Chinas, or Hampshire sheep, just drop down into Castle Rock, ask for County Agent R. R. Miller, and you'll not only see some good stuff, but you'll come away enthusiastic about the future of Douglas county.

Wednesday evening we enjoyed the hospitality of the Mike Wyatt home near Sedalia, and had an opportunity to see a good array of young Shorthorns of milking type. Mr. Wyatt sold last summer at public auction most of his aged cows and is now engaged in building up a new herd of better breeding. At the Milking Shorthorn sale at Wyldemere Farm near Littleton, October 11, he purchased four females and a bull calf. Two of the heifers purchased were of strong Bates top breeding. Another year should find Mr. Wyatt with a well rounded young herd. His policy from now on is to carry fewer cattle on his place, but have better ones.

J. P. McInroy, one of the pioneer Milking Shorthorn breeders of Douglas county, has demonstrated that dual-purpose cows can make money for their owner. That, after all, is the supreme test of their worth, whether purebreds or grades. Mr. McInroy is a purebred breeder and no one appreciates the importance of pure breeding more than he, yet at the same time he has a good bunch of producing cows on his ranch that are high grades. "I am for the producers, and would be foolish to sell off my grade cows so long as they pay me a good profit and bring me another good calf every year," says Mr. McInroy. The papers don't make the individual and great care should be taken by purebred breeders in weeding out any slightly inferior animals and then send them to the butcher block rather than sell them for breeding stock, just because they are eligible to register. Mr. McInroy has a well improved ranch, a beautiful modern home, and a great herd of Milking Shorthorns that are producers. His herd has several times stood at the top of the Douglas county cow testing association on net profit for the month. He has a few young females for sale and is carrying some advertising in the breeder section of Western Farm Life.

Another firm that is doing much for the purebred development in Douglas county is that of I. J. Noe & Son, breeders of beef type Shorthorns. Like Mr. McInroy, they have gradually grown into the business and now have on their place many fine young animals which they have bred and raised themselves. With a foundation herd of good Scotch and Scotch-topped cows, bred to Villager's Baron, one of the best sons of the famous Villager, they now have a fine lot of heifers from this great bull and expect to use in their herd next year a young bull, Villager Cumberland, which they bred and raised. In June, 1919, they sold Villager's Baron to Newell D. Moore of Mount Pleasant, Iowa. They have used in the herd this year Sycamore Sultan 2nd, by Roan Lord, by Maxwalton Revolution, and Divide Monogram, by Second Thought. Both of these bulls are good individuals and carry excellent points of the blood lines which they represent. Their breeding herd now numbers about sixty head of females and they expect to have for sale during the coming ycar about thirty to forty head of young bulls and heifers from Villager's Baron, Sycamore Sultan 2nd and Divide Monogram. Beginning with this issue they are carrying an advertisement in Western Farm Life, and may fit up a few of their choice young animals for the Western Stock Show in 1921.

Another man who is helping to put Douglas county on the map as a purebred section is Chas. Allis of Greenland, a breeder of Hampshire sheep. Mr. Allis will be remembered as the man who paid $700 at the Denver Ram and Ewe sale this year for an imported Hampshire yearling ewe, the highest price ever paid in the United States for a Hampshire ewe. He also purchased two young rams at this sale to add to his excellent breeding flock of over 200 head of registered ewes. With three head at the State Fair, he took all the blues and championships in classes entered. He also showed at the Douglas county fair, where he repeated his State Fair winnings. With the assistance of County Agent Miller, an experienced sheep fitter, he expects to show a full string at the Western Stock Show in January, and from present indications he will again come home with a good string of blue and purple ribbons.

Walter Schubarth, one of Douglas county's progressive Holstein breeders, has made a success of his dairy herd and had last year the highest paid herd of dairy cows in the Douglas county cow testing association. His cows averaged $176 a head on milk sold. He showed several animals at the Douglas county fair against strong competition and came out with a good share of the premiums. In addition to his purebred cows, he also has a number of excellent grades that are more than paying their way as producers. He is saving all his females this year to increase his herd, but may have a few bull and heifer calves to offer for sale next summer and fall.

J. C. Higgins of Parker is another Milking Shorthorn breeder who is going to be heard from in another year. Just now he is building a foundation herd of good producers with twelve purebred and thirty high grade females and about fifty head of calves, mostly heifers. He built a silo and has it full to the brim and with plenty of alfalfa hay to feed his cows should show their year-round producing ability from now on.

W. J. Brady of Parker lives in the well known Cherry Creek valley, a great dairy section, but he has deserted dairy cattle for Duroc hogs and with a well-bred young boar and eleven registered sows, has a foundation of good quality that will be herd from in Duroc circles in another year. He now has on hand about eight young pigs. He will keep the gilts for his herd and market the barrows. A few choice young boars have been sold in his immediate locality.

A meeting of the Douglas County Farm Bureau was held Saturday afternoon, October 16, at the modern farm home of Henry Lowell, three miles south of Castle Rock. The Co-operative Dairymen's Association plan of organization was explained by Wallin G. Foster, the treasurer, and the work was endorsed by the Farm Bureau. Other routine business was transacted. Ora L. Leachman, the auctioneer who recently moved to Denver from California, told of the benefits of co-operative organization in California, among both dairymen and fruit growers. Other speakers were County Agent Miller and H. W. Hailey of Western Farm Life.

N. E. Mosher & Son of Hugo, Colo., breeders of Hampshire hogs, have been for several years developing a good herd of this breed, and are beginning their advertising in this issue of Western Farm Life. They showed eleven head at the State Fair and took nine premiums, surely a good record for the quality of their animals. Mr. Mosher also calls atteition to the fact that it was the Hampshire barrows which were placed as grand champions over all other breeds at the fair and took the $25 prize offered in this class. Anyone who is interested in Hampshire hogs should write Mr. Mosher at Hugo for further information.

Range View Stock Farm at Henderson, Colo., are announcing a complete dissolution sale to include their splendid herd of registered Durocs, their herd of high-grade Holsteins, 20 heavy draft horses, a lot of farm implements and machinery and their 115-acre ranch. Snook & Leachman, who are to manage the sale, have an announcement in the advertising columns of this issue. Range View Farm is under the management of C. V. Ratcliffe, whose winnings with Durocs at the Adams county fair were mentioned in the issue of October 15. This is an outstanding herd headed by Edgemoor Juno Chief 169505, sired by Cherry Chief of Edgemoor. The diversity of offerings at this sale should bring out a large number of buyers.

Dairy farmers will be interested in the announcement of a series of sales to occur next month, starting with the dispersion of 65 Registered Holsteins by W. A. Purvis, the well-known Johnstown breeder. In addition to the purebreds all of the grades will be sold and everything on the ranch, including horses and farm implements, will be put up at auction. The grade cows and the general sale will take place December 6, while the registered Holsteins are to be sold on the 7th. Catalogs are now ready and may be had on application to Snook & Leachman, 205 Livestock Exchange Bldg., Stockyards Station, Denver. The next in this series will be a dispersion sale of Registered Holsteins, December 9, on the farm of W. C. Sauer & Son, four miles northwest of Ft. Lupton. Mr. Sauer has been gathering a firstclass herd of Holsteins from the best blood lines and his offering of breeding stock will be choice. Following that, McNeil & Son, seven miles north of Platteville, will dispose of their Registered Holsteins. This herd has an established reputation, being among the high ones in the noted Johnstown Cow Testing Association. Announcement of these sales appears in the advertising columns of this issue.

Albert Dilsaver & Son, one mile north of Eastlake in Adams county, are offering their entire herd of Registered Durocs and grade Holsteins at public auction, December 14. They have splendid stock in both lines for the farmer buyer.

A Poultry Sermonette.

"Sufficient unto the day is the evil thereof."

This scriptural injunction is probably more observed than any other with which we are familiar; not consciously, perhaps, but none the less, consistently. It's a good rule to go by in the case of bills payable or divorce, but we are too much inclined to postpone the performance of important duties. The title of this article should be "Roup," but we thought a title more ambiguous might delude more readers into wading through it before they knew what they were doing.

Today is the 16th of September. Ten feet from where I sit the thermometer registers 85 in the shade; we have had no frost this season. If I were only six months old I might believe from the looks of things that this weather was to continue forever. But tomorrow or the day after will open up with a drizzle and the thermometer will drop to 40 degrees, the grass will be wet (I suppose it always is when it rains). The chicks will have to hustle for something to eat and come in at night bedraggled and cold and grouchy, and the little old roup germ will find a nicely prepared seedbed to work on. Or the coop that so nicely sheltered the little brood of a couple of dozen baby chicks is still on the job; it hasn't grown any bigger, but the chicks have, and they are very

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FIVE CARLOADS
of Regulation
Army Blankets

This mammoth purchase of **O. D. Regulation WOOL Blankets** from the U. S. Government coming with the recent fall in prices enables us to sell these Blankets at the lowest price ever offered.

Delivered to your door by insured parcel post at the following prices:

New O. D.'s.		Reissue O. D.'s.
Each for	$ 5.95	$ 4.95
Two	$ 11.70	$ 9.70
Four	$ 23.00	$19.00
Bale of 20....	$110.00	$90.00

Don't confuse these O. D. Regulation Army Blankets on account of their low price with the cheap commercial army blanket.

ABSOLUTE SATISFACTION GUARANTEED on every blanket sold, and your money will be promptly refunded on return of goods.

We refer you to the following Dallas Banks: American Exchange National, Security National Bank, National Bank of Commerce and Dallas County State Bank.

Combine your Blanket needs with your neighbors and mail your order at once, as these blankets can not last at this price. Make check or money order payable to and address

WM. G. CARROLL, Mgr.

THE ARMY STORE
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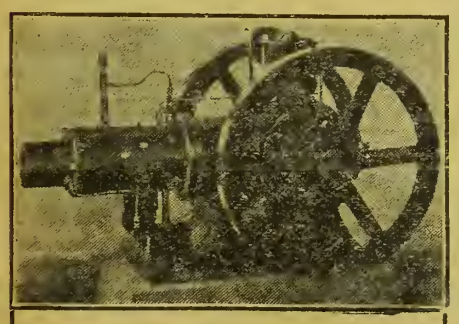

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An engine built in the west to solve western power problems.

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Buy a HASSELL and forget your engine troubles.

HASSELL IRON WORKS CO.,
Box 83. COLORADO SPRINGS, COLO.
Manufacturers (for 35 Years)
Engines and Pumps.

PLANS for Poultry Houses.
All Styles. 150 Illustrations. Send 10c. Inland Poultry Journal, Dept. 41, Indianapolis, Ind.

Ask Western Farm Life Service Bureau. Information free on all phases of farming.

much crowded. We certainly were too busy all summer to whitewash or in some other way disinfect these coops. Cleaning out, some way, hasn't seemed so necessary lately. The nights are cool and the chicks bunch up to get warm. They are warm when morning comes; the door is left open and naturally they get out early for breakfast. The fields are wet and while the sun finally gets in his work, the day is nearly as favorable to Mr. or Mrs. Roup Germ as the rainy one.

In a day or two one chick won't feel like chasing grasshoppers with the bunch. He'd rather watch his mother do up the housework. He won't even fight when a smaller one picks on him. His nose runs so fast that mother's apron don't do much good. His eyes water and but for the fact that he is so very young, we might suspect that he had been out rather late last night. Maybe his face swells up around the eyes; maybe his tongue and mouth are covered with a yellow, cheesy matter; he'll sneeze and choke and scatter germs all over the place. Now we've got a job on our hands forty times bigger and harder and more costly than to have provided larger quarters; clean quarters; a gymnasium feed hopper so that long distance feed hunting would not be necessary on bad days; disinfectants around the nests, roosts and in cracks everywhere that a mite, bedbug or germ might hide.

Before the cold nights and cold wet mornings the summer coops should give way to the winter home. There should be a new floor in this house. The old litter dirt should be removed and new earth should be added. A foot of clean, new straw over the entire floor would provide a fine feeding place and a playroom on stormy days. Of course, the roosts should be on a level and there should be a platform under the roosts to keep the droppings from falling on the floor. The only reason fowls travel a half mile to get something to eat is the same reason I have for working; they have to, and I have to. A hopper of ground grain, grain scattered in clean litter, a bucket of water and another of milk handy, and they will be happy and contented inside on stormy days.

Removing the cause is better than fighting the disease. Remember that prevention is easier than cure.—W. E. V.

Wild ducks can be successfully propagated in many marshy localities. The United States Department of Agriculture has issued a new circular telling the most practicable breeds and how to handle them.

If in need of advice, ask Western Farm Life Service Bureau.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24TH 1912, OF "WESTERN FARM LIFE," PUBLISHED SEMI-MONTHLY AT DENVER, COLO. —FOR OCTOBER 1, 1920.

State of Colorado, County of Denver. Before me, a notary public in and for the state and county aforesaid, personally appeared H. C. Hardison, who, having been duly sworn according to law, deposes and says that he is the business manager of the Western Farm Life, and that the following is to, the best of his knowledge and belief a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor and business manager, are:
Name of publisher—W. S. Edmiston, Denver, Colo.
Editor—None.
Managing Editor—Alvin T. Steinel, Denver, Colo.
Business Manager—H. C. Hardison, Denver, Colo.

2. That the owners are:
The Farm Life Publishing Co., Denver, Colo.
W. S. Edmiston, Denver, Colo.
Alvin T. Steinel, Denver, Colo.
H. C. Hardison, Denver, Colo.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortages or other securities are: None.

4. That the two paragraphs next above giving the names of the owners, stockholders and security holders, if any, contains not only the list of stockholders and security holders as they appear upon the books of the company, hut also in cases where the stockholders or security holder appears upon the books of the company, as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the hooks of the company as trustees, hold stock and securities in a eapacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association on corporation has any interest, direct or indirect, in the said stock, honds or other securities than as so stated by him.

H. C. HARDISON,
Business Manager.

Sworn to and subscribed before me this 1st day of October, 1920.

OLIVE T. LEWIS,
Notary Public.
(My commission expires Dec. 2, 1923.)

FARMERS' AND STOCKMEN'S EXCHANGE

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WYANDOTTES.

NEW BLOOD SILVER-LACED WYANDOTTE cockerels from Tarbox eggs, $5 each. Mrs. D. D. Little, Havens, Nebr.

WHITE WYANDOTTE COCKERELS—TRAPnested stock, $3 and $5. Mrs. Mary M. Wright, Rte. 2, Box 314, Boulder, Colo.

RHODE ISLAND REDS

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

ROSE COMB RED COCKERELS AND PULLETS from prize winning stock; dark red, big-boned, $3 for 30 days. Mrs. George L. Thornton, Eureka, Kans.

MINORCAS.

H. R. SUYDAM'S S. C. B. MINORCAS—AUTUMN sale of breeding stock. Firty beautiful April hatch cockerels at $5 each for next thirty days. For exhibition cockerels write for price. 4500 Bryant st., Denver, Colo.

LEGHORNS.

BUFF LEGHORNS—BEST LAYERS ON EARTH; have some classy cockerels. Champney(2057 South Broadway, Denver.

SEVERAL VARIETIES.

CHAMPNEY'S POULTRY YARDS—IF IT WEARS feathers we have it, or will get it for you. Write us your wants. 2057 S. Broadway, Denver, Colo.

COLUMBIA HATCHERY—WE CAN SUPPLY you with cockerels and breeding stock, turkeys, ducks and geese; 14 varieties. Prepare now for spring mating and get the best. P. O. Box 1102, Denver, Colo.

PET STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

BEAUTIFUL PEDIGREED COLLIE PUPS, MALES $25, females $20. Other collie and shepherd pups, males $15, females $7.50; natural heelers. Pictures 10c. R. Ellis, Beaver Crossing, Nebr.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HOGS

BIG TYPE POLANDS, YOUNG BOARS AND gilts for sale. Write for breeding and particulars. Gad Barney, Haswell, Colo.

BLUE HOGS—LARGE, GROWTHY AND PROlific; everybody likes them. Write for hooklet. Mention this paper. The Blue Hog Breeding Co., Wilmington, Mass.

REGISTERED POLAND CHINA GILTS, READY to hreed; boars ready for service; prize winners Brighton fair; $40 each. Geo. S. Kemp, Stockyard Station, Denver, Colo.

BIG TYPE POLAND CHINAS, CHOICE PIGS, both sexes, three to five months old, best of breeding, priced right; pedigrees furnished. Pinehurst Ranch, C. W. Miller, Prop., Rye, Colo.

BUY YOUR DUROCS AT WEANING TIME, AND make the hig profits yourself. I have prizewinning gilts and hoars a few weeks old sired hy champions that should be worth several hundred dollars each this year. Write for prices. J. N. Caldwell, Willow Grange Farm, Littleton, Colo.

CATTLE.

FOR SALE—FIVE REGISTERED SHORTHORN cows, 2 to 8 years old, and bred to Cumberland Type 2nd, $150 to $250. Glen Martin, Boulder, Colo. R. F. D. 1.

FOR SALE—TWO SPLENDID REGISTERED Holstein hulls and hull calves. Prices right. Pedigrees furnished on request. Norman R. D'Arcy, 3 miles north of Parker, Colo.

FOR SALE—JERSEY BULL CALF, DROPPED Octoher 17, 1920. Application made for registration. Sired hy that splendid bull Jacoba Irene's Chromo No. 131319. Dam, Eminent's Columbine Lass No. 402089, one of our best producers. Price and full pedigree upon application. Address The Highlands, R. R. No, 1, Box 122, Colorado Springs, Colo.

HORSES.

TEAM PERCHERON MARES, 4½ YEARS; Zang's stock, half sisters, sound and well broke. One has mare colt. Sanders six-disk plow, New John Deere manure spreader, new 4-H. P. Cushman engine, fanning mill. Harold Ketner, Broomfield, Colo.

GOATS.

FOR SALE—300 GOATS, 150 ANGORAS, 150 commons. Wm. Hoge, Hillside, Colo.

FOR SALE—HEAVY MILKING SAANEN GOATS, hred to pure huck. Geo. T. Cramton, 4912 Hooker st., Denver, Colo.

SHEEP.

100 REGISTERED SHROPSHIRE EWES. A. M. Plumh Estate, R. F. D. No. 4, Box 47, Greeley, Colo. Phone Red 27R2.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

SEND FOR NEW FARM, RANCH LIST, 100 hargains. A. J. Simonson, Cooper Bldg., Denver, Colo.

IF YOU WANT TO SELL OR EXCHANGE YOUR property, write me. John J. Black, 33rd st., Chippewa Falls, Wis.

SHAWNEE, OKLAHOMA, CENTER OF A GREAT farming country. Write for free Agricultural booklet. Board of Commerce, Shawnee, Oklahoma.

SELL YOUR PROPERTY QUICKLY FOR CASH, no matter where located. Particulars free. Real Estate Salesman Co., Dept. 11, Lincoln, Neb.

OWING TO CHANGE OF OCCUPATION, I WILL sell my ranch and full blood Angus cattle and Percheron horses, or any portion of them. Address G. F. Lucore, Arriha, Colo.

HEREFORD AND OTHER FINE CATTLE LANDS or farms that offer best opportunities. Eight months pasturage annually. Silage crops. Improved or unimproved lands. Wonderful mild winter climate. Write for our listings and terms. Railroad Farm Land Bureau, San Antonio, Texas.

DAIRY FARMS AND LANDS, WHICH OFFER splendid opportunities for dairying, with creamery and market right at your door. Also excellent for diversified and other farming. Ideal mild healthful climate. Schools, churches, railroad and other advantages. Write for listings, terms, etc. Railroad Land Bureau, San Antonio, Texas.

YOU CAN OWN A FARM FOR LESS MONEY IN Oklahoma and Arkansas than anywhere in the old thickly settled states; a little money and energy to clear virgin land will make a farm for the right man. Cheap lands, of good quality, along the Kansas City Southern Railway. Write to S. G. Warner, G. P. A., 432 K. C. S. Ry. Bldg., Kansas City, Mo.

FARMS OF ANY SIZE, FROM 60 ACRES TO 3,600 acres, irrigated, non-irrigated and pasture land from the famous Zang ranch at Broomfield, Colo., 15 miles from Denver. On Lincoln Highway, trolley line and two railways; modern improvements, including stock farm set. Call at farm or send for booklet G-1. The A. J. Zang Investment Co., owners, American Bank Bldg., Denver, Colo.

REAL FARM OPPORTUNITIES IN TEXAS, where farming pays hest. Best markets, schools, railroads and roads. Ideal, mild winter climate. Would you like to know of these opportunities? Write us crops you are interested in, livestock you want to raise, acreage you want, whether improved or unimproved, and terms wanted. We ean then locate you ideally, where markets are guaranteed. Railroad Co-Operative Farm Bureau, San Antonio, Texas.

SAN LUIS VALLEY IRRIGATED FARMS—THE hest land in the valley, under a first-class irrigation district; 125 acres, improved, adjoining Federal Aid Highway; 40 acres, improved, adjoining Federal Aid Highway; 40 acres, unimproved, ½ mile from Federal Aid Highway; 80 acres, unimproved, 1 mile from Federal Aid Highway; 20 acres, unimproved, 1 mile from Federal Aid Highway. Every foot can he irrigated and will raise a crop. Look at the crops on the above and adjoining lands and he your own judge. For prices and terms write or see owners. A. A. Salazar & Son, San Luis, Colo.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WRITE FOR DELIVERED PRICES ON CEDAR posts. Pay after unloading. J. B. Overton, Sagle, Idaho.

LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices hefore building. Catalog, plan book free. Contractors Lumher Supply Co., 443 Lumher Exchange, Seattle, Wash.

HELP WANTED

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GOVERNMENT AND RAILWAY MAIL CLERKS needed everywhere; high salary; permanent positions. Particulars free. Write Modern Institute, 455 Charles Bldg,, Denver, Colo.

U. S. GOVERNMENT NEEDS CLERKS—MEN, women, over 17; $135 month. List positions free. Write immediately. Franklin Institute, Dept. D-135, Rochester, N. Y.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HATS CLEANED.

OLD HATS MADE NEW. S. M. BELWOOD, 1542 Court place, Denver.

INVENTIONS.

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

VIOLINS.

VIOLINS WITH COMPLETE OUTFITS FOR SALE on easy monthly payments; five days free trial. Write Miss Bertha Mardiss, Shawnee, Kans.

PATENTS.

PATENTS—BOOKLET FREE. HIGHEST REFERences. Best results. Promptness assured. Send model or drawing for examination and opinion. Watson E. Coleman, Patent Attorney, 624 F st., Washington, D. C.

WOOD CUTTING CONTRACTS WANTED.

WILL TAKE CONTRACT TO CUT WOOD—Want hig johs; power saw used. Address E. Gatewood, corner S. Madison and E. Evans, Denver, Colo.

KODAK FINISHING.

KODAK PICTURES WELL PRINTED DOUBLE the pleasure you get from them. Mail your Kodak finishing to us. Write for price list and sample prints. Haanstad's Camera Shop, 404 Sixteenth street, Denver, Colo.

BOOKS.

LOST HEIRS—A 400-PAGE BOOK, FILLED with names for lost heirs and missing kin, from different parts of the world. Chancery Court of England, Ireland, and Bank of England lists included; price $1. International Claim Agency, 232, Pittshurgh, Pa.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per eent on your supplies. 5-lh. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

ADDITIONAL CLASSIFIED ON NEXT PAGE.

TOBACCO.

KENTUCKY HOMESPUN TOBACCO, 10 POUNDS $3; 20 pounds, $5. Rufe Veal, Jonesboro, Ark.

HONEY.

DELICIOUS NEW HONEY, 10-POUND PAILS $2.50; 60-pound cans, $13.00. You will find this honey pure, clean and nice. A. A. Lyons, Fort Collins, Colo.

PURE ROCKY MOUNTAIN HONEY, LIGHT COLORED or white, good flavor; one can, 60 lbs. net cased, $12. Two in case, $23. F. O. B. Hooper. H. F. Smith, Hooper, Colo.

"THEBESTO" ROCKY MOUNTAIN HONEY, light colored, thick, fine flavored; per can, five pounds net, postpaid, anywhere west of Ohio river, $1.50. Send remittance with order. The Colorado Honey Producers' Association, Denver, Colo.

TANNING.

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

LEATHER TANNING RECIPES—ONE FREE guaranteed. Cheap way, proof furnished. Agents wanted. R. N. Gilley, Carlton, Tex.

TRACTORS AND FARM IMPLEMENTS.

POWER HAY PRESS AND 12-25 AVERY TRACTOR; both guaranteed excellent working order; $900; tractor alone, $600; real bargain. Owner, 1739 Fifteenth st., Denver, Colo.

FOR SALE OR TRADE, 12-25 AVERY TRACTOR, Guide & Sanders 5 disk plow, good condition. Crop payments to responsible party. Write to F. J. Shindler, Deer Trail, Colo.

FOR SALE

Registered Big Type Poland China Hogs

Have a few good Spring Boars and Gilts at the right price.

J. F. WILSON

Montrose, Colorado.

Poland China Boars

I am offering a few choice April Poland China Boars at very attractive prices. They are by Joe King, one of the smoothest boars in the country.

Also one fall boar by Joe King, out of the splendid sow Long Giantess by Kirk, him by Tecumseh Wonder, Champion of the State of Missouri.

Anyone wanting a boar of the good stretchy kind, and high backs, can't go wrong on these pigs.

Also have a very limited number of gilts.

MAIL ORDERS SOLICITED.
SATISFACTION GUARANTEED.

C. J. Mather, Longmont, Colo.

OUR 1920 WINNINGS

At six fairs were more than satisfactory. You'll like the type and quality of our

DUROCS

For breeding stock write

Burt Hart & Sons, Longmont, Colo.

BIG TYPE Poland China **HOGS**

Of most fashionable breeding. A few choice boars and bred gilts from the first-prize-winning herd of Colorado are for sale.

A. D. McGILLVRAY,
R. F. D. 1. BOULDER, COLO.

D. S. Polled Herefords

Cows from Polled Plato, herd headed by POLLED SUCCESS A 3rd. Young bulls and heifers for sale.

Smith Livestock Co.
CHIVINGTON, COLO.

SCOTCH AND SCOTCH-TOPPED

SHORTHORNS

We now have ready for sale a few yearling and 2-year old bulls and heifers—grandsons and granddaughters of Imported Villager—at prices ranging from $175 to $300.

I. J. NOE & SON, Greenland, Colo.

Brae Side Farm Durocs

A gilt sired by Brae Side Orion and bred to Great Wonder's Colonel will put you on the map as a breeder of Big Type Durocs. Also a few yearling sows and spring boars for sale. Fifty head to select from. Priced to sell. BRAE SIDE FARM, E. D. Hardman, R. F. D. 1, Pueblo, Colo.

COL. H. C. JENNINGS.
Purebred Livestock

AUCTIONEER

Also conduct Sales of Real Estate.

534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

BLUE RIBBON HERD

Registered Duroc Hogs and Holstein Cattle

Our Duroc Herd has won over 1500 ribbons including 75 Championships.

Heading this great herd are Burke's Good E. Nuff Again, a Grand Champion in Colorado and heaviest Duroc by official weight at National Swine Show, Omaha, 1917; Big Cherry King, sire of all first prize futurity winners, Pueblo, 1918; and Blue Ribbon Sensation that we paid $1,000 for at nine months old.

Write us for prices on farmers' boars, bred sows and some great show prospects.

The Blue Ribbon Livestock Co.

C. F. Burke, Mgr. Pueblo, Colo.

MILK RECORDS

Do Not Replace Straight Bates Shorthorn Blood

FOR

Straight Bates Shorthorns are the "foundation source" of the Milking Shorthorns of England and America. The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

MILKING SHORTHORNS.
All Cows Officially Tested. 125 in Herd. Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.
THE BONVUE FARMS CO.,
Stockyards, Denver, Colo.

Glendale Stock Farm

Irvindale Rowdy Grand Champion Belgian Stallion Chicago, 1917, Denver, 1918 and 1919

Breeders of
BELGIAN HORSES
and
POLLED HEREFORD CATTLE

Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

BEAU ASTER

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER
Holyoke, Colo.

Phone Greeley 868 — Denver Champa 4506 York 7933W

Snook & Leachman

Auctioneers

SOLICIT YOUR SALES

WIRE US FOR DATES.

C. W. SNOOK, Greeley, Colo.
ORD L. LEACHMAN, 205 Livestock Exchange Stock Yards, Denver

WILL SELL AT AUCTION

November 24th, 1920

— AT THE —

Range View Ranch, Henderson, Colo.

C. V. RATCLIFFE, Manager.

65 Registered Durocs

incuding winners at the Adams County Fair, 1920.

75 Grade Holsteins 20 Draft Horses

Will also Auction the entire ranch, including all FARM MACHINERY AND IMPLEMENTS

For further particulars write

SNOOK & LEACHMAN, Auctioneers and Sales Managers
205 Livestock Exchange Bldg., Stockyards, Denver, Colo.
Phones: Champa 4506 and York 7933-W.

SOME GOOD RAM LAMBS

Hampshire Rambouillet Shropshire

Also Duroc and Poland China Pigs, Both Sexes.
Write for Descriptions and Prices.

COLORADO AGRICULTURAL COLLEGE, Fort Collins, Colo.

When You See a **GOOD SHORTHORN**

Think of Jay & Allan, Boulder, Colo.
STOCK OF BOTH SEXES FOR SALE.

DICKENS SHORTHORNS

For immediate delivery we have a few choice young bulls, and yearling heifers; also fifteen head of 4-year-old cows with calves by side. These are all priced reasonable. Come and see them. Correspondence promptly answered.

W. A. Dickens, Longmont, Colo.

ANNUAL

Bred Sow Sale

DECEMBER 2, 1920
— AT —
FORT COLLINS, COLO.,
in Sale Pavilion.

FARM CONGRESS WEEK.
BOULDER AND LARIMER COUNTY REGISTERED BREEDERS' ASSOCIATION.

Auctioneer:
H. L. HULL, Des Moines, Iowa.
Watch for announcement in next issue of Western Farm Life.

BOARS

DO YOU NEED ONE? WE HAVE HIM.
POPULAR BRED. POPULAR PRICED.
GUARANTEED.

DALY'S DUROCS
CAMBRIDGE, NEBR.

REGISTERED BIG TYPE DUROC JERSEY HOGS

Am offering some good Spring Gilts and Boars. Also some good fall gilts. Write for prices and breeding.

August F. Borgmann,
R. F. D. 4. LONGMONT, COLO.

WILLIAM UPP

Livestock Auctioneer

Purebred Hogs a Specialty.

DEER TRAIL, COLO.

Straight and Polled Shorthorn Cattle

Valentine's Last X12316 452005 at head of beef herd. Claywood White 427350at head of milk type.

STATE INDUSTRIAL SCHOOL
Golden, Colorado

The Divide Herd

Young Bulls

We are now offering at very reasonable prices some good Shorthorn bulls suitable for small herds. Fall calves and a few yearlings priced for quick sale. Full particulars on application.

THE ALLEN CATTLE CO.,
SHORTHORN BREEDERS,
Colorado Springs, Colorado

REGISTERED
JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.

H. J. VAUGHN, KIRK, COLO.

FOR SALE—ENTIRE HERD OF

Registered Holsteins

Bred right. Many of them closely related to the cow "Western Ascalon" that sold at the National Sale for $5,500. These cattle will be priced right. Must sell because of failing health. Call or write. W. B. & E. M. DOWNS, ROUTE 1, YUMA, COLO.

GREAT BARGAINS—REGISTERED HEREFORDS; DURHAMS (called Shorthorns), and ABERDEEN ANGUS; ages 1, 2, 3 and 4 years old. Prices $125 per head and up. Also Percheron and Belgian Horses from 1 to 6 years old. Prices $125 and up. Write for circular. One head or car lots. Breeding Guarantees with each.

ILLINOIS HORSE & CATTLE CO.,
Good Block, Des Moines, Iowa.

FOR SALE.

Sons of Sir Johanna Bess Segis

who combines in the closest degree the blood of **King Segis Pontiac Count** and **Piebe Laura Ollie Homestead King.** Send for their story.

PAHGRE VALLEY RANCH,
MONTROSE, COLO.

Campion's Majestic Sunbeam and Beau Mischief Herefords

MAJESTIC SUNBEAM No. 364681. Calved February 25, 1911. Sire—Majestic the 24th No. 293221. Dam—Armour Sunbeam No. 85081. Majestic Sunbeam, grandson Imp. Majestic, one of the best and biggest boned Hereford bulls ever imported to this country.

BRUMMEL MAJESTIC No. 628435. Calved March 20, 1917. Sire—Majestic Sunbeam No. 364681. Dam—Don Amelia 2nd No. 135871. 56¼ per cent Anxiety, 31¼ per cent Imp. North Pole, Lord Wilton Grove the Third. 12½ per cent Imp. Majestic.

AMELIA'S BEAU MISCHIEF No. 557094. Calved April 27, 1916. Sire—Beau Mischief the 15th. Dam—Don Amelia 2nd No. 135871. Ninety per cent Anxiety blood. Secretary Kinzer says its almost impossible to write a better pedigree.

Sunbeam Farm,

8 Miles East of Wellington, Colo.

"They're Bred in the Purple"

The best types of Majestic Sunbeam and Beau Mischief Heifers and Bulls for sale.

The Big Bone Registered Poland China Sows and Gilts and Boars for sale at all times, also fullblooded bred gilts. Come and see them. Visitors welcome at "Sunbeam Farm" any time.

A. J. Campion

DENVER, COLORADO.

SHIP TO THE OLD RELIABLE COMMISSION FIRM

The Sigel-Campion Live Stock Commission Co.

And we will get you the High Dollar for your stock. Experienced salesmen in every department.

A. J. CAMPION

Pres. and Gen. Mgr.

EXCHANGE BUILDING
DENVER UNION STOCK YARDS.
Phone Main 8300.

Three Big Public Sales

DECEMBER 6th to 9th

December 6th:

Sale of High-Grade Holsteins

Draft Horses, and Farm Implements and Equipment.

December 7th:

65 Head Registered Holsteins

This herd includes some of the best Holstein blood in the state.

These two sales will be held at the
W. A. PURVIS FARM, JOHNSTOWN, COLO.

December 8th:

Registered Holstein Sale

At the McNEIL & SON FARM, 7 Miles North of Platteville, Colo., and ¾ Miles South of Twin Bridges.

December 9th:

Dispersion Sale Registered Holsteins

At the W. C. SAUER & SON FARM,
4 Miles Northwest of Fort Lupton, Colo.

The above sales offer a rare opportunity to pick up some of the very best Holsteins in Colorado. The herds contain some of the record cows of Colorado, as well as some excellent show stuff.

For further information and catalogs, write

SNOOK & LEACHMAN, Auctioneers and Sales Managers
205 Livestock Exchange Bldg., Stockyards, Denver, Colo.
OR GREELEY, COLORADO.

DeWITT HEREFORDS

HERD BULL—MISCHIEVOUS JR., by THE HEIR

His dam is Mischievous 3rd, a full sister of BEAU MISCHIEF and the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of
GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

Cheyenne——to——California

11 HEAD REGISTERED HEREFORDS

Shipped from our herd to Wm. Briggs, Dixon, Calif.

They were choice ones too

We can satisfy discriminating buyers.
Write for Photo "W" with Pedigree.

Hereford Corporation Cheyenne, Wyo.

Announcing Change in name of our herd sire, formerly "King Johanna Cedarside Pontiac," to

"COLORADO COUNT"

One of the finest individual sons of King Segis Pontiac Count, whose 29 tested daughters have broken over 100 world's records. COLORADO COUNT was JUNIOR CHAMPION at the 1920 State Fair and GRAND CHAMPION at the Douglas County Fair. We believe him to be one of the greatest prospects of the breed. He heads the herd of

WALLIE FARM REGISTERED HOLSTEINS
4800 South Penn, Denver, Colo.
W. G. FOSTER, Owner.

Home of Mystic Polkadot Lotta, State Champion Junior 2-year-old, who gave 540.4 lbs. milk in seven days. Also the home of 23 fine A. R. O. heifers.

Bulls from these A. R. O. 2-year-olds for sale. These heifers will make better records in their three and four year-old form and their calves will, naturally, be more valuable.

Take advantage of this fact and BUY NOW.

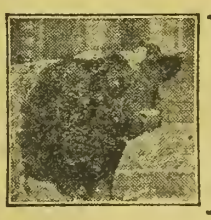
L. G. Davis Herefords ANXIETY BRED

Sires in Service:
The Great BEAU CARLOS 2nd
BONNIE WESTON, by Bonnie Brae 15th
WYOMING 4th, Champion Senior Yearling
Denver, 1919.

Have for sale 20 Heifers, 10 to 15 months old.
Our own breeding.

We have a few High Class Yearling Bulls For Sale.

L. G. DAVIS, Saratoga, Wyo.



THREE BIG SHOWS

American Royal, Kansas City, Mo., Nov. 13—20.
Pacific International, Portland, Ore., Nov. 13—20.
International, Chicago, Ill., Nov. 27—Dec. 4.

Important Shorthorn sales will be held in connection with each event. Watch the papers for further information. Watch also for the announcements of other Shorthorn sales in various parts of the country.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION,
13 Dexter Park Avenue Chicago, Illinois

I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
JOHNSTOWN, COLO.

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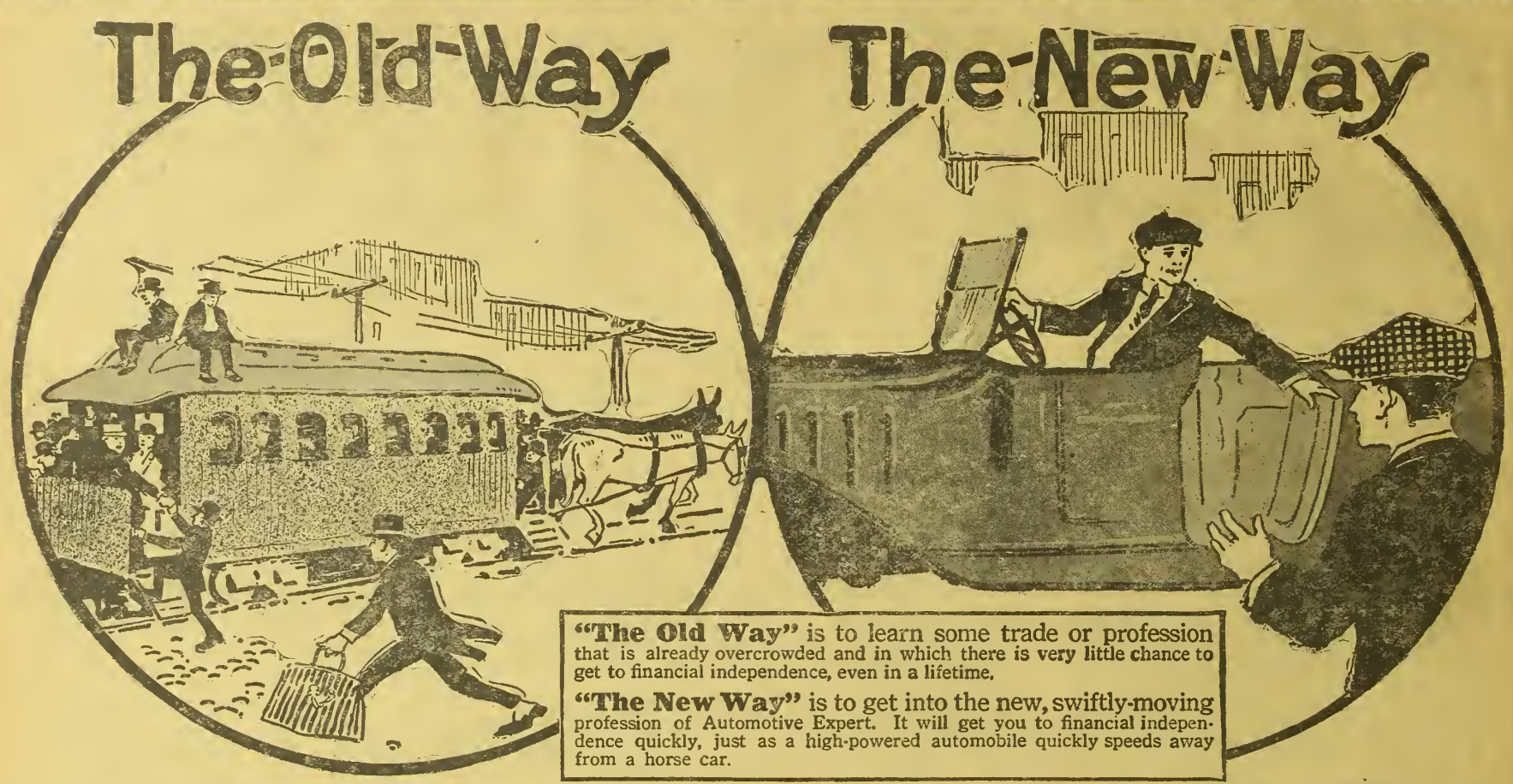
YOUNG MEN Which Way Will You Choose—the Old Way or the New Way?



"The Old Way" is to learn some trade or profession that is already overcrowded and in which there is very little chance to get to financial independence, even in a lifetime.

"The New Way" is to get into the new, swiftly-moving profession of Automotive Expert. It will get you to financial independence quickly, just as a high-powered automobile quickly speeds away from a horse car.

These Young Men Have Started "the New Way" and are Making Money

Otto Maier, Seward, Neb.: "My home is on a farm 11 miles northwest of Seward. I took my training in your school so that I could stay on the farm and be able to repair motorized machinery at home. It has already repaid itself many times over for I have not only been able to do all my own repair work, but I have done a great deal of repair work for my neighbors. I don't know of a better thing that a farm boy can do than to go to your school. For after he has taken eight weeks' training he can do all his own repair work on his car and tractor and in his idle time he can get all the work he wants doing repair work for his neighbors. He can soon earn many times more than his training cost him, and have the benefit of increased earning all his life. I am sure a booster of the Lincoln Auto & Tractor School."

George Carlson, Blair, Neb.: "The Lincoln Auto & Tractor School is a wonderful institution. In fact it is hard to realize the great opportunity that this school affords in a period of 8 weeks. The experience and knowledge gained is of great value to any one. The method of instruction used at the Lincoln Auto & Tractor School is different and makes the work interesting and especially easy to understand. I can say that the men in charge of the school live up to every statement they make and every student will be given a square deal."

Joe C. Drevo, Crete, Neb.: "Part of the time since leaving school I have operated a tractor and threshing machine outfit. I like mechanical work fine and recommend the Lincoln Auto & Tractor School. The training especially is valuable to the man who stays on the farm."

Gustav Potthoff, Bancroft, Iowa: "The week after graduating from your school I got a job at the Lincoln Oldsmobile Co., but soon after came to the Bancroft Auto Co. Get $35 a week and a stall for my car. The Bancroft has the Ford service and I do nearly all the overhauling, motor and transmission work."

Wm. E. Cockran, Ft. Morgan, Colo.: "It is just four years since I graduated. I had no difficulty in stepping into a good paying position and worked as garage mechanic for two years. Since that time I have been Service Manager of the largest garage in Ft. Morgan."

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Ralph Moore, Aurora, Neb.: "I was in your school six weeks. Am working for the Hampton Auto Co., Hampton, Neb., and doing fine."

The "New Way" Coupon
Fill Out, Cut Off and Mail

LINCOLN AUTO & TRACTOR SCHOOL
2423 O St., Lincoln, Nebraska

Gentlemen: — I want to know how you make men independent for life. Send me the Book. Am really interested.

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Most young men start through life the old way

—they climb aboard one of the old-time trades or professions that is already overcrowded and in which there is very little opportunity ever to make any real money. That is why most of them barely make a living, and when they die, they usually leave nothing but a little life insurance and a lot of debts.

Young men who use their heads for thinking are picking the new rapidly-expanding profession of Automotive Expert. It is the quick and easy-money route to financial independence—and that is what we are all seeking.

We make the assertion that any young man of ordinary ability — without special education—who takes a course in Automotive Mechanics at this School and improves the opportunities that naturally come to him, can retire within fifteen or twenty years with a comfortable fortune, while many may easily become wealthy.

Lincoln Auto & Tractor School
Starts You "The New Way"

It starts you on a quick and easy road to a good job—the sort of a job that every red-blooded American likes—a job where there is work to do that stimulates your interest and ambition.

How fascinating it is to be able to walk up to any dead automobile, truck, tractor or gasoline engine, look it over and tell the owner just what to do in order to start it again; or to take a piece of complicated machinery that has broken down and by proper repairing and adjustment set it to throbbing again. That is the sort of an expert you become after spending a few weeks at this School.

This Is the Year of Opportunity

There has never been a time in the history of the country when the mechanical job sought the trained man as it does today. The automotive industry of the nation has sprung into enormously expanded production, draining the country of its mechanics and clamoring for more. There's a good job waiting for every mechanic—good, bad and indifferent—while the reliable and earnest young man, properly trained mechanically, has a splendid position waiting for him, with wonderful opportunities for advancement, in practically any city in America in which he may decide to locate.

The Automotive profession means quick action—only a few weeks to learn and then you begin making money at once. The man who hesitates loses out. It's the man who decides and acts that wins.

This School is different. Our classes are small and you learn by individual instruction. Lincoln is just the right size—with expenses much less than in larger cities. It is the Educational Center of the West, a clean, home city, with many high grade factories, to which our students are welcome. Send the Coupon on the left for our Big Free Book.

Lincoln Auto & Tractor School

"The School That Teaches You To Boss the Job"

(23)

2423 O Street Lincoln, Nebraska

In a few short weeks we teach you how to operate and repair any automobile, tractor, stationary engine, electric farm lighting plant, or electric starter, and how to do acetylene welding. It makes no difference how little you know about automobiles or tractors—in a few weeks you can become an expert.

Our graduates are making splendid salaries as Tractor and Truck Operators and Salesmen, Repair Experts, Garage Managers, Chauffeurs or Expert Welders, or as Expert Mechanics in Auto and Truck Factories or Service Stations. You can easily do as well.

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We teach you not only to be an Expert Motor Mechanic, but also to boss the job — how to tell others what to do and to hold the better positions such as Garage Manager, Factory Foreman, Auto and Tractor Demonstrator, Special Service Expert, Etc.

Operate a Tractor or Truck

We teach you how to operate and repair any Tractor, Truck, Gasoline Engine or Farm Lighting Plant. If you stay on the farm, you can save considerable keeping your own motor machinery in repair, besides earning a good income working for your neighbors.

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If you want to go into business for yourself, we teach you how to start and operate an Auto, Truck or Tractor Agency and Garage. There are so many motor machines now that the repair business is enormous. Get started and you can make a fortune in a few years.

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IN

The Only Agricultural Magazine Published in Colorado

WESTERN FarmLife

Vol. XXII. *Denver, Colorado, November 15, 1920.* *Semi-Monthly*

ALFALFA PASTURE CUTS COST OF PORK PRODUCTION ONE-HALF.

At the Iowa Experiment Station the cheapest pork was made on alfalfa pasture at a cost of $2.33 a hundred pounds, when corn cost 50 cents a bushel and hay was figured at $14 a to..

Honest Shoes For Honest Work

Mayer *Honorbilt* Work Shoes

MADE of honest leather, "Built on Honor" by skilled workers, *Honorbilt Work Shoes* will give double the wear of ordinary shoes.

Suitable for every kind of work on the farm too. For the leather in *Honorbilt Work Shoes* is double tanned to resist the alkali in the soil and the leather-eating barn yard acids.

And you will find these long wearing shoes always soft and easy on your feet. Wet work will not make them hard; they stay pliable and comfortable with the roughest use.

Honorbilt work and dress shoes, for every one in the family, are sold by leading dealers everywhere. All bear the *Mayer Honorbilt* trade mark—a guarantee of quality that never fails. Look for it on the soles and if your dealer does not handle *Honorbilt Shoes* write us.

F. Mayer Boot & Shoe Co., Milwaukee, Wis.

Mayer HONORBILT SHOES

MILWAUKEE Mayer CUSTOM MADE

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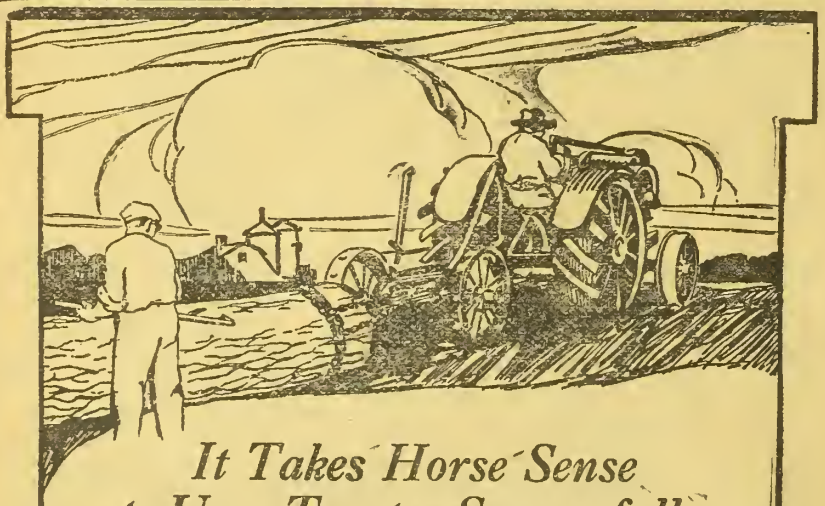

It Takes Horse Sense to Use a Tractor Successfully

Just as every other farm operation calls for good sense and good judgment, so does the handling of your tractor. A tractor will stand without hitching, but it won't run without oil. How well it performs, and how long it lasts in good condition, are both dependent on the lubrication it gets. For every mile a tractor travels its engine does twenty times as much work as an automobile engine. It requires a special oil.

Stanolind Tractor Oil is made to stand the tractor engine's high operating heat. It does not run thin under the most gruelling work—when the engine works at full load for hours. Stanolind Tractor Oil assures full compression and power. It minimizes carbon troubles.

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(A Colorado Corporation)

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STANOLIND
TRACTOR OIL

Beef Feeding Outlook.

Good suggestions are contained in a recent statement issued by Professor Geo. E. Morton, head of the Animal Husbandry Department, Colorado Agricultural College, regarding opportunities for cattle feeding during the approaching winter. Prof. Morton advises against sacrificing good cattle, stating that there is nothing to be gained by dumping thin stuff on the market. He advises liberal use of feed stuffs during the winter.

"When it comes to carrying stocker cattle and breeding stuff through the winter," says Prof. Morton, "it seems safe for a man with good cattle and who has, or can get feed, to carry this stuff through rather than sacrifice it. It may take several years for the beef market to recover, but, nevertheless, nothing is to be gained now by dumping an extraordinary amount of thin stuff upon a market which cannot absorb it through the feed lots and must kill it even though it is not fat.

"Many men on the eastern plains and mountainous sections have a good deal of rough feed on which they can carry a considerable number of stock. Where this feed consists almost wholly of native hay or corn fodder and straw, some other feedstuff must be given with it unless the roughage is extremely cheap. In a few sections, I understand, hay is around $6 and $8, and even with the low price on concentrates, such as cotton cake and oil cake, it probably would pay to feed this cheap hay without adding anything to it. Where hay is still fairly high in price, and particularly in the plains section where the difficulty of getting feed from the outside is not so great, it may pay to feed cottoncake or oilcake."

Prof. Morton calls attention to quotations from a Texas firm of $40 per ton f. o. b. Texas for cottoncake. This is lower than in years and he states that the addition of a little cake to the ordinary roughage is advisable. He calls attention to the fact that where a farmer has a great deal of roughage and some ensilage he can get good growth without these high protein feeds, by feeding a little heavier of the stuff which he has on hand.

San Luis Valley Shorthorns.

Many purebred herds are becoming established in the San Luis Valley. I visited a number of Shorthorn herds. The best known herd is that owned by J. K. Holmes at Center. He laid the foundation with selections made in prominent Iowa herds. Villager's Prince, a son of Villager, a short-legged, mellow-fleshed roan, heads the herd, assisted by Royal Coronet, a white yearling by Villager's Coronet. A number of the get of Villager's Prince have been sent to neighboring ranches. They are of the practical type, and popular among those who are interested in Shorthorn breeding. The first Shorthorn sale was held at Center last November. Fourteen head consigned by Mr. Holmes averaged nearly $500, which gives a suggestion of the inclination on the part of ranchers in the valley to invest in Shorthorns. The Holmes herd includes representatives of fifteen of the more popular strains of the breed, and the type represented is a decided credit to the judgment displayed in their selection.

W. J. Sproul, also at Center, formerly a Denver business man, who came out from Illinois in an earlier day, has an extensive ranch suited to alfalfa and cattle production. He has laid the foundation for a herd with selections made from the Holmes herd. The J. H. Neal herd at Moffat contains around fifty Shorthorns, with a son of the prize-winning Prince Valentine 4th in service. T. A. Milner at Monte Vista maintains around 25 head with a Sultan bred bull in service, and several daughters of Crusader represented. D. S. Jones of Center has a moderate sized herd. Neumeyer Bros., J. L. Hurt, I. F. Bacon, Dacre Dunn, John Mitchell, C. B. Wadsworth, all of Center, and others in various parts of the valley are engaging in the raising of registered Shorthorns.

At Del Norte a considerable start has been made with purebred Shorthorns and the Del Norte Shorthorn Breeders' Association has a liberal membership. There has been a decided advance, so far as the Shorthorn interests are concerned, during the past two years, and a general tendency on the part of ranch owners to employ Shorthorns as a leading feature of their operations. While J. K. Holmes has been an extensive sheep operator for many years, it is his purpose gradually to reduce his sheep interests and devote his ranch and time entirely to registered Shorthorns.—F. D. Tomson in The Breeder's Gazette.

HE SMOKES MEAT WITHOUT A FIRE

Washington Farmer Simply Applies Liquid Smoke—Flavor is Improved and all Shrinkage Prevented.

Victor Hillhouse of Conconully, Wash., has no use for a smokehouse. In a few hours, without fire or loss, Mr. Hillhouse cures his meat by simply painting it with Wright's Smoke.

"I am convinced that it is the only system of smoking meat," says Mr. Hillhouse. "No more of the old way for me. I wouldn't be without Wright's Smoke if it cost $10 a bottle."

Thousands have found that the Wright method improves the flavor, keeps meat sweet and free from insects and prevents all shrinkage, saving 20 pounds in every 100. Wright's Ham Pickle, mixed with salt, sugar-cures meat to perfection without trouble or loss.

Wright's Smoke and Wright's Ham Pickle cost little at any drug store. If your dealer hasn't the genuine, guaranteed Wright Food Products, write E. H. Wright Co., 828 Broadway, Kansas City, Mo., for free book.—Adv.

Ask Your Dealer. "The Guarantee Protects You"

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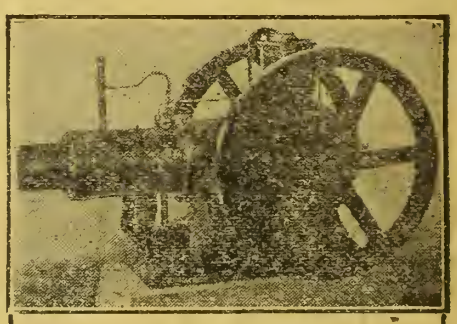

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Manufacturers (for 35 Years)
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Have water on your own farm. In spare time make wells for your neighbors. It means $1000 extra in ordinary years, double that in dry years. No risk—no experience needed.

Outfits for Getting Water Anywhere

Earth augers, rock drills and combined machines. Engine or horse power. *Write for easy terms and free catalog.*

LISLE MFG. CO.,
Box 743 Clarinda, Iowa

Western Farm Life

A Western Magazine for Western Farmers and Stockmen

VOLUME XXII. DENVER, COLORADO, NOVEMBER 15, 1920. No. 22.

Pat Murphy Colorado's Oldest Farmer

OVER 99, BUT STILL DOES DAY'S WORK IN THE FIELD

ALVIN T. STEINEL.

WHEN Patrick Murphy was a youth they reaped with a sickle and threshed with a flail; and the iron plowshare was a new invention; the steel riding plow a dream; a grain binder unthought of and a tractor no nearer than the flying machine. And the ox was the beast of burden for the man with the hoe.

Today Patrick Murphy is old—so very old that his recollection compasses the reconstruction of Europe after the Napoleonic wars. Pat saw the light five years after the Battle of Waterloo had become history. He farmed in Ireland before the slaves were freed in the United States. And today, after passing by six months his ninety-ninth birthday, he is still active as a ranchman near Monument, Colo. In March, 1921, he will become a centenarian.

Listen, you retired farmers at half his age: Patrick Murphy shocked grain in September! He still manages the cattle on his ranch of 1,160 acres. His brain is clear and his eye bright. He takes an active interest in business—the farming business—in politics and public affairs. I saw him at the Monument potato bake in October. He believes in community gatherings and fairs and he attends and takes part, at least as a spectator.

Patrick Murphy came to America in 1867 and a year or two later he took up land near Monument. For over half a century he has been on the same ranch. He has never been married and his chief retainer and companion for a score of years has been Thomas M. Long, also a bachelor, and only about half as old as Pat. Long has the unique distinction of having been a tenant on the Murphy ranch for eleven years without so much as a scratch of the pen between owner and lessor.

"We don't need a lease," said Mr. Long. "We just agree on general terms and stick to that. Mr. Murphy lets me handle all of his cultivated land on shares on the basis of one-third of the crops, he furnishing everything. I farm 155 acres. The balance of the ranch is under his management and on that he runs cattle. I worked for him as a hand for ten years and then, eleven years ago, we decided to go into this share arrangement and we have kept it up all that time without dispute or trouble over the settlements. Mr. Murphy is a fine landlord and a fine man in every way. He keeps up subscriptions to Western Farm Life and to several other good magazines for the ranch; they come in his name, but they are for use of all of us. He isn't as active as he used to be, but still does a man's work in the field when he is needed. Just a few weeks ago, if you had come out to the ranch, you could have seen him shocking grain."

Murphy and Long being bachelors, they do their own cooking, and the centenarian does his share of it. Modern days and ways haven't changed the custom of old times when every ranch house was ever ready for the chance visitor. One always finds an open-handed welcome at the Murphy ranch and if it is anywhere near meal-time the invitation to stay is urgent and the fare is well cooked and substantial.

Murphy mingled with his fellow farmers at the Monument celebration and everyone had a cheerful "Hello, Pat," for the patriarch.

"It's fine to have the farmers come together in this way," suggested a visitor.

"It is indeed, sir," he replied with dignified politeness. He seemed shy of words, but there was something to keep his thoughts busy, for with nearly two thousand people gathering for a feast and hardly a horse-drawn vehicle in sight, memory was occupied with comparisons. Murphy came to the Monument country when ox teams were still winding over the trail from Pikes Peak to Denver, and today it is no unusual sound to hear the whirr of an aeroplane as it sweeps above the crest of the Divide.

Are there other active farmers in the Rocky mountain region as old as Patrick Murphy? If so, we should like to hear from them, or their relatives.

Does anyone know of a landlord and tenant arrangement covering ten years or more without a written instrument between the two parties?

If so, we should like to have the particulars. Long-time leases on land are desirable from the standpoint of both owner and tenant. The verbal lease is as lawful as one in writing. Simplicity is a virtue in farm leases. "One-third of the crops for the tenant, the owner furnishing everything," is the sum and substance of the lease that has held Patrick Murphy and Thomas Long together eleven years. Let us have other stories of long-time leases, written or oral, and examples, with full details, concerning such arrangements, and how they have worked out.

Patrick Murphy.
(Courtesy El Paso County Democrat.)

It's Hog Killing Time and Here's How to Do It

TOOLS NEEDED AND METHODS OF BUTCHERING PORK ON THE FARM.

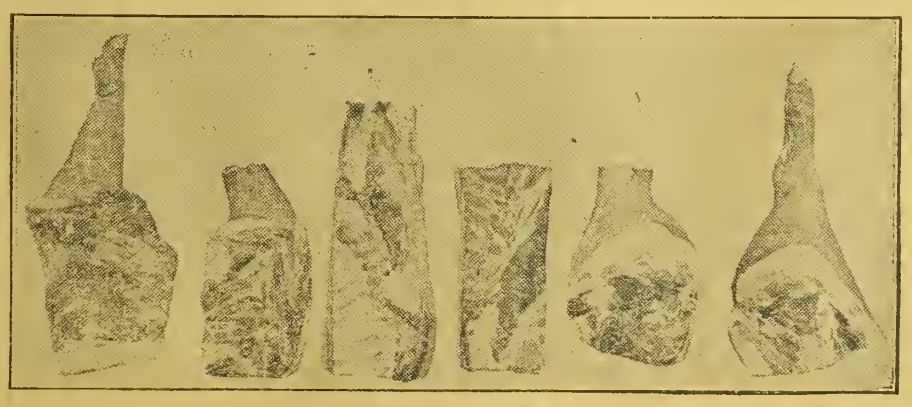
IT is false economy to attempt to do butchering without the few simple necessary tools and apparatus. These are: A killing-ax or hammer; a 6-inch skinning knife; a 12-inch steel; a 26 or 28 inch meat saw; a hog hook; a pritch for bracing beeves while skinning; a 6-inch sticking knife; a few wooden gambrels; a candlestick scraper; a 14-inch steak knife; a block and tackle for raising the carcasses of heavy beeves; a small rack for hogs and sheep; a table for scalding hogs; and a barrel or tank for scalding water. With such an outfit a person can do practically all kinds of farm butchering.

In handling the hog, put a quarter-inch rope around one of the hind legs or back of the tusks in the upper jaw. Either method is good, and if the rope is well adjusted there is no danger of the hog getting away. The best position for the hog, while sticking, is square on the back. Two men should reach under and grasp the legs on the opposite side, and with a quick jerk throw the hog over and roll it onto its back. Then it can be easily held in place by one man, who places one leg on each side, just back of the shoulder-pits of the hog, holding the front feet with his hands, while his companion does the sticking.

Where the hog is too large to handle as above, it may be stunned by a blow from an ax, or by shooting; although it is best to avoid this.

A straight, narrow-bladed knife about six inches long, is most desirable for sticking. When the hog is on the ground with the sticking knife shave off the hair just in front of the breast-bone for a distance of four or five inches. Thrust the knife in from 3 to 4 inches in front of the breastbone, directing it in an angle of about 30 to 45 degrees, directly over the midline and toward the root of the tail. Cut down toward the backbone; but not too far back, lest the knife enter the heart cavity; in which case the animal will die instantly and the blood will not be properly drained from the body. So, also, the knife should be steadily kept on the midline, to avoid making an opening back of the ribs, in which the blood may settle. The aim in sticking is to sever the arteries as they come from the heart, outside of the chest cavity, and spread to enter the shoulders, thus draining the blood from the system as by means of a syphon. If help is insufficient, or the hog too large, it may be hoisted by means of pulleys, and stuck and bled while hanging.

Unless the hogs are too large, scalding is most conveniently done in a barrel, as requiring less hot water than a tank. Place the barrel at the end of the table or platform about 2 or 2½ feet high and well braced, at an angle of 45 degrees, so that the top of the barrel will come even with the table. Block the barrel securely, to avoid danger of upsetting. Have your tools all in readiness. Where the scalding is done out of doors, in cold weather, it is best to have the water at boiling point. By the time it is removed from the kettle to the barrel, it will be very nearly at the right temperature for scalding, which is 185 degrees F. If no thermometer is at hand, test the temperature by putting the finger in the water three times in rapid succession. If it burns quite severely the third time, the water is about right. If too hot, add a little cold water.



Hams, bacon and shoulders ready for the cure.

To aid the scalding and help remove the scurf, it is well to add an alkali of some kind to the water. Soft soap or concentrated lye are best; but hardwood ashes will answer. If soap is used, a small handful to about 30 gallons of water; if lye, a teaspoonful; if wood ashes, a small shovelful.

Stir the water well. Then put the hog-hook through the lower jaw; place the hog on the table, and slide it into the barrel, rear end first. The reason for this is that, if the water is temporarily too hot and the hair should "set" in scalding, it is easier to remove it by shaving from the rear than from the fore part of the animal. Keep the body moving in the water, so that no part will rest against the side of the barrel.

Test the stage of scalding by pulling the body far enough out of the water to try the hair and give it a little chance to air, which will hasten the scalding process. When the hair begins to come off easily, pull the body out upon the table.

Remove the hair and scurf on the legs and feet at once, by twisting them in both hands. Remove the dew-claws at the same time. Then with the candlestick scraper or any convenient tool,

(Turn to Page 16.)

The Inter-Mountain Fair and Livestock Show

WESTERN SLOPE BUILDING UP BIG SECTIONAL EXHIBITION

A. M. WILSON.

THE Inter-Mountain Fair and Livestock Show, held at Grand Junction, Colo., was a decided success, notwithstanding its name and notwithstanding some criticisms to the contrary. There is a tribe of people who seem to take delight in finding flaws, and, having found them, to give to them an undue prominence. For them one flaw, however insignificant, is sufficient to ruin the whole structure. They can see the spot on the sun, but not the sun itself. Personally, I believe in seeing what is good and in emphasizing that. And in this fair and livestock show there was a credit to the management and the exhibitors.

"The Inter-Mountain Fair and Live Stock Show"—that is a somewhat ambitious name, but it represents an inspiring ideal, a worthy goal to be reached. It may be several years before that goal can be reached; but it will be a big thing for the business men, for the livestock men, and for the fruit growers and other farmers of Colorado and the adjacent mountain states when an Inter-Mountain Fair and Live Stock Show worthy of the name shall be held in Grand Junction year after year. The fair this year did not go very far in that direction; but I have only words of praise for the management. They did the best they could with what they had to build on.

The officers of the fair were Charles P. McCary, president; M H Loeffler, vice president; A. E. Borschell, treasurer, and Orville M. Hanks, secretary. All the officers were Grand Junction business men; but the directors, taken from different parts of the county, were as follows: L. L. Christman, Fruita; W. A. Smith, Clifton; R. M Fox, Loma; Grant Bales, De Beque; Heber Young, Collbran; Jacob Danz, Appleton; John H. Cutter, Palisades; Beman C. Fox, Orchard Mesa; Herman W. Vorbeck, A. P. Wadsworth, H. M. Loeffler, A. T. Gormley and C. P. McCary. These five were all Grand Junction men. The general superintendents were as follows: Livestock, T. A. Butcher; of auditorium departments, L. P. McCann, county agent of Mesa county; of the women's department, Mrs. I. L. Dixon; and of the grounds, Bert Watson, formerly of the sheriff's office.

I gave a day and a half to the fair. I would not presume to say that in that time I saw all that was on exhibition, nor can I call attention to everything that fell under my eye, that might be emphasized. I shall record merely some random impressions, and, with due respect to the management, make a few suggestions. I devoted the half day to the race track features; for no fair, county or state, can even hope to be a success, that does not provide varied and satisfactory amusement features for the enjoyment and pleasure of the spectators in the grandstand. Space limitations preclude further comment on the amusement features.

Registered Livestock Exhibits.

As I noted the pedigreed stock entered and the large number of championship ribbons and blue ribbons won by the exhibitors, I could not but feel that the campaign for the breeding and raising in Mesa county of only pedigreed stock was beginning to bear fruit. This campaign initiated years ago by the management of the Garmesa Farms is now being vigorously and successfully carried on by County Agent L. P. McCann. The livestock entered included cattle (Shorthorns, Ayrshires, Jerseys, Holsteins and Herefords); hogs (108 Red Durocs and 16 Poland Chinas); and 14 sheep. The Hereford cattle were represented solely by a herd of registered Herefords entered by the Lyon Brothers of Heiberger, twelve miles northwest of Collbran. Sheep were this season, for the first time, I am told, entered at a Mesa county fair; and of the 14 entered, thirteen, all pedigreed Lincolns, were by O. G. Place, a public spirited citizen of Plateau City.

Of the four draft teams entered, one team entered by the Valley Commercial Company of Fruita, weighed over 3,700 pounds. Two of the other teams weighed over 3,400 pounds.

Community exhibits were made by Fairmount, High Point, Fruitvale, Glade Park, Orchard Mesa, Clifton, Loma, the High Line, and the Red Lands. In awarding the prize for the best community exhibit, the expert judges from the Agricultural college must, I think, have been conscious of a certain amount of embarrassment in deciding between the rival claims of Fairmount, High Point, Fruitvale, Orchard Mesa and the Red Lands. At any rate I was not one of the judges. If I had been, I know I should have felt like awarding a blue ribbon to each of these community exhibits; so fine and attractive were the fruit, vegetable and other exhibits from each of these communities. I was especially delighted with the flower display made by Orchard Mesa and with the artistic way in which the space allotted to Fruitvale was decorated. The award for the best community exhibit went to Orchard Mesa, for the second best to High Point; but the exhibits from all five districts were community exhibits of which all the people of Mesa county might well have been proud.

The Glade Park exhibit, though not so large as the other community exhibits, was a very creditable showing. It was an important object lesson in what can be done under dry farming. The potatoes in that exhibit were calculated to attract attention. They were certainly "some pumpkins."

The Loma exhibit could hardly be called a community exhibit, since all the articles from that community were entered by one person only, i. e., Val Kiefer. Mr. Kiefer and Loma are, however, to be congratulated; for on eight of the nine products entered by Mr. Kiefer prizes were awarded, six firsts and two seconds At that ratio what a magnificent showing Loma would have made, had the entire community cooperated. Loma, I am sure, will rise to its opportunity next time.

Camp 7 of the High Line near Loma was represented by an individual exhibit entered by K. F. Collins, which also took several prizes.

The Clifton exhibit (and be it understood the writer lives in the Clifton community), was not at any time in the running for either a first or a second prize. The Clifton people were either too indifferent or too busy, or both, to take the time to collect and send in a creditable exhibit. But that the community was represented by any exhibit at all was due to the energy and enthusiasm of Mrs. W. H. Barr, the community supervisor. So great was her sense of community loyalty that she consented to serve as supervisor for the community after two men had declined to act in that capacity and after valuable time had been lost in the search for one who would consent to act.

No, the Clifton exhibit was not what it should have been, but we do not feel as bad as we ought to. Some of our fruit exhibits won prizes. The writer's sheaf of Sudan grass carried off a red ribbon. But best of all, two Clifton babies won prizes in the baby show—Loro Opal Adamson, first prize, and Rubie Catherwood Elder, second prize. Best of all? In saying that, we shall have to reckon with two Clifton Boys' Club boys: Barnard ("Bun") Moulton, who took first prize on his Duroc pig in the Boys' Club class, and Gordon Barr, who carried off for his 18-months-old Jersey heifer the blue ribbon in two classes—in the open classes as well as in the Boys' Club class.

I sincerely hope that the county agent shall be even more successful another year in getting the different communities to make community exhibits. The permanent success of the Inter-Mountain Fair and Live Stock Show and the high service which such a show is calculated to render the farmers of the county if they should, all of them, be led to take an intelligent interest in helping to make it a success, turns largely, in my judgment, upon the developing and strengthening of the community idea. If the idea is to be carried out successfully, there must, of course, be a spirit of friendly rivalry between the different communities, but more important than this is the being able to be good losers. In view of the

(Turn to Page 17.)

Late Hatched Pullets Are Not the Winter Layers

WHY MRS. SMITH HAS BETTER LUCK WITH HENS THAN SISTER JONES.

W. E. VAPLON.

IF three hundred pullets are laying one hundred and fifty eggs a day in November for Mrs. Smith, why don't one hundred hens lay fifty eggs a day in November for Mrs. Jones?

Maybe Mrs. Smith's pullets are better bred than Mrs. Jones' hens. Maybe Mrs. Smith feeds a little better. Maybe she furnishes a better house or maybe she keeps a different breed. All these things are important but they do not answer the question.

My neighbor went into the country a few days ago and bought 18 Brown Leghorn hens, yearlings, he called them. He has a nice bunch of B. P. Rocks that have done very well for him all spring and summer and he couldn't understand why they didn't keep up the pace. Strange, isn't it, that a man who has lived on a farm for fifty years knows so little about a hen's nature and habits? I don't quite comprehend why a Leghorn hen should be willing to lay when a Plymouth Rock hen refuses to, but perhaps he will find out why, or that she won't. Just now, however, he is firmly convinced that a hen ought to lay just because she is being fed, in season and out of season.

No one has a right to ask a question just to aggravate another. I wish my wife could appreciate this or at least ask no questions she cannot answer herself. Feeling this way about it I shall answer my own question. Mrs. Smith hatched her pullets the tenth of last April; they were all hatched at the same time; were put into a brooder in a warm, sunny building; were not exposed to wind and storms; did not have to fight against older chicks, grown fowls, turkeys, ducks, geese, guineas, hogs, calves and colts for their grain. Weaklings were allowed to pass to their reward quickly and easily. As soon as the cockerels were large enough to eat the whole bunch went to market. The pullets were given free range when old enough but did not have to depend entirely on their own efforts to find enough to eat. Early hatching, good care, free range, roomy, clean quarters, means that quite a number of pullets expressed their gratitude in October and most of the balance got busy in November.

Mrs. Smith's hens probably don't lay any more eggs in fall and winter than do those of Mrs. Jones. If they do it is because of better care. If her pullets lay better, it is because of the things we have mentioned. If you depend for winter eggs on hens or on late hatched pullets you will be disappointed even though you give them a palace for a home and feed them oatmeal mush and cream. While good housing, good feeding and good all-around care are important factors in winter egg production, first, and all the time, matured pullets are absolutely essential.

That New Jersey Experiment.

In a recent number we gave our readers some of the results obtained by the New Jersey Agricultural Experiment Station in a two-year egg laying contest; we have here some more interesting figures.

In the first year of the contest, the 1,000 pullets laid 161,000 eggs, an average of 161.8. Eighteen and four-tenths per cent of the pullets laid over 200 eggs. Eight per cent laid less than 100 eggs. When someone tries to tell you that his hens lay more eggs than his pullets, quote these figures, that in the second year these same fowls, that laid over 161 eggs as pullets, laid 129.4 eggs as hens. In looking over the results of any number of egg laying contests, you will find approximately the same ratio. Individual hens in this contest laid more as hens than as pullets and many hens lay as many or more eggs than pullets during certain spring months. But the fact that the early hatched pullet has about four months more laying time in a year than the hen that has passed through a molt is a handicap almost impossible to overcome. One can reasonably expect a drop of 25 per cent in eggs the second year.

While 18.4 per cent of the pullets laid over 200 eggs, only 3 per cent laid over 200 eggs the second year. One pullet laid 501 eggs in two years. One might naturally expect that the ten pullets having the highest records the first year would show up well in the second year, but only one was among the ten highest of the second year. It is generally conceded by experiment stations that the high producer of eggs does not, as a rule, produce the most prolific pullets. The spectacular, in any walk of life, as a rule is not conducive to permanency, solidity, progress. If one must keep his laying stock over the second year, the pullet taking a little more time for development before laying, then giving a 50 to 60 per cent egg yield through a longer period, will be found more profitable in the long run.

The laying record of the different breeds is as follows:

	1st Yr.	2nd Yr.
Leghorns	169.7	137.6
Plymouth Rocks	155	119.1
Rhode Island Reds....	150.6	117.2
Wyandottes	144.3	115.4

To the backyard poultryman the extra 14 eggs laid by the Leghorns means little, but to the commercial poultryman carrying two or three thousand the difference is worth considering, in view of the fact that the feed cost of the Leghorns is considerably less.

It has been shown repeatedly that the longer the molting time of a hen the less her production; in other words, the hen molting early loafs longer, cuts down her laying period and is less profitable than the late molter. In this contest, birds which rested less than ten days averaged 224 eggs, and as the rest period increased, the egg production uniformly decreased; 21 hens which rested over 131 days, molting early, laid an average of only 83 eggs. In view of this lesson, wouldn't it be wise to get rid of the hens that molt early?

Here is a lesson in weights: When pullets come into laying condition in the fall, they have not attained their maximum body weight. They continue to grow until about March 1, the heavy laying season, after which they show a continuous decrease in weight until about September 1. From this time, during the molting period, they pick up weight until late winter or early spring, the heavy laying season, when they again lose weight.

In the heavier breeds, the maximum production was secured from 80 birds which weighed six pounds each. The number of eggs per fowl was 166. Fowls which weighed less than five pounds and those which weighed over six and one-half pounds laid under the average number. This would seem to show that the ideal weight for layers in the American breeds is five to seven pounds.

Leghorns show even more forcefully this interesting relation existing between body weight and production. One hundred seventy-four Leghorns which weighed three and one-half pounds laid an average of 178 eggs. There was a big drop in production in birds that weighed two and a half pounds or less, and a considerable drop in the production in those which weighed over four and one-half pounds. During the yearling year the same relation exists. Evidently the maximum production of the heavier breeds is secured from birds weighing from five to six and one-half pounds, and of Leghorns from those birds weighing from three and one-half to four and one-half pounds.

Destroy Barberry and Eliminate Rust in Wheat

HOW TO IDENTIFY PLANT THAT CAUSES ENORMOUS LOSS TO FARMERS.

Dr. F. E. KEMPTON, U. S. Department of Agriculture.

THE white man has been referred to in speech and in verse as having one of the heavy burdens of life to bear. This burden, real or fancied, may be heavy but, to the minds of the grain growers of the world, it in no way compares with the accumulated burdens borne by the farmer in the production of the wheat crop upon which the world depends for its staff of life.

If the wheat crop escapes bad weather—cold, ice, flood, hail, frost, drouth, or hot winds—various insects may be lurking about to feed upon what remains. Plant diseases in the form of smuts, rusts, and scabs, have taken varying toll during the past years, but, as a rule, they have been less fully understood than the troubles from weather or insects. Among these diseases are the loose smuth, stinking smut or bunt, the black stem rust, the leaf rust and the scab or blight. Of all these the black stem rust has taken the heaviest toll in the northern states, from year to year, and in years of rust epidemics it has caused appalling losses. Hope is now held out to the wheat growers of the northern part of the United States that the control of black stem rust is possible by the eradication of common barberry.

It is important that everyone should understand that the harmful barberry is the tall, green, common, European barberry, and its purple variety, and may be distinguished by the following characters. Usually it is 4 to 6 feet tall, though it may reach 10 or even 15 feet if the bushes are old. The edges of the rather large leaves are toothed, the teeth ending in small spiny points. On the stems, at the base of each cluster of leaves, are three or more stout, sharp spines. The light yellow flowers and the red berries are borne in long clusters like currants. This bush, or any that resembles it closely, is harmful and should be destroyed.

In contrast to this tall bush there is a low spreading barberry, known as Japanese barberry, which in some localities is more widely planted than the tall or common barberry. The Japanese barberry is seldom over 3 feet tall and has small leaves with entire edges. The spines on the stems are only one in a place. The flowers are borne singly or in twos. The berries are a dark red in color borne singly or in twos, like gooseberries, and have a thicker skin than those of the common barberry. This barberry is harmless, as it does not carry the stem rust and should not be destroyed.

If every property owner in the northern wheat growing states of Colorado, Illinois, Indiana, Iowa, Michigan, Minnesota, Montana, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin and Wyoming co-operate, it will be possible to take this "old man of the sea" black stem rust off the shoulders of the wheat grower. Every property should be carefully examined for the harmful barberry and all bushes found should be eradicated so that no roots remain to sprout. No seedlings should be allowed to grow near it or under trees or bushes, or along fences or streams, in brushy pastures, or in any place where birds might carry seeds. In this way you help to increase the prosperity of your community by increasing the production of wheat and other grains and also help to supply more food for the whole world.

The wide interest taken in the work of eradication has been evidenced by the numerous requests received by the Department of Agriculture during the past fiscal year for informational material for use in the infested areas. Lack of funds has hampered somewhat the department's campaign against barberry. It was able, however, to supply a large number of posters, bulletins, circulars and other educational matter for distribution.

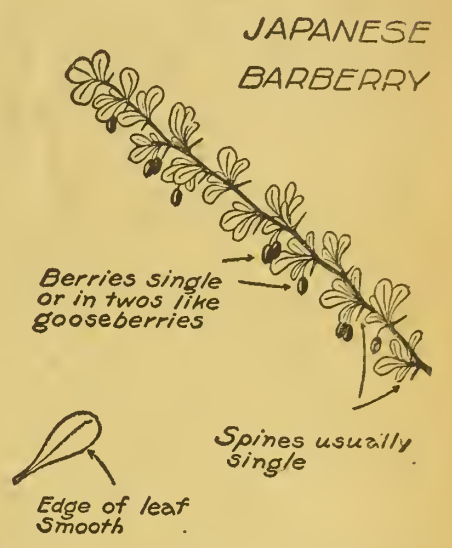
A survey to locate barberries was begun in the larger cities because of the better means for spreading information. It was extended then to the towns so that now nearly all cities and towns having a population of over 300 have been surveyed. An intensive survey of the entire rural area outside of the cities and towns has been begun. Already about 50 counties have been covered, the survey reaching every farmstead and all brushy pastures and woodlands in the entire area. This means traveling every section line, many half section lines and scouting the woodlands rod by rod.

A very important part of this survey is finding the escaped barberries which have started from seeds dropped by birds in thickets and pastures. Over 1,674,000 escaped bushes were found during the past year. A total of almost 1,900,000 bushes was found in rural districts last year. Records to date show that 3,865,426 bushes have been located and 3,705,142 bushes removed.

Denmark proved conclusively the value of barberry eradication, and by destroying the rust producing species, as required by the law of 1903, stopped all serious outbreaks of black stem rust. Previous to the removal of barberry bushes there had been periodic destructive rust epidemics. but since that time there has not been a single serious outbreak in Denmark. In the United States, however, during the same period, there have been two terrific epidemics causing enormous losses, the last one occurring in 1916, when every bushel of grain was vitally important. Not a year passes in which the black stem rust does not destroy several millions of bushels of wheat and other grains.

The guilt of the common barberry has long been established beyond any doubt. It gives the rust its start in the spring. Without the barberry the rust is practically powerless to spread to grains and grasses. The reason for this is that there are three different stages of rust during the year. The black spore stage, or winter stage, of the rust lives during the winter on grain stubble and wild grasses. It cannot spread directly to grains or grasses, but must spread first to the common barberry to get its start in the spring.

The black rust spots on stubble and straw consist of large numbers of minute black spores (seeds). The spores germinate early in the spring, producing smaller spores which are blown about by the wind. These smaller spores are entirely harmless unless they fall on barberry leaves, because they cannot start rust on grain. When they fall on barberries, however, they cause the spring stage, or cluster-cup stage, of the rust on the leaves and other tender parts of the bushes. The cluster cups are filled with immense numbers of spring or cluster-cup spores. These spores cannot spread rust from one barberry bush to another, but are blown to grains and grasses and cause the red-spore stage, or summer stage, of the rust. Within a week or ten days from the time when they fall on the grain or grass plants the red rust appears.



The red or summer stage of stem rust is familiar to most farmers, as the long reddish brown spots on various parts of the grain plants. The red spots (postules) are composed of enormous numbers of the red or summer spores of the black rust. These spores are in turn blown about by the wind and infect other near-by grains and grasses. In this way a new crop of the red spores is produced every week or ten days during the growing season, if conditions are favorable for the spread of the rust. Late in the season the red stage is replaced by the black or winter stage and the rust overwinters again in this form on stubble, straw and grasses. The next spring it again has to depend upon the barberry to get started. The removal of the common barberry, therefore, deprives the rust of its principal ally and checks its spread. Every time a barberry bush is removed one of the props is knocked out from under the rust.

Russian Sunflowers for Silage on Dry Lands

NEW FACTS DEVELOPED IN TESTS ON COLORADO PLAINS.

HAVE we been on the wrong track in advising the cutting of giant sunflowers for ensilage when the plants are about half in bloom? Should they be allowed to reach maturity for best results as silage? These questions come up following two years of tests by farmers in the Bennett community (Colorado plains region; altitude 5,400 feet; rainfall average 16 inches per annum). Several farmers in that section have tried sunflowers and their experience brings out some important points. Thin planting is essential under dry land conditions, if the sunflowers are to attain proper growth and maturity; and late cutting, after the seeds are beginning to harden and the stems appear dry, makes a better quality of silage than when cut in the early blossom stage. Another point that should be mentioned is that they do best under level planting; unlike corn, they do not seem to start well if listed in.

F. W. Haupert's observations regarding giant sunflowers were given the writer recently at the Bennett community fair, and they throw new light on a subject about which many farmers are seeking definite facts. Mr. Haupert relates his experience as follows:

"We are finding out several things about sunflowers. One thing we learn is that acclimated seed of the proper variety is just as important with sunflowers as with corn. I bought some black Russian seed and planted it, but the cutworms ate the tender young plants and I had to re-plant with another variety. In the meantime, however, I had given some of the black Russian seed to a neighbor. The cutworms didn't get his plants and they shot up rapidly and made a fine crop of sunflowers with rich, heavy seed heads. The other seed that I got was of a slow maturing variety, that never did ripen. I have noticed in the various trials around here a difference of as much as 20 to 30 days in the period of growth of the different varieties. That is the first point we need to bear in mind—the early maturing type and, if possible, a home-grown, acclimated seed.

"The next point is method of planting. We find that the sunflowers do not like the shaded lister rows. They do best under level planting where they get the full benefit of sunshine and warmth right from the start. Cutworms will pass up corn for sunflowers and we can't kill out the cutworms as well in the lister furrows as we can on the top-planted crop.

"Next is the matter of thick or thin planting. We all know, or should know, what is necessary under limited moisture with corn. Absolutely the same thing holds good with sunflowers. The thin stand thrives and gives us a well developed plant at maturity. The thick stand gives us spindling, undersized plants that are not any better for feed than close planted corn. Some fields I have seen show the thick planted sunflowers to have reached a height of 4 or 5 feet and there they stopped, while fields attacked by cutworms that eliminated a lot of plants, finally developed into a better ensilage crop, both quality and tonnage considered.

"Perhaps the most important point developed by the tests here at Bennett and Strasburg is that regarding the time of cutting for best results in feeding to our dairy cattle. Last season I put up some sunflowers that were dead ripe and I sent some of the silage to the college at Fort Collins and they said they would not have believed it possible to get such fine silage from the ripe plants. One of my neighbors let his sunflowers get dead ripe this year. The stalks were brown and the seed heads were hardening. They had reached the stage we generally allow our corn to get when we say it is well dented. He wanted to know what I thought of putting the sunflowers into the silo and I said 'Let's go ahead and do it.' He agreed, and after the job was finished the juice ran from the silo. It was surprising what an amount of sap was contained in the apparently dry stalks.

"Now, we are of the opinion here, and I think we are right about it, that our matured sunflower silage is a lot better than the watery, washy stuff we would get by cutting the plants when only about half in bloom, and to get the kind of a crop we want the spacing must not be closer than 30 inches in the row. That sort of a field will stand a dry spell even better than corn. We are satisfied on the score of drouth resistance, but we must give our sunflowers the same chance we give corn.

"Now, why plant any sunflowers in as good a corn section as this? Because they will mature for silage purposes in 75 to 80 days. About the best we can expect of corn is 90 days, so we need both crops.

"I am trying this fall to learn something of the relative value of corn and sunflowers for my Milking Shorthorns. I have some pure corn silage, then some mixed corn and sunflowers, and a section of pure sunflowers in the same silo. I can, therefore, note the effect of the different feeds on milk flow and condition of my stock as the changes are made."—A. T. S.

Saved Crops From Hoppers.

Savings of crops valued at $205,329 are estimated to have resulted from the season's campaign of grasshopper destruction in Idaho county, Idaho, under direction of the County Farm Bureau. There were 2,085 acres of grasshoppers exterminated. One acre of hoppers, it is estimated, would destroy 10 acres of grain, hay or garden truck, so that the area of crops saved was 20,850 acres. At a valuation of $10 per acre for crops saved, the gross saving was $208,500. The cost of getting bran mash to the farmers who co-operated with the farm bureau in the campaign, was $3,121, not including value of the farmers' time in mixing and distributing the poison.

Which Is Best, Fixed or Movable Hog House?

MERITS OF TWO TYPES DISCUSSED FROM BREEDER'S STANDPOINT

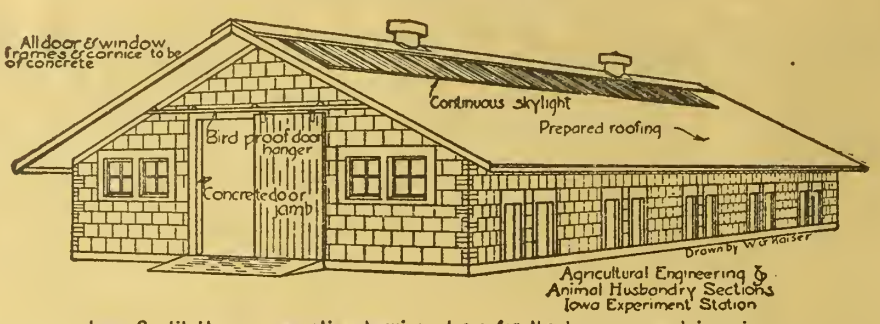
G. H. CONN, D. V. M.

ONE of the most important factors entering into the successful raising of swine is the proper housing of them. There are many reasons why this is so important. The health of the herd is often maintained largely through good housing and not infrequently the gains are materially influenced in this way.

There are desirable and undesirable features in both the large stationary house and the small movable one. The best type for the hog owner to select will depend upon a number of things. The houses mentioned here are for breeding animals only and not for hogs that are being fed for the market. Some of the things that will influence the owner in the selection of the proper type of hog house for his herd are the size of the herd, the amount of labor he can secure, the amount of land available for yards, the climatic conditions, the season at which it is desired to have the sows farrowed, and the purpose for which they are being raised.

For the average farmer who is raising hogs for market, the large community house is no doubt much the cheaper for his brood sows, for in this way he can keep a number of sows under the same roof and cut down his labor in caring for them, such as feeding, bedding, watering, and the like. One man can take care of many more sows with this type of house than he can with the other. The feed can be stored in the large house and the water can be piped to it also. A litter and feed carrier can be installed which will greatly add to the convenience of the operation.

However, with this type of house the danger of disease is greater and also the spread of disease as well as lice and other parasites is greatly favored and much harder to control. The danger from over-crowding is increased, due to the fact that the building is often made too small to accommodate the number of animals that is afterwards put in them. It is impossible to change the location of the building when once the yards become infested or when they become muddy.



Iowa Sunlit House perspective drawing, doors for the hogs arranged in pairs.

Movable houses are of two kinds, one known as the A-type and the other as the gable-roof type. Each of these has some advantages over the other, but either type has advantages over the house that cannot be moved. With the movable house the hogs can usually be supplied with more range; the house can be moved when another location seems to be more desirable; it lessens the spread of disease or of parasites among the herd; and as a rule the hogs get more exercise.

There are several disadvantages, however, that are very important to the average farmer. With the movable house it requires much more labor to care for the hogs at feeding time, as the feed cannot be stored, but must be hauled to them, and possibly also the water. If the sows farrow early it increases the risk and the dangers to attempt to keep many houses warm. It also increases the risk to the sow, as one cannot give the sows such close attention when they are so widely scattered.

In the construction of either type of house the same features are aimed at. The movable house is much the cheaper, costing only from one-half to three-fourths as much per hog as does the community house. It should be remembered, however, that the fixed type of house outlasts the movable type by a considerable time.

In building the community house the important things to be considered are sunlight, ventilation, warmth, plenty of room, dryness, convenience, cost of maintenance, and durability. The type of house designed by the Iowa State College and known as the Iowa Sunlit Hog House fills these requirements very well. The sunlight and ventilation in this type of house are taken care of by two rows of sash, one on either side of the peak of the roof, and so arranged that they can be raised or lowered at will, which assists very materially in ventilating the building. This arrangement of windows will admit the light to every portion of the house at some time in the day. Such a building can be kept warm, if need be, with artificial heat; but under average conditions it can be well ventilated and dry, yet warm enough for the hogs at all times except very early farrowing.

This style of house is usually made of concrete or hollow tile, and when these are properly assembled, dryness and warmth are assured. The use of concrete and tile in the construction of this house has another advantage which is of very great importance, namely: the house can be quickly, easily and cheaply cleaned and thoroughly disinfected. Such a hog house put up in the proper manner will be very durable and will have a low cost of maintenance. It is possible to have better success with very early litters with this house than it is with the movable type, in cold weather especially.

Many of the points that we have emphasized so strongly in the community house need not have so much consideration in the movable one, since the hogs are not kept under exactly the same conditions. Sunlight can be provided very well in the movable house by the use of hinged doors on the sides, roof, or ends; and they can be supplied with sash under the doors when they are in the roof, so that on sunshiny days while the weather is still too cold to expose the pigs to the weather they can admit the sunlight. Some ventilation can be secured in the gable, but as the door always stands open and the hogs are upon a dry floor and not crowded, the matter of ventilation is not so important. They are not as warm, possibly, as the community house, but under ordinary conditions hogs will not suffer from the cold in them to any dangerous degree. They should be dry if they are properly constructed and placed in a good location. They can be easily and quickly moved, and when one location becomes undesirable another can be secured at once.

Of the two movable types the A-type is the cheaper and the easier to construct. It does not furnish as much shade during very hot weather as does the gable-roof type. This is a very important consideration in climates where the summers are hot.

The best type of house for the hog breeder will depend largely upon local conditions which are known best to himself. What would be suitable to one community might not be so good for another, hence no hard and fast rules can be laid down, but a little serious thought will enable the average owner and breeder to determine which type of house is best adapted to the local conditions.

Farmers' Water Rights Explained by an Expert

DIGEST OF LAWS AND RULES IN WESTERN IRRIGATION DISTRICTS.

ARTICLE I.

R. P. TEELE, Irrigation Economist, U. S. Department of Agriculture.

THOUGH the irrigation laws of the western states differ in many respects, they agree in several particulars:

The use of streams and other surface water supplies for irrigation and like purposes is subject to control by the states.

Water may be taken from streams and other sources for irrigation and other beneficial uses, but only in accordance with state laws. This is known as the right of "appropriation."

Actual use of the water is a necessary step in the holding of a right and when the use ceases the right is abandoned or forfeited. That is, no one can acquire a right to water and hold it without actually using the water, either immediately or within a reasonable time thereafter. This is known as the doctrine of "beneficial use."

Among users from the same source, the "first in time is the first in right." When there is not enough water for all, the rights are supplied, to the extent of the supply available, in the order of the dates on which they were acquired. This is known as the doctrine of "priority." Exceptions to this rule exist in a few of the states where, in cases of unusual scarcity, the available water is apportioned among the users either by the state officers or by the courts.

The date of a right is fixed by the time of taking the first step to acquire it, rather than by the time of putting the water to use. This is known as the doctrine of "relation" as the rights relate back to date of beginning.

Some of the western states recognize also riparian rights. A riparian right is a right to use water from a stream which flows through or borders the land to which the right belongs, arising from the fact that the land borders the stream, not from appropriation or use and "use does not create or disuse destroy" the right. Where riparian rights are recognized, each owner of riparian land has a right to make any reasonable use of the water which will not interfere with a like reasonable use of it by all the others. Hence, the value of a right depends very largely on other rights to the same source.

Even in those states where riparian rights are recognized (California, Nebraska, Oregon, Texas, and Washington), appropriation rights are recognized also, and most of the irrigating is done under appropriation rights.

Acquirement of Rights.

In each of the arid or semiarid states, except Kansas and Montana, the acquirement of rights to water direct from surface sources is under the control of state officials, and one wishing to get such a right must follow the procedure prescribed by law. The procedure is much the same in all states and consists in (1) making application to some state official or board on forms supplied by the state, giving full information as to plans for irrigation works and use of water; (2) carrying out of the plans as approved by the state; (3) submitting proof of completion of works and use of water; and (4) granting of certificate or license by the state, defining the right as to quantity of water, use to be made of water, and time during which it may be used.

The official or board to which application should be made in each of the states is shown herewith:

Arizona—State water commissioner, Phoenix.

California—State water commission, San Francisco.

Colorado—State engineer, Denver.

Idaho—State commissioner of reclamation, Boise.

Nebraska—State engineer, Lincoln.

Nevada—State engineer, Carson City.

New Mexico—State engineer, Santa Fe.

North Dakota—State engineer, Bismarck.

Oklahoma—State engineer, Oklahoma City.

Oregon—State engineer, Salem.

South Dakota—State engineer, Pierre.

Texas—State board of water engineers, Austin.

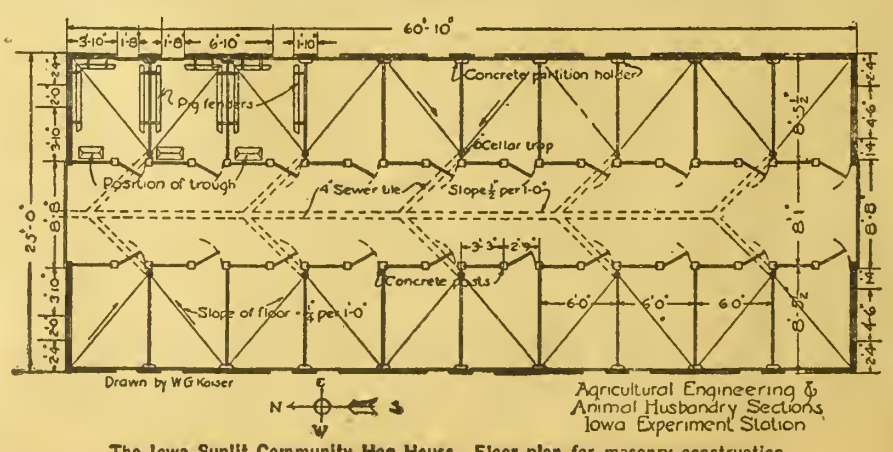
Utah—State engineer, Salt Lake City.

Washington—State hydraulic engineer, Olympia.

Wyoming—State engineer, Cheyenne.

In Kansas and Montana it is required that one wishing to acquire a water right shall post at the point of diversion, and record with the county clerk, a notice showing the intention to take water, the amount to be taken, and the use to be made of it. The proposed work must begin within a reasonable time and must be prosecuted diligently to completion, and the water must be put to a "beneficial use." In Montana, if a court has defined previously existing rights to water from a source from which one proposes to take water, application for a right to divert the water must be presented to the court which defined the existing rights. In each of the two states the law specifies what must be shown in the notice posted, and anyone proposing to obtain a right direct from a stream or other surface source should consult the law of the state in which the land to be irrigated is located. In the states given above, application to the state engineer, or the board named, will bring blanks and full instructions. The point to be kept in mind is that title to water is fully as important as title to land, and it should receive the same careful attention. However, very few will have occasion to acquire rights direct from streams, and the subject need not be discussed at length.

Although few farmers will have occasion to acquire rights direct from streams, many will acquire them by purchasing land served by such rights, and rights to water from canals relate back to the rights from the streams or other sources from which the water is taken, and one can judge of the value of rights from canals only by examining their rights to water from the original source. A right to water from a canal can be no better than the right under which the canal gets its supply.



The Iowa Sunlit Community Hog House. Floor plan for masonry construction.

Destroy and burn weed seed this fall and it won't get a chance to grow next spring.

Lester Jaynes, Pest Inspector, Mesa County, Colo., showing orchardists some fine points in pruning.

Scientific Orchard Pruning.

No; the central figure in the accompanying cut, the man with the pruning saw and the pruning shears, is not William H. Taft, but Lester Jaynes, the pest inspector of Mesa county. Many years ago I heard Secretary of War Bonaparte make the statement at a Yale alumni dinner that Mr. Taft was the politest man he had ever known. "For example," he said, "I saw Mr. Taft only the other day get up in a crowded street car and give his seat to three ladies."

Mr. Jaynes could, and would, under like circumstances, be equally polite. Today, however, Mr. Jaynes is specializing, not so much in politeness, as in hobbies which he rides over the objections and prejudices of the growers with all the ease and fearlessness and assurance of the, alas, fast disappearing cowboy. He always keeps on hand, for instant use, a goodly stock of these hobbies. But these hobbies are all first-class hobbies, highly pedigreed and well groomed, worthy to be introduced and encouraged on every orchard. His special hobby at the present time, the one which for months he has been riding the hardest, is called Intelligent Pruning. During these months he has been giving a series of demonstrations for the purpose of showing what this particularly mettlesome hobby will do for the grower who will take the pains to learn to ride the same with care and discretion.

Early in the season Mr. Jaynes gave pruning demonstrations at Redlands, March 8; Grand Junction, March 15 and 18; Clifton, March 17; Fruitvale, March 19; Highland Park, March 23; Clifton, March 24; Palisades, March 25.

So great was Mr. Jaynes' confidence in himself and in his method of pruning that he held the demonstration of March 15 on his own orchard north of Grand Junction, where the growers might not only watch him while at work, but see into what shape he had brought his trees by the same method of pruning in the past. The demonstration of March 18 was held in the Burgess orchard. This was given for the benefit and enlightenment of the Smith-Hughes class in agriculture in the Grand Junction high school.

The demonstration of March 24 was, as it were, a case of "spontaneous combustion," but I will let Mr. Jaynes tell the story as nearly as possible in his own words: "I was on that date riding along in my car on the Midland trail, headed for the upper end of the Valley; but as I was passing by Mr. ———'s orchard, I saw a man pruning who evidently thought he was pruning the right way, but whose work was so glaringly faulty that I simply could not get by without stopping and asking for the privilege of pruning one or two trees for him. Now, what was that man doing? Simply this and nothing more: He was standing on the ground and with his long pruning shears was cutting off all the branches and twigs that he could reach. With his consent I pruned one or two trees to show him how I should prune such trees. I do not know whether I got the idea across; but it was at any rate gratifying to have twelve men who were working on a nearby ditch drop their shovels and come in to watch me at work. As I rode away I felt that perhaps after all I had done some good by the demonstration held, as it were, on the spur of the moment."

The attendance at these demonstrations should have been larger. Some of these demonstrations, however, were not advertised. At such demonstrations the number in attendance was of course small; but even where the date had been announced the attendance was below what the demonstrator had a right to expect. Some growers, however, seem to think they know all there is to be known about the subject of pruning. Have they not been in the Valley, ten, fifteen, or twenty years? Have they not been raising fruit during all these years? Have they not pruned their trees all these years in the most approved way?

Such growers regard it as a piece of unpardonable presumption for any one, especially for a fellow-grower, however successful the latter may be, to suggest that they might be able to learn anything new about this all-important subject. Such growers were at these pruning demonstrations conspicuous by their absence. It is to be hoped that the sons of a few such growers were present at the demonstration given to the members of the High school class in agriculture; for it is true that in agriculture in general and in horticulture in particular the only way to reach some folks is through their children. There are, however, many good pruners in the Valley, men who prune as intelligently as does Mr. Jaynes himself. A few prune their trees even to a better purpose.

Mr. Jaynes says there are three reasons, and only three, so far as he knows, why growers should prune intelligently: (1) for convenience in spraying; (2) for convenience in picking, and (3) for the sake of apples of quality. Quality, not quantity, is the aim of every successful and progressive grower; but he will not realize his aim if his trees are so full of wood and brush that the spray can not get on the apples. Hence the first thing to do is to cut out the interfering limbs and to open up the centers and thereby give the spray material a chance. The next step is to cut off side limbs, even a main limb if necessary, so as to make it possible to spray the tree from within.

The tree is at the same time put into shape for convenience in picking. If the picking ladder is placed under a projecting limb, apples may be knocked off and bruised; but if the tree has been opened up properly, the ladder can be placed between two projecting limbs with the supporting part of the ladder thrown into the center, thereby minimizing the danger of knocking off apples. Mr. Jaynes, moreover, says: "Prune, not for the day, but for the future. Have a definite plan and stick to it; but shape and reshape your trees always with a view to the permanent shape which they must ultimately have if they are to bear apples of a high quality."—A. M. WILSON, Clifton, Colo.

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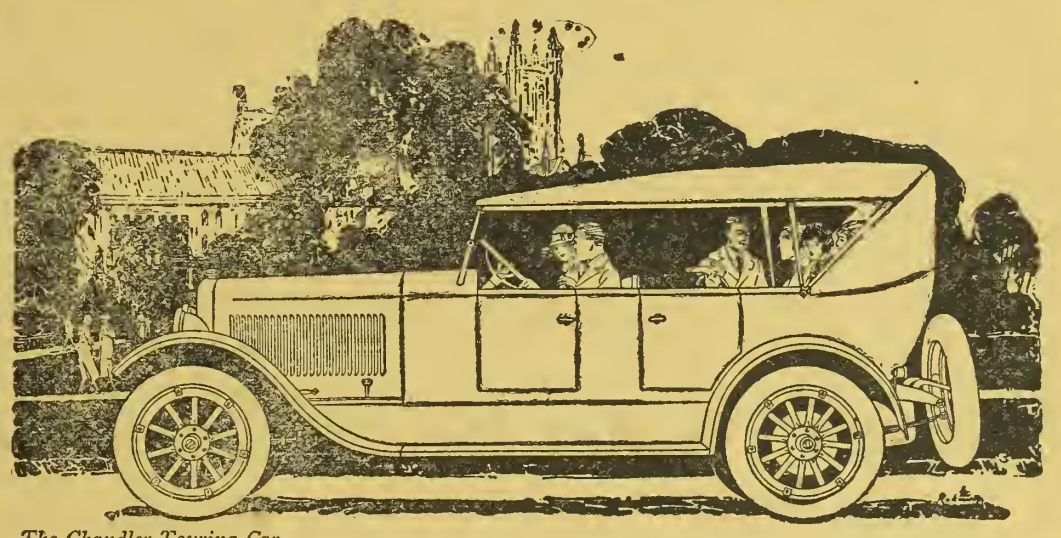

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Why Farmers Burn Corn.

With corn selling around $15 a ton Nebraska farmers—so we are informed by press dispatches—expect to use some of their corn for fuel. Coal costs $12 to $15 a ton without reckoning the charge for hauling from town. We have no means of finding out to what extent corn will be burned, but there is no doubt of the fact that some farmers who have a surplus beyond needs for feeding will consume it for fuel. And this does not apply to Nebraska alone. Years ago it was a common thing in Kansas and Nebraska for farmers to burn corn. It was cheaper than any fuel they could buy and corn was a drug on the market. On the prairies fuel is the most expensive thing that the farmer has to buy; and in many sections, not so remote from the mines, coal shortages are of almost annual occurrence. The problem is not so much the low price of corn as the excessive price and inadequate distribution of coal.

The eastern Colorado plains country is devoid of natural fuel, either wood or coal, but a hundred to two hundred miles away, in the foothills and mountains, there is a supply if bituminous and lignite coal sufficient to provide the the state with heat for six hundred to a thousand years.

There is a strong suspicion that coal operators are more interested in immediate profits than in the development of future markets. Control of output on the season to season plan does not induce opening of new mines. Coal is a convenient and satisfactory fuel, but many a farm home on the plains is poorly heated because of the high price of this fuel. Many a home would be supplied with modern heating devices if the fuel cost did not discourage the investment. Farmers have been quick to adopt the automobile, the tractor, the truck; not a few of them are lighting their homes electrically and running household devices with a home electrical plant. Manufacturers have taken advantage of this market by bringing their product within reach of the farmer's purse.

The coal operator, the dealer and the transportation company that hauls the coal seem to be in a conspiracy to restrict a market that would be eager to buy and consume in large quantities if prices were reasonable. "All that the triffic will bear" is still the coal man's motto. And he suffers from lack of volume while the farmer is sometimes forced to burn food products.

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Wives as Farm Hands.

In these times of scarcity of farm labor and the high cost of such labor, women are playing their part in getting crops harvested. One does not see so many women on mowers and other riding implements as was the case in the great drive for more food during the war, but on many farms the wife continues to take the part of a "hand." We have made it a point to inquire as to the efficiency of such labor and the answers that have come from farmers are: "Worth twice as much as the ordinary farm hand."

One may make allowances for family pride and devotion and still grant the truth of the statement, for results tell the story. From Logan County, Colo., comes a practical example of how the resourceful farm woman is helping run the farm. In this particular case it was, in fact, a woman and her daughter who were taking the place of two extra harvest laborers in the busiest season and—note this—carrying the usual harvest-time load of household duties as well. How did they do it?

The farmer and his son-in-law were handling the binder in cutting wheat. The binder was drawn by a tractor and the tractor handled by the farmer's wife and daughter. Taking care of the house was a 10-year-old girl. Dinner time came and, as it happened, a home demonstration agent was invited to stay for the meal. She had been wondering how it would be managed when the presiding genius of the household had worked all morning in the harvest field. In less time than it takes to tell it the pressure cooker was at work heating up and bringing out the juices and quality in meats that had been canned during the previous winter. Vegetables were ready for service with the meat in a jiffy and the harvest gang sat down to a steaming hot meal that satisfied, and insured an afternoon of sustained effort. At the usual hour all hands were back in the fields to proceed with the wheat harvest. The home demonstration agent proceeded on her way with the feeling that lessons in household economy were here being practically applied.

Please do not understand this to be an argument for woman labor on the farm, but look at it sensibly and ask yourself whether it isn't wise to simplify household duties and leave the wife free to help in field work if she likes it? Outdoor labor is often preferred to the confining household duties and if there is one time above all others when household labor needs to be simplified it is in the harvest season. It is a time dreaded by the farm women, but organization and planning, coupled with possession of devices and tricks that cut the labor and time of getting and serving meals, has solved the problem for many. In this particular case it has done more; it has saved the farmer an outlay of $6 to $7 a day for extra hands.

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Sowing Weed Seeds.

In order to fill in a poor stand of winter wheat a farmer in Adams county, Colorado, decided last spring to supplement his planting with some Macaroni spring wheat. He went to the elevator at his nearest trading point and bought a lot of seed in bulk. It was sold for "not cleaned seed," without guaranty as to purity or germination. While he was drilling this seed a visitor on the farm opened the drill box to examine the wheat. He took out a pound sample and sent it to the State Seed Laboratory at Fort Collins, with a request for a test as to germination and purity. It will be interesting news for this farmer to learn what he bought at the elevator. In percentages the story is as follows: Purity, 90.21 per cent; percentage of noxious weed seeds, 0.01; percentage of other weed seeds, 0.46; percentage of crop seeds other than weeds, 0.28; percentage of inert matter, 9.04.

The noxious weed seeds were those of wild mustard, a serious weed pest, of which there were 18 seeds to the pound. Other weeds included the following: Narrow-leaved goosefoot, Russian thistle, wild sunflower, hedge mustard, sweet clover, thistle, large bracted vervain, black bindweed, gum weed, blue lettuce, thelesperma and drop seed. Grains and grasses included oats, barley, other wheat varieties and redtop. There was a total of 1,870 weed seeds to the pound. If the sowing was at the rate of 40 pounds to the acre, this would mean about 75,000 weed seeds per acre sown, which is a high price to pay for cheap seed.

Incidentally, the report mentioned the fact that there was "much smut present." The inert matter was chaff and dirt—almost 10 per cent. But there is consolation on that point—inert matter will not grow. It was a "dead" loss and not the kind of a loss that the farmer inflicted on himself through the planting of thirteen varieties of weeds. And the transaction was a loss for the elevator man. This kind of seed brings its harvest of off-grade wheat, and while the farmer stands the dockage, the elevator man and the miller are not looking for poor grade grain either.

What is the remedy? Colorado has a state seed law which requires that all field seeds be properly labeled as to purity and germination, so that a farmer may see what he buys. If he chooses to buy something that is off grade he is not only throwing money away, but doing himself and his neighbors permanent damage by increasing weed infestation, lowering the quality of the grain and cutting down yields. If the poor seed is not of his own choosing and the elevator isn't handling a product that is of good quality, it is a matter for the Farm Bureau to take up.

If the seed dealer or the elevator man sell unlabeled seed, or seek in any way to dodge the law, or deceive the farmer, the remedy is in the application of the penal provisions of that law. Its enforcement lies with the Agricultural College at Fort Collins. Prof. A. K. Peitersen, Botanist, is in charge of the laboratory. During the next month or two the farmer will be planning his crops for 1921. Nothing is quite so important as to start with good seed, and no one is to blame if we fail to avail ourselves of the opportunities provided by the state for protection against fraud.

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Agricultural Education.

Agriculture is a highly specialized business that requires scientific training if success is desired. This is not denying that many farmers succeed at it financially without special training, but those who do must admit that the way would have been easier if their opportunities for studying the theory of agriculture had been greater. Many farmers do not realize that the day of haphazard farming is past, but in one way or another they are being brought face to face with the fact that modern conditions require scientific methods of production and marketing. If this is borne in upon the adult farmer today, what about our sons to whom we look as our successors on the farms and ranches tomorrow?

Agricultural education has been available for more than half a century through the land grant colleges. Lately its benefits are being extended more generally through the rural and even the city schools. We find an increasing number of city-bred boys and girls attending agricultural schools. Here and there we find city-bred men and women leaving the colleges with master's degrees and taking places of leadership in rural life. The preponderance of well trained agriculturists is still in favor of the country, but how long will the balance hold? It is something worth thinking about.

Make the application personal. Have you a son, or sons and daughters, for whom you are planning a future in rural life? Do you, as a practical and successful farmer, want them to learn by the devious and costly way of experience, as you did, and perhaps lose out in the battle against trained competition from the city home? Maybe you don't like that question. It is a practical one. Ten or fifteen years from now the individual now in the period of elementary education will find farming a real profession, with the untrained, improperly educated farmer dropping to the rear and the individual who prepared himself professionally, whether he grew up in town or on the farm, taking the leadership and the rewards. Give the farm boy and girl a fair chance.

International Farm Congress.

The International Farm Congress will hold its fifteenth annual sessions at Kansas City, December 9, 10 and 11. The program will include discussions on marketing, production, tariff protection, transportation, immigration, legislation, reclamation, education, farm home life and farm organization.

Much interest attaches to the approaching session, as it is planned to have the congress adopt a declaration of principles setting forth its attitude upon a number of questions vital to agriculture, following months and years of study, observation and research work. It is expected that this declaration will embody the dominant views of the farmers of America and call to general attention the progress, the outlook and the requirements of agriculture and its relation to other branches of industry.

Tips From the Bulletins

Vetches is the title of Farmers' Bulletin 515, U. S. Department of Agriculture, just issued for free distribution. The authors are C. V. Piper, Agrostologist, in charge of forage crop investigations, and Roland McKee, Assistant Agrostologist. There is a chapter on "Vetch Seed and Its Impurities," by F. H. Hillman.

Vetches make excellent feed, either green or as hay, and are also exceedingly useful as cover and green manure crops. They are usually seeded with enough small grain to make half a stand. Sixty pounds of common vetch or 30 pounds of hairy vetch seed are enough for one acre. Inoculation is necessary for the successful growth of vetches and must be supplied where they are grown for the first time.

* * *

Bulletin No. 883, "Experiments with Flax on Breaking," has just been issued under date of September 20, 1920, by the Department of Agriculture. The author is Chas. H. Clark, formerly Assistant Agronomist in Charge of Flax Investigations in the Bureau of Plant Industry.

If the preparation of the land has been thorough and a good seed bed is obtained, 20 pounds of flax to the acre seems to be a sufficiently heavy rate of seeding. Heavier seeding may be preferable under certain conditions, such as a seed bed so dry that germination is uncertain. The results obtained do not indicate much advantage in heavier seeding, however, and the high price of seed flax discourages the practice.

Early seeding is recommended on breaking. The land should not be left to dry out after the seed bed is prepared. It is desirable to follow the plow, disk harrow, or packer immediately with the drill if breaking is done in the spring. Land backset the previous fall should be disked before seeding in order to kill weed growth and improve the seed bed. The best results can be expected from seedings made from May 1 to June 10.

* * *

"A Method of Analyzing the Farm Business," Farmers' Bulletin 1139, is a new bulletin which may be had from the United States Department of Agriculture, Washington, D. C. The authors of this bulletin are H. M. Dixon, Assistant Agriculturist, and H. W. Hawthorne, Scientific Assistant.

A farm to be successful should maintain its productivity and should return a reasonable wage for the labor of the farmer and his family, after paying farm expenses and deducting a fair rate of interest on the investment. Four important factors in the success of a farm business are size of business, yield of crops, returns from livestock, and efficiency in the use of labor.

What is the size of your farm business? What part of your investment is in land, buildings, livestock, machinery, and other capital? Is your crop area properly proportioned to the various crops with regard to profits? With regard to labor distribution?

How do your crop yields compare with the average yields of the locality?

What classes of livestock return you the most money?

How do the returns from your livestock compare with the average of your locality?

How many acres of crops do you raise per man? Per horse?

Is your farm so organized that each part of the business is yielding satisfactory returns?

How much have you left for your own labor, after deducting from your total receipts your year's expenses, value of labor performed by members of your family, and interest on your investment?

How much does the farm contribute toward your family living?

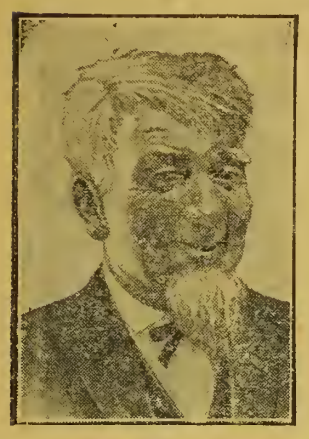
These are some of the questions answered in the bulletin, which outlines a system of analyzing the farm business and thus locate the strong and weak points in his plan of management.

Record your year's financial transactions in the blanks provided in this bulletin and apply the tests of farm efficiency to your own business.

It is reported that the Indians on the Navajo reservation are returning to their work of making Navajo blankets. The high price of wool during the past few years has had a tendency to discourage blanket weaving, but this season, with wool prices low, they are again making blankets.

Comment by Farmer Putnam

OUR MISSOURI FRIEND TELLS OF HIS VISIT TO THE COMMUNITY FAIR AT BENNETT.



THEM folks over in the Bennett neighborhood has got the right idee about corn fur dry lands. I was over thar to the community fair and I seen some mighty good corn. It was too late fur much other stuff besides corn and punkins and them two things was in the majority in the men's exhibits. But the winmin had the biggest show of the two. I don't hardly know why it is, but every time I go to Bennett fur some of their doin's why the wimmin has the biggest hand in it and they has the least to say—in publick. The men does the talkin' and the wimmin does the work. When you see the exhibits in a community fair why it comes out who's the leaders in the community, men or wimmin. I told some of the ladies when I was a-eatin' my lunch that I'd say somethin' nice about 'em in the magazine and this is it. I hope they clip this out and put it in their scrapbooks and read it over ag'in next fall before the fair, as a gentle reminder that Farmer Putnam is headed out their way.

Now what I started to do was to say somethin' about corn, but thinkin' about the caffeytaria lunch made me furgit the corn. Them farmers is tryin' to standardize on variety of corn and Minnesota 13 has got the call. Their neighborhood is about 5,500 feet, just a little higher'n the Platte valley around Denver, and they has about 16 inches rainfall that comes in spots. Fred Haupert has got the government rain gauge on his farm, but the darn storms don't seem to realize it and lots of times they sneak around over to Gordon's, or on up to Evanses, or over toward Strasburg, and the government don't git no rainfall.

In that kind of a country a farmer has got to be fixed fur dry weather by storin' his moister the winter before he plants; or the summer before, if he is tryin' to raise much wheat. Now it used to be believed that corn wouldn't do good in that kind of a country, because it wasn't enough drouth resistant, but the Bennett farmers has found out different. It's the safest silage crop they kin raise and they raise a lot of it extry too, fur shuckin' out and feedin' as grain. Onct in a while spring comes late; that is, spring starts about the middle of May and then gits sidetracked a few days by some winter weather that's been delayed somewheres in Manitoby, and comes on down here with a late freeze. Ag'in it sometimes happens that the wires gits crossed and a frost blows over from the snowy range along about the last of August or early in September to stop the crops from growin'. Then another habit the weather has is of furgittin' to rain much in June after foolin' along kind-a wet and muddy in May. So all of them things considered, why the Bennett farmer ain't got no snap. He's got to do a little figgerin' if he's to come out ahead of the weather.

A feller named Turner over near Bennett got some Minnesota 13 seed from up in Minnesota several years ago and it was from his fields that Boulder county got their fust seed which started that county in raisin' pedigreed corn. Now Bennett is takin' it up and four or five farmers is raisin' pedigreed seed of Minnesota 13, but they're expectin' to get mighty little of it go out of the county or community. You cain't say that they draw the county line, because Bennett is settin' right clost to the line and some Bennett farmers lives in Arapahoe and some in Adams county. One of the things I found out at the community fair was that Wayne Hess, belongin' to the corn club in Arapahoe county, sent some Minnesota 13 to the Adams county fair in Brighton and won the blue ribbon; then he went to Strasburg in his own county and got three prizes with the same corn and then he wanted to enter it in the Bennett community fair, but they wouldn't let him show the same ten ears, so he had to pick some more. He done it and by hookey if he didn't win the blue ribbon ag'in!

Did it make them old farmers sore? Nary a bit; they said, "Go to it Wayne, you're doin' the right thing by raisin' good corn."

Now after the fair the County Agents Kidder and Vanderlip was to help pick out the ears in the field that looked best to save fur seed and later them ears is a-goin' to be tested and if they kin show they got pep why then they save 'em fur pedigreed seed.

Now it seems kind a queer that them Colorado dry land districts raises such good corn and over in Kansas they say they kin do better with them kaafer corns. Well the reason is that we don't have them hot winds right in tasselin' time. Corn don't need no more water then kaafer of the same size, and as fur hot nights, why it depends on what you mean. If you're a-talkin' about warm air above ground why then we don't have hot nights, but it ain't the cool AIR that bothers the corn, it's the cool GROUND. When we git the ground warmed up onct it never cools ag'in till fall. I know because the night me and Jake Robertson founded the town of Robertsonville the only warm place I could find was down on the ground. Up in the car the breeze was blowin' cold.

Our cool nights does somethin' else fur corn that don't happen over in central Kansas and that is, it gives the leaves a chanct to inhale some refreshin' air instead of warm air that feels like it's drove outen the devil's oven near Chickasha, Okla. So our doctrine fur corn on the dry lands is, keep its feet warm and comfortable and its head cool. That'll do fur humans too.

I wish you folks could see the Bennett school building. It's only been about three years ago that they still had a little two-room frame shack; then they put up a one-story brick school, with a community room in the basement, and now they had to purty near double the size and put a top story on so's they could have a high school. Then they centralized the district and now they're a-bringin' children by auto bus from all over. The district is 18 miles long and a bus starts out in the mornin' pickin' up children, leavin' the little ones at two district schools on the way and takin' the older ones in to Bennett fur the high school. The district south of 'em in Arapahoe county said they wanted to have a good school fur their children, so they furnish a bus and pay tuition to go to school in Adams county. Some of the folks that lives in our towns don't have no idee how much progress is bein' made out in the country with them new schools. It's got so nowadays with club work and such that the young people is demandin' eddication and the old folks ain't a-kickin' on payin' fur it.

They got a live man in charge of their school—Prof. Johnson. He believes in usin' the school plant fur community gatherings and that's where they had the community fair—in the big basement room in which they kin dance, or hold church meetin', accordin' to what denomination they belongs to.

Now I got a letter which I want you folks to read. It's from Mr. Leonard, Secretary of the State Farm Burro:

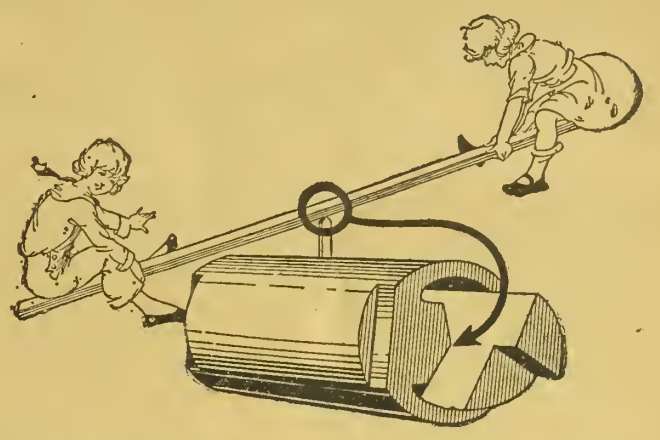
Mr. Thomas Jefferson Putnam:

Dear Tom—I cannot forget the fine time we had together out at Salt Lake this past summer. I did not know what a privilege I had been missing during the past forty years when I wasn't acquainted with your homely old mug. In spite of your high elevated name for which you aren't to blame you are one of the common folks that Mr. Lincoln once said that God loved because there were so many of them. I think all of us farmers are in that class. You know the sun has spoiled my fair complexion about as bad as it has yours and I'm not sure but what the signs of hard work look harder inside of my hands than in yours.

Now, Tom, you know we talked a lot about the Farm Bureau when we went out west together. Since you were out there and saw and heard the big Farm Bureau men I've been expecting to hear some unusual things about you. On account of this big opportunity I consider you now a man of great influence. My neighbors are all talking about you and wondering why you don't join the Farm Bureau and help put over a lot of good things to help the farmers. They say you are a man of capacity now and they are waiting to see what you do before they join the Farm Bureau.

The idea Tom, as it appears to me, is that the farmers all over Colorado are waiting for you to join. A man like you joining is worth a thousand, because everybody will flock to get in when they find you are in the game. It will make

(Turn to Page 11.)



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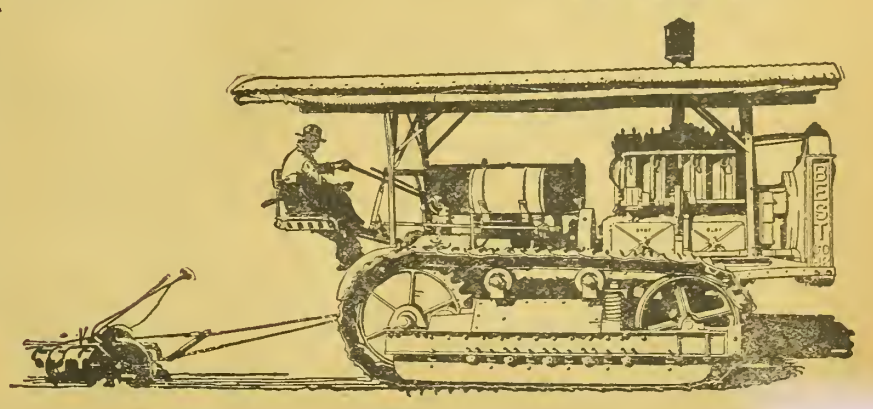

How I Make Big Money Out of "Ornery" Horses

By J. A. BUTLER

ABOUT two years ago I witnessed up in New York State an exhibition of horse-training that opened my eyes. A man by the name of Mackley took a devil of a mean, vicious mare that hadn't been harnessed for seven months and in a few days had her gentle enough for a school girl to drive. Mackley had taken the mare off the owner's hands for $50 and just ten days after sold her for $175.00. A clear profit of $125.00 in ten days!

That started me investigating. I learned that Mackley had simply used the methods introduced by the famous horse trainer, Jesse Beery. Beery, I learned, used to go about the country giving wonderful exhibitions in colt-breaking and horse-training; but realizing that he could accomplish more by teaching his methods by mail, had given up his exhibition work to spread his horse-training secrets by mail-instruction. Mackley had studied Beery's Course in his spare time and in a few months was able to accomplish magical results with green colts and horses with bad habits.

Other Successes

Mackley's work showed me a way to make some nice money and I determined to take Prof. Beery's Course in horse-training—but before doing so I made further inquiries. Here are what a few of Beery's students said. I'll let them tell of their success in their own words.

Mr. S. L. Arrant writes: "Just to test Beery's methods, I bought the worst balky, kicking, fighting horse I could find. Paid $65.00 for him. After handling him only a few hours according to Beery's system I sold him for $135.00.

Mr. Dell Nicholson, Portland, Mich., writes: I have trained a four year old mare that was given up by everybody. Bought her for $35.00, and now have her so gentle, my little boy handles her. Wouldn't take $200.00 for her.

Dean L. Smith, Findley, Ohio, writes: By following Beery's instructions have changed a worthless, dangerous balker into a horse worth $225.00.

Everett McBlock, Elkhart, Ill., writes: Have just broken a pony to drive and taught it some tricks. Owner bought it for $17.50. Paid me $40 to train it. He just sold it to a show company for $150.00.

How I Work

The big source of my income is in buying up "ornery" colts and horses at bargain prices, and after training the animals, selling them at a good profit. However, I also pick up good money handling colts and training horses for others on a fee basis. For instance, a farmer had a beautiful driving bay that had the bad habit of shying. A piece of paper blowing across the road would set the horse crazy. The owner thought a great deal of the animal, but couldn't take chances on the shying habit. A friend of his for whom I had done some work put this man in touch with me and in a few hours I had the horse completely cured of the habit—for which job I received $50.

Curing Bad Habits

You can see from this that my work consists not only in breaking colts and "gentling" vicious horses, but in curing the various bad habits a horse can have—such as shying, balking, fear of automobiles, etc., pulling at hitching strap, pawing in the stall, etc. etc., Beery's methods of colt breaking are particularly amazing. Under the old way of handling green colts one usually had to half kill the horse as well as himself to accomplish anything—and then the colt was usually spoiled or hurt in some way or other. But, when you apply Beery's principles, there is no hard, long work or injury to the colt.

No one should have a biting, kicking or balky horse when it is so easy to cure these vicious habits. No one should attempt to break in a colt the old fashioned way when Beery's methods make the task so easy. To every horse owner, to every lover of horseflesh, my advice is to get acquainted with the Beery principles. You can not only make money for yourself, but you can do a world of good, particularly at this day when war-demands have placed a premium on horses.

Wonderful Book Free

I have been requested to state that Prof. Jesse Beery will send his remarkable booklet, "How to Break and Train Horses" free to those interested. It is a booklet well worth having as it reveals some startling information on horse-training. I have heard men who considered themselves expert horsemen say that the booklet was a revelation to them. There is no use in my going into details on the booklet when you can get it free for the asking.

Just drop a line to Prof. Jesse Beery, Dept. 5011 Pleasant Hill, Ohio, and the booklet will be sent free by return mail. A postcard will do as well as a letter.

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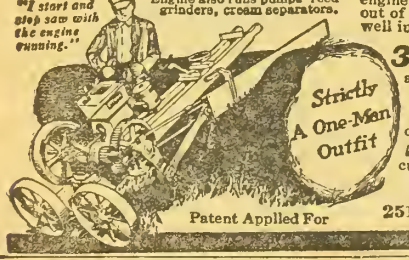

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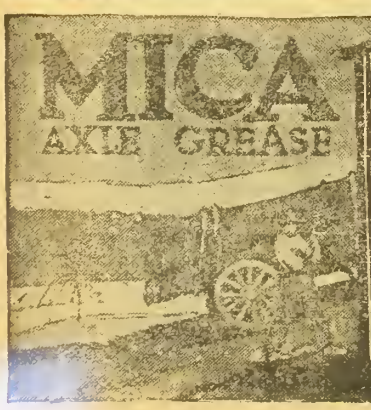

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and through the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Regarding Tomato Wilt.

Can you give me some information on the prevention of blight on tomato plants?—E. C. M., Idaho.

There is only one sure method of preventing this trouble, and that is to plant peanuts. To speak seriously, there is no known preventive of the so-called wilt or blight on tomatoes. In fact, we know but mighty little about it. All we know is that in most cases a microscopical examination of the vascular tissues of the stem shows the prevalence of a fusarium. At one time a few years ago, the writer made some investigations of this trouble in Colorado, and several investigations have since been made on the disease, but no satisfactory results were obtained. Experiments in the control of this trouble have also been unsatisfactory. Some years it will show up under the best of conditions, and other seasons it does not make its appearance to any extent. We have pretty good evidence that a disease or fungus is native in our soils. It probably enters through the roots and follows up into the stem, where it clogs the sap tissues, causing wilting and premature death of the plant. I believe the best remedial measures that have been employed are to plant two or three plants in a hill, so that if one of them becomes affected it can be removed. I advise the removal of all plants as soon as you find them diseased. Lately some growers have leaned to the theory that the disease does not attack the plants so easily when the seed is sown where the plants are to grow, thus avoiding the transplanting. We do not have very good proof as to whether this can be used to a practical advantage or not. There is no question but that it is a serious disease and retards the profitable growing of tomatoes over the arid areas of the west. I am sorry I cannot give you some easy method of eradicating the trouble.—E. R. Bennett, Field Horticulturist, University of Idaho.

Too Much Vine Growth.

We have a patch of potatoes about one acre of Goldwin and one acre of Mammoth Pearl, that have been in full bloom since the first of July. They have been blooming ever since. It looks more like a flower garden than a potato patch. The average set on the vine is about two or three potatoes. We have given them the usual care with the exception that they got a little dry, but we have always had a good crop before. We thought of mowing the tops, but never did it.—J. F. M., Mesa County, Colo.

There are cases when soils contain an excess of organic matter, which stimulates vine growth at the expense of the tubers. Another condition that might cause excessive vine growth would be over-irrigation or irrigation continued too late in the season. Many growers do not put water on the potatoes later than four weeks before digging time. A safe rule in irrigation is to keep the ground moist enough to permit continuous growth up to the time when the tubers are well developed. If the ground is allowed to get too dry during the growing period, growth will be checked and heavy rains or irrigation will then cause knobby and gnarly tubers and second growth.

Experiments made by the Utah Agricultural Experiment station indicate that excessive moisture, or moisture applied late in the life of the plant, increases the production of vines and hinders the proper development of the tubers. It is impossible to give a hard and fast rule for irrigation of potatoes, because the application of water depends on the seasonal conditions as well as condition of the soil. There may have been something wrong with your seed also. Mowing off the tops would not be of any help.

Protecting Berry Plants.

We put out some strawberry and raspberry plants the last spring. Please give me some information as to how each should be cared for this fall and winter. We are in eastern Colorado.—C. E. C., Yuma County, Colo.

If you have the Everbearing strawberries and they are in a protected part of your garden, it will not be necessary to cover them during the winter. Most of the growers in this section do not mulch their plants and they have very little trouble with freezing out. However, if your garden is exposed to high winds it may be best to give your plants a covering of straw to protect them. In regard to raspberries: These must be carefully protected to prevent freezing. The cold, drying winds on the plains are fatal to raspberry plants. Soil is generally used to cover them, the canes being bent over and held down while earth is thrown over them with a plow or spade and later smoothed by hand labor so that the canes are entirely covered. This covering is done with plows in case there is a considerable acreage, but the work can be done by hand where you have only a few plants. The canes should be uncovered in spring before growth starts, but not until after danger from severe weather has passed. The removal of the earth is often done gradually, so that the plants become accustomed to the air by degrees and thus causing less likelihood of injury to the buds.

Chemicals for Weeds.

Would like to know about using salt for smut in wheat, also for killing Russian thistles.—L. C., Washington County, Colo.

No, salt is not an effective remedy for preventing smut in wheat. There are only two treatments recommended for smut, and these are the formaldehyde and the blue vitriol treatments. Formaldehyde is the cheapest and best method, this chemical being applied to the seed before planting.

In regard to the application of salt to prevent weed growth: We do not consider this an effective remedy for Russian thistles, as the infestation is usually too great to be reached by common salt. That is, so much salt would have to be applied to kill the weeds that the soil would be injured. Chemical applications for killing weeds is not very effective. Various chemicals are used in the form of sprays, namely: Common salt, blue vitriol, iron sulphate, or copperas, sodium arsenate, calcium chloride, kerosene, carbolic acid and sulphuric acid. For most purposes iron sulphate is the cheapest and most effective chemical spray that can be applied to the ordinary weeds. However, the cost of the chemicals, the labor of application, etc., are such as to make this method impractical. The only safe way to get rid of Russian thistles and weeds of this character is through cultivation and crop rotation.

Will Not Jeopardize Loan.

I hold a note from a farmer in ——— county. The note is due and payable October 1, 1920. I also hold a first mortgage on land covering the loan. I have a letter from the banker to the effect that the maker of the note has just paid interest and that he will pay off probably one-half of the principal as soon as he can sell his wheat. My question is concerning the validity of mortgage and note, the amount involved having come due and payable October 1. There has been no renewal and I want to know how long the old note and mortgage will hold or what will have to be done, if anything, to protect my loan?—Subscriber, Colo.

The mortgagee may foreclose if he desires at any time after the failure to pay. He may wait, though, if he choses, collecting the interest as provided in the note, his failure to foreclose merely operating to extend the mortgage. Should the mortgage be permitted to run for six years without payment of interest or principal, the mortgagee might find himself unable to bring suit to foreclose. Otherwise he need not be annoyed by his security, though, of course, he did not get his cash when he thought he would.—Hamlet J. Barry, 724 Equitable Bldg., Denver, Colo.

Flax on Dry Land.

I am thinking of growing some flax next spring and would like some advice on the advisability of said crop to this part (Baca county), the amount of seed advisable to the acre and the best place to market.—I. H. S., Baca County, Colo.

Flax is grown to some extent in eastern Colorado, and there is no reason why you should not make a test of it in your section of Baca county. It is a drouth resistant plant and usually does quite well on sod. Most of the flax grown under dry farming conditions in the northwest—the Dakotas and Montana—is marketed at St. Paul, Minneapolis, and Duluth, Minnesota, where the oil mills are located. They buy in carload lots. As a possible market we would suggest that you try the seed houses. There has been a shortage of flax for seed during the last few years and prices have been averaging high.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Necrobacillosis in Hogs.

What is the cause of a large swelling on the jaw of half-grown pigs. Their faces and jaws swell up so that it looks like it would break, but it doesn't. They seem to eat, but are very poor. They have froth in their mouths all the time but don't seem to be in any pain, always ready to eat.—G. B., Utah.

The disease in question has been discussed several times recently in these columns. In a general way it is known as necrobacillosis. It is more commonly known as lip-and-leg disease, of sheep, foot-rot, calf diphtheria, sore-mouth, bull-nose of hogs, etc. In hogs it most commonly affects the mouth, causing deep ulcers with no tendency to heal, sometimes ulceration on the inside of the sheath, or large tumors appear on the head, with no tendency to suppuration. Again there may be no external indications of the disease, but on post-mortem the fundus of the stomach will be found affected. This disease is common in the western states and has caused a greater loss than hog cholera. It mostly affects pigs from two to ten months old, although occasionally the udders of sows become affected. It is caused by the gangrene organism, B, necrophorus, which is found in the litter of the yards and pens. There is no biologic that can be used in the control of this disease. Treatment is not generally successful. At the very beginning, if the ulcers are treated with caustics and followed with antiseptics, there is some hope of success. The pigs with the swellings on the head will never recover and had better be destroyed. The healthy pigs should be dipped in a solution of potassium permanganate and placed in new clean quarters. The others should be destroyed. For bulletin giving more complete directions, write to the Agricultural College, Fort Collins, Colo.—G. H. G.

Probably Brisket Disease.

My cow was sick for about two months. She didn't seem to be troubled at first. She had a calf sucking and let it suck for a while, but she decreased on her milk until she went entirely dry and then she began to swell up under the jaws. At first I thought it was lump jaw, but then she began to swell up on the breast also and along the neck and some on the front legs, and then she didn't care about the other cows. She wouldn't graze. I opened a little under the jaws and breast, thinking that she might have pus, but there was only a watery substance. What kind of disease is this. The cow died.—M. L., Alamosa County, Colo.

The disease in question was probably what is known as brisket disease, due to high altitude heart exhaustion. This disease was investigated by the Colorado Experiment station and the findings were quite conclusive. The principal symptoms are swelling of the brisket, under the chest, in the region of the throat, gradual emaciation and death. On autopsy the most marked features are generalized dropsy, enlarged and hardened liver, with dilated heart. Medicinal treatment is of little avail, but shipping affected animals to lower altitude will save many of them. This is a disease of the high altitude ranges and is not often seen at an altitude lower than 8,000 feet, although a few cases have been reported from the San Luis vallely. It is a disease of cattle and even calves are sometimes affected. It is far more prevalent in cattle that are shipped in from low altitudes and their immediate progeny. Animals from low altitudes should be brought gradually to the high altitudes and extreme exertion for some time after their arrival should be avoided. Again, the practice of buying pure-bred bulls from low altitudes and turning them on the high ranges, seems to be responsible for some of the difficulty. Not only do some of the bulls themselves die of the disease, but their calves appear to be much more susceptible. It is recommended that bulls be purchased from altitudes more nearly approaching that on which they are to be used, or if brought from low altitudes that they be changed slowly and handled carefully. The idea is to breed a more vigorous animal that can stand the unusual conditions incident to a high altitude. Experiment Station bulletin, treating of brisket disease, can be secured by writing to the Agricultural College, Fort Collins. Possibly this is not a case of brisket disease. In some cases it is hard to differentiate this disease in the living animal, or without opportunity for autopsy, from what is known as traumatic pericarditis, which means the penetration of the heart sac by a foreign body that has passed through the wall of the stomach and diaphragm. This condition is not uncommon among stable-fed cows. On autopsy the second stomach of the cow usually contains a rare assortment of hardware, such as nails, pieces of wire, etc. The wonder is that this accident does not occur with more frequency.—G. H. G.

Mules Have Bloody Warts.

I have a five-year-old mule infected with bloody warts. Has them on head, breast and knee. What can I give him to get it out of his system? Also a remedy to take them off.—Subscriber.

Warts are usually non-malignant and while frequently quite persistent, can usually be removed successfully. Warts with a restricted neck had best be ligated with stout thread like fish lines. The thread should be drawn tight enough around the base of the tumor to completely obstruct the circulation, when they will usually slough within two weeks. Tumors that cannot be so treated are often successfully removed by an application of castor oil, twice daily. It will be necessary to continue this treatment for several weeks. Tumors that have been removed surgically or by ligation are exceptional. In such cases it will be necessary to remove the tumor by excision including considerable of the surrounding tissue, and using a cautery. The milder treatment first suggested should be first tried.—G. H. G.

This Was Not Foot and Mouth.

When foot and mouth disease first broke out I put some copperas and dissolved some of it in a bucket of lukewarm water, put each of the cows' feet in for five minutes and she licked this from her feet. This helped her a great deal and in a little time her feet peeled off and she was well.—M. K., Las Animas County, Colo.

The disease affecting your cow was not the real foot-and-mouth disease, which is one of the five great bovine scourges. Foot-and-mouth disease has appeared in the eastern states several times, but has never been west of the Mississippi river. Your cow was probably affected with catarrhal fever, which is manifested by sore feet and a sore mouth. Had it been foot-and-mouth disease it would have spread rapidly, the whole state would have been quarantined and all exposed animals would have been slaughtered. For sore feet and sore mouth that accompany catarrhal fever, copperas in solution is a valuable remedy. However, the idea of allowing the cow to doctor her own mouth by lapping her feet is a new one. —G. H. G.

Comment by Farmer Putnam.

(Continued from Page 9.)

a great success of the membership campaign. You see Tom, you have a mighty big responsibility. Start a Farm Bureau in your county and maybe they will make you president. If you don't feel like making as big a break as that all at once come up and join the Morgan County Farm Bureau and we will break you in for the big duties ahead of you. —E. J. Leonard, Secretary Colorado State Farm Bureau, Fort Morgan, Colo.

Thanks fur the invite, and fur the compliment about me bein' a man of capacity. I've got the capacity all right, but since the dry law was wished on us I ain't had nuthin' to put into my capacity.

Now about the Farm Burro: I'm ready to jine. What's the inducements? If I'm so important as Mr. Leonard sez —and he was never knowed to tell a lie —them counties ought to be glad to git me, so I'm a-goin' to start a contest and the county that makes the best offer fur my membership gits it. Come on boys, what'll you bid?

Thoar Jefferson Putnam

The back-to-the-farm movement would be a great success if all who urged it would do it.—Cleveland Press.

Thousands Know That No Other Light Car Gives So Much In Real Satisfaction

The Cleveland Six has won its place of favor among thousands of discriminating buyers by its splendid performance in daily service. Those who sell the Cleveland sell it for what it really is, a distinctly better car. Those who buy it, buy it with the understanding and conviction that it is a better car, that it will serve them honestly.

The Cleveland has made its friends by its character. It is of sturdy construction, dignified in line, handsomely finished and alive with power. The exclusive Cleveland motor, quiet, pliant and powerful, the most highly refined of the enclosed overhead valve type, is foremost among light six motors. Its rapid acceleration, its pulling power which takes it flying over the hills and its economy of fuel, mark it as an unusual motor. Drivers who know motors by experience say there is no other like it.

You will be interested in the ease of handling your Cleveland, how lightly it steers, how easily it shifts and at the instantly positive action of its brakes. And for comfort, the long underslung springs smooth out the roughest roads and add pleasure to country driving.

A real ride in the Cleveland will show you, better than we can tell you, what a good car the Cleveland is.

Touring Car (Five Passengers)	$1435	Roadster (Three Passengers)	$1435
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Extra: *"You tell 'em splinter, you're a chip off the old block!!"*

Chicago,

OLD PAL PETE: Wednesday.

This is a P. S. to the letter I wrote you on the buzzing Limited. Kid, for a fact, I'm hitting 13 on making up Camel advertisements. *And, I'll say it right here!* Porter, give us the lights!

Just skimmed another swell Camel fact! Stop this: Guess I've smoked a million Camels! Pete, they never tired my taste yet!!!! And, old socks, *put Camels to the test!* Then you'll wise up that Camels leave no unpleasant cigaretty aftertaste nor unpleasant cigaretty odor!

That's some smoke news, I'll say, when you been trying to fuss the "straight" brands! And, old shoe, *you ought to know*, they gave you a lacing!

What makes a dent on my disposition is that while Camels are the mildest cigarette and the mellowest cigarette any man can buy they've *got all the "body" you ever heard tell of!*

Why Pete, I've got as many new selling ideas about Camels as there are hairs on a purr-kitty's tail!

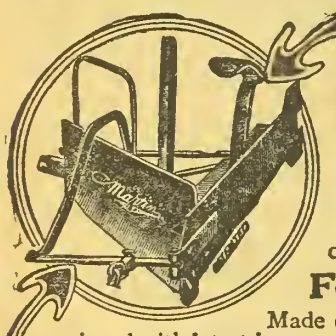
Drop your old lamps down here,—how's that for blazing the joy Camels pass out!

Me for more of 'em

Shorty.

—"The Camel Kid!"

Camel



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The Heart of Virginia Keep

· BY EDWIN BAIRD ~ COPYRIGHT ·

The Previous Chapters.

Prologue: Double murder in barroom, by chance visitor, in self-defense. He disappears. * * * Twenty-five years elapse. The story opens with a scene in the home of Banker Alfred Keep, whose daughter, Virginia, is being courted by Grant Mattock, the young state's attorney. A ragged boy brings a mysterious note for the banker. Banker Keep disappears between midnight and morning. Sleuths follow him to Canada, where he is arrested on the charge of murder, committed twenty-five years before. He is brought back for trial. Mattock chooses the path of duty and becomes a vigorous prosecutor. Virginia stands by her father. Her step-mother has not yet been informed of the details.

Enter, A. Dempster Trude, wealthy New York youth, in search of excitement. Through the death of a relative he becomes owner of The St. Louis Publicist and, hiding his identity from all but the managing editor, he secures a position as a reporter. On his first assignment—the Keep story—he encounters adventure and succumbs to the charms of Virginia Keep. He orders the managing editor to "Kill the Keep story; plenty of news without it," although rival newspapers publish it under glaring headlines.

The senior Lewis, of Lewis & Lewis, called at the Keep residence at about three that afternoon. Virginia received him, thankful that her stepmother, who as yet knew nothing, was away from home.

Lawyer Lewis, a rotund, pink-jowled, dapper man of fifty, had prepared to meet a grief-stricken wife and a hysterical daughter; and as he waited in the drawing-room, wary eyes on the door, he mentally rehearsed what he intended to say first, comfortably considering just the proper professional mien tinctured with just the right amount of personal sympathy. But the quiet, self-possessed young woman who presently entered, saying in a business-like manner that she would attend to the consultation since her stepmother was out, caused him to forego his contemplated preamble and come immediately to the point.

"Above all," he told her, "say nothing for publication. Refer the representatives of the press to me."

"I've already done so," Virginia replied, sitting sideways on a spindle-legged chair. "They've kept the telephone busy for the past three hours."

"Your father, too, must hold a silent tongue—as I advised him awhile ago by wire."

"Papa generally knows what not to say."

Lewis acknowledged this with a bob of his pink head, and asked about the prosecution; and she told him of her quest that morning, adding reluctantly:

"Ive been thinking that perhaps a material reward might induce Mrs. Schmitt to drop whatever case she has."

"You mean you would offer her money?" he gasped.

"I—I had thought of doing so?" she faltered.

Lewis puffed out his pink cheeks like an alarmed rabbit.

"Don't entertain such a thought for a moment!" he exploded. "Not for a moment! We cannot afford to resort to bribery."

She did not pursue the subject. The talk turned upon other aspects of the affair. For more than an hour they sat discussing it, casting conjectures, advancing opinions, going over every conceivable phase of it, while the telephone in the hall rang almost incessantly. Lewis answered the staccato calls, which were mostly from the newspapers, until his face grew pink as a McKinley carnation, and he mopped his plump cheeks in comic despair. At last Virginia solved the vexing problem by unhooking the receiver.

That her thoughts reverted to the Schmitts became plain as he prepared to go.

"Do you suppose," she asked with a glance at the clock, "that Mrs. Schmitt's husband would be home at this hour?"

Lewis, who had risen, sat down again.

"You weren't thinking of seeing him?"

"I—— Yes, I was."

"Why?" he asked patiently. And before she could reply:

"Were you contemplating bringing your influence to bear on him?"

"I'd rather bring his to bear on her. Aren't German women particularly subservient to the wishes of their lords?"

Lewis, having believed the Schmitt question settled, grew rosy and started to rejoin emphatically, when the parlor-maid entered with a telegram on her salver.

The message was from Keep. It informed them that he would arrive at four o'clock the following morning. In the ensuing flutter the Schmitts were forgotten. A few minutes later Lewis took his departure, his expostulatio is unvoiced. As Virginia bade him goodbye in the hall a carriage clattered in the street. Looking around the corpulent lawyer, who filled half the doorway, she saw her stepmother alight from her brougham and come toward the housc. Then, in sudden panic:

"Don't say anything to mother," she besought. "About what has happencd, I mean. She hasn't heard yet, and it would be better if I told her. She's very easily shocked."

Mrs. Keep was half-way up the tulip-bordered walk by now. Lewis, perplexed, had barely time to promise a compliance before she came within ear-shot.

Conventionalities over with Alfred Keep's wife, he left, uncomfortably puzzled, with a brand-new impression of Alfred Keep's daughter.

CHAPTER VIII.

The Waters of Bitterness.

Mrs. Keep, with a periodic headache, retired to her apartment, requesting "absolute quiet." Yet it was not this which paralyzed Virginia's tongue.

"I can't tell her," she protested to herself. "At least not yet. Why did I stop Mr. Lewis? Why didn't Grant tell her this morning?"

Then she recognized the truth.

"But the futility of it!" she thought, moving about the book-lined library. She's got to know! Why not tell her now and be done with it? What on earth am I waiting for? Is it because I'm afraid—I will tell her! I'm not afraid of her!"

She swung on her heel, swept from the room and tumultuously upstairs. But in the presence of her stepmother her courage oozed away; always Mrs. Keep's headaches made her hard of approach. So after some perfunctory words of condolence, Virginia tiptoed to the door, her message unuttered, her bravery gone.

She went to her bedroom and flung her young body on the white lace bed. Dark head pillowed on her smooth-skinned arms, long-lashed eyes partially closed, she gave herself up to illusory fancy. She imagined she had gone to her stepmother and very quietly and straightforwardly had told her all, and when she had finished her stepmother in her precise enunciation had exclaimed with a touch of hauteur as if suspecting an inelegant jest:

"Manslaughter! Under arrest!"

And she, Virginia, had nodded whitely and said: "Yes, mother"; and then, after further terse dialogue, growing more and more dramatic and ending with a long, stark moment of awful silence, Mrs. Keep had uttered a low, anguishing sound, partly a moan, partly a horrified whisper, and had fallen back upon her pillow, her thin, bloodless lips pressed tightly together, one blue-veined hand groping blindly for the lavender salts; and Virginia had ministered to her and consoled her with gentle kindness, and afterward had left her in the care of her maid and come softly away.

The girl sprang from her bed. Arranging her disordered hair before the dressing-table, her lips curled sardonically, disdainfully, at her mirrored reflection.

"What a coward I am!"

And she prickled with shame; for in Virginia's lexicon fear spelled baseness.

Seated at the desk-telephone in her maple sitting-room, she called up the stable and ordered her saddle horse.

Astride him she went cantering westward through the cool afternoon, inhaling the on-rushing air in deep, zestful quantities, urging her horse on faster and faster in an effort to flee from the hobgoblins of her mind.

The rain had ceased, the day cleared, and the atmosphere tingled with the fresh breath of spring, odorous of growing things and newly turned earth. And since memory's sharpest spur is the olfactory sense, the delicious earthy fragrance brought other days to mind—days in April and days in May, days of happiness and the joys of youth; glorious days, all. And because she was very young she grew sad with the thought that never would she enjoy such days again. In her youthful philosophy she never dreamed that time is a remedy for all mental ills; that the griefs of today are forgotten in to-morrows pleasures.

Albeit her horsc's pace made passers-by turn to stare, she laid her crop upon his flank until he broke into a gallop. Her eyes shone exquisitely in the rushing wind, and her finc skin glowed with the warm Southern blood pumping healthily beneath, but her soul was leaden.

The sun had set and dusk was thickening when she drew rein at the Middletons' bungalow in West Cabanne Terrace. Through the wistaria-vines in the gathering twilight she discerned a white-clad girl on the broad verandah. As she dismounted, calling, "That you, Jo?" the girl in white sprang up, cried, "Hello, Virginia!" and tripped airily toward the gate.

A fair-complexioned, tawny-haired girl of twenty, with clear grey eyes, tip-tilted nose, high cheek-bones, and freckles, Josephine Middleton's role in life should have been—as indeed it was to outward appearance—one of bubbling materialism. Beneath her boyish prettiness, though, throbbed a romantic heart essentially feminine. Moreover, she had a shy, sentimental side which even her mother knew not of, since she reserved its silent expression for moonlit nights at her bedroom window and a dog-eared diary she had secretly kept since her sixteenth year.

They strolled back to the bungalow, arms around each other's waists, one effervescing, the other distrait. Because of the eventide shadows and her own ebullience Josephine suspected nothing amiss until they were in the cushioned porch-swing. Then, having twice rung

a variation on a pertinent witticism without eliciting a response:

"Virginia, you're as quiet as a cat watching a canary. What's the matter? Blues?"

Virginia was silent. Shame—shame and the dread of what this girl, the most intimate of her friends, her room-mate at college, would think, would say, rendered her mute.

"What is it dear? Has anything happened?"

Josephine turned sideways in the swing, crossing her rounded knees, and slipping one milk-white arm across Virginia's shoulders, her clear, grey eyes endeavoring to read the face of her friend in the fading light.

"J-Jo, I've broken my engagement."

"Oh-h! You poor woman! I always suspected he was horrid. Tell me, dear, about it, do."

And the girl who had been betrothed before the woman in her was awake told the other briefly, skirting certain details, keeping the real cause hidden.

"But, Virginia, what did the creature do to make you so angry?"

"H-he—— I—— Oh, Jo, I couldn't stand him. He was too intolerable. Too hateful!"

"I know, dear child, soothed Josephine, her warm, freckled cheek against the smooth, cool surface of Virginia's; "I understand."

Though they sat for a space in a wordless communion, their thoughts—if Jo had known—ran in divergent channels.

"Virginia!"

"Yes?"

"Did you ever really and truly care?"

"Never!"

"Not even at—first?"

"Not even at any time."

"But you must have, girl, a tiny bit. Else why——"

"Well, maybe I thought I did. I don't know."

Josephine started the swing swaying gently. Sitting on one leg, soft forearm resting on the back:

"Dear, didn't you feel horribly queer when—when——"

"It's so vague," sighed Virginia; "so unreal. Maybe I was hypnotized. I dont know. Grant has peculiar eyes. Did you ever notice?"

"Oh, how can you still call him 'Grant'?"

"It slipped out—— Well, anyhow," settling back tiredly among the cushions —"I'm glad it's all over."

"What does your father think?" Josephine wondered. Then, straightening up suddenly and halting the swing with an outjutting foot:

"Virginia, where is your father? Somebody told me——"

To her inexpressible relief the question became lost and required no immediate answer. A touring car had stopped in the street, the dazzling white glare from the head-lamps shimmering through the wistaria and athwart the verandah. Two girls in light evening wraps and three youths in dinner coats were alighting with exuberant merriment and flitting houseward. In the gay hubbub that ensued on the verandah Virginia remembered Josephine's mentioning something at the gate about a dinner party, and her paramount thought was to efface herself as speedily as possible. Among the mirthful young people, with whom she was a favorite, she felt oddly isolated; felt, despite her loyal desire to believe the contrary, that if they knew what she knew they would politely shun her then, and, later, ostracise her.

Her preoccupation was not unobserved, and a beefy youth, a 'varsity quarterback, who imagined he was going into a decline because of his secret passion for her, presently remarked upon it to one of the girls, his cousin.

Josephine overheard and, snatching a propitious moment, whispered in Virginia's ear: "May I tell?"

And getting consent, exclaimed dramatically:

"Hush, everybody! Virginia's engagement is off!"

In the exclamatory chorus that followed the girls fluttered palpitantly about their heroine, condoling, admiring, all in a breath; and the red-blooded youth, whose unvoiced love consumed him, was heard to remark with covert joy:

"She's wise in cutting Mattock. He's a century too old for her."

Then a frosted lamp near the verandah-ceiling burst into light. Mr. and Mrs. Middleton came out and, among other things, insisted that she stay for dinner. When she motioned deprecatingly toward her riding habit, Josephine cried:

"You know perfectly well you can have anything in my wardrobe.'

Middleton laughed:

"That settles it! I'll 'phone Alfred she's dining with us."

The mention of Virginia's father seemed to jog his memory, for he glanced at her curiously as if shaping his thoughts for a prior question still puzzling him. The ox-like youth hovered near, afraid she would not stay, and murmured something thickly about an after-dinner motor ride.

Virginia tore herself finally from her importunate friends, having stimulated rather than satisfied Middleton's curiosity, and, mounting her horse with a last farewell, started off briskly. Soon, though, she reined to a moderate trot and continued slowly, thoughtfully, her meditation deepening as the horse's pace slackened.

Instead of going directly home she dismounted before a drug store, and, entering, telephoned her stepmother, via the housekeeper, that she would be away for an hour or more.

In the saddle again, hesitation gone, she sent her steed smartly in the direction of Mrs. Herman Schmitt's house. Once as she cantered through the restless city night, a newsboy's shout rang in the street:

"Extry! All about——"

She clapped her hands to her ears, digging both heels in the horse's sides; nor did she entirely cease the spurring until the heaving animal was jerked to a sweat-flecked stop at the domicile of Mrs. Schmitt.

A flaxen-haired boy of five came to the door, obeying his mother's precept by opening it a suspicious six inches. But his immediate good will was gained when she slipped a silver coin from her glove into his dimpled fist. Then, patting his head, she stepped inside. Guided by the heavy smell of pork sausage and turnips, she groped a course through a dark passageway to the kitchen, where Mrs. Schmitt and her husband sat at their evening meal.

Schmitt, a thick, middle-aged German, shaped like a club-house cigar, neither spoke nor rose when she entered. His spouse acknowledged Virginia's presence only with a scowl. Unbidden, she sat down with an apology for the intrusion, and addressed the man, whose chubby jaws worked on his food with the methodical determination of a stone-crusher, his fat arms spread fanwise at each side of his plate.

"Mr. Schmitt, I have come to plead with you and your wife. I am sure you will grant me a hearing."

She paused, unable to continue for a moment, and pressed her handkerchief over mouth and nose. Her face went pale. The hot, cloggy smell of the steaming food, of which the whole house reeked, reminded her that she had tasted nothing since breakfast, but, far from piquing her appetite, the odor sickened her.

The child had returned to the oilcloth-covered table and sat staring at her, small mouth gaping, china-blue eyes round with awe, until his mother frowned upon him severely and in a guttural undertone admonished him to "Eatcher supper!"

Then she noticed his tightly clenched fist. Prying open the dimpled fingers, she extracted the coin, which was returned to Virginia forthwith. The youngster set up a howl and was carried from the room, shrieking heartbrokenly, "Booful lady gimme it!"

With a copious draught from his thick coffee-cup, Schmitt washed down a great mouthful of sausage and boiled turnips and scooped a heap of chow chow onto his wooden-handled fork, ignoring the domestic agitation with a vast and very commendable indifference.

Virginia's upper lip quivered.

"Mr. Schmitt, do you care at all to listen to what I have to say?"

The phlegmatic Schmitt smeared a chunk of rye bread with margarine, pointed his wooden-handled knife at his wife—who, having attended to her offspring, returned just then—and for the first and last time that evening broke the profound silence which enthralled him.

"Dalk midt her," said he, and resumed his viands to speak no more.

"Nothin' doin'," observed Mrs. Schmitt, adding as she sat down: "Nor your lawyer don't do you no good, either."

The cold brutality—not of the words so much as of the tone—made the girl's flesh creep. Always sympathetic and generous, she tried to see the thing from the other's view point, and though she could find no justification for Mrs. Schmitt's attitude the mental procedure suggested a plea, which she now put into words.

"Mrs. Schmitt, will you imagine yourself in my place momentarily? Suppose our positions were reversed. Suppose the guilt of the accused man, your father whom you loved, was doubtful. And suppose that I——'

"Your old man done it!" broke out the woman, unable to keep still at an allusion to the contrary. "I can prove it."

"How?"

"Never you mind."

Virginia sighed wearily.

"Very well; we'll say he is guilty. Will your prosecuting him help you? After twenty-five years what good can it do? If my father did the thing you think he did punishing him will not make it any less. And it will not help you! Remember that.

"Don't you know, Mrs. Schmitt, and you, too, Mr. Schmitt, that if you prosecute him you will have to go to court day after day, perhaps week after week to testify, and can't you see that you will only be wasting your time and going to a great deal of unnecessary trouble? Even if he were sent to the—p-penitentiary it would not do either of you one particle of good.

"Come now; don't you think it would be best to drop it? If not for my sake, then at least for your own. It has been twenty-five years, Mrs. Schmitt. Think of it! Twenty-five long years—almost half a lifetime!"

Mrs. Schmitt empaled a slice of rye bread on her fork and swabbed the meat-platter with it.

"I gotter do it," she muttered, cutting the bread into edible pieces. "I promised my mother on her deathbed."

Notwithstanding the fact that Mrs. Schmitt spoke in sullen defiance, Virginia perceived with a quick, exultant throb that at last she had touched the woman; and she pressed her advantage eagerly, summoning every argument at her call, recollecting many she had conceived en route, speaking sometimes disconnectedly and often illogically, striving above all to appeal to the practical, thrifty mind of the Teuton—and fighting all the while a slow nausea that was stealing greasily over her.

When at length she finished she searched her auditors' faces in vain for a semblance of leniency. Schmitt, satiated as to stomach, got up and waddled off, picking his teeth with a broken match and obviously bored by a topic of no interest to him. Mrs. Schmitt, as taciturn, as cold and as unfriendly as ever, began removing the soiled dishes.

Virginia watched her a moment and started to rise; but a sick faintness overcame her, and she sat back in the hard kitchen chair, eyes closed, shapely white hands pressing her temples.

But all at once her hands dropped and tightened around the riding-crop in her lap. Her supple, young body grew rigid. She looked swiftly about. Schmitt had left the room; his wife stood at the sink arranging a stack of dishes under the hot-water tap. Another moment and Virginia was beside her.

"Mrs. Schmitt—listen! Suppose I offered you money—a very large amount. Say five thousand dollars?"

Mrs. Schmitt jerked the tap, sending a steaming torrent spattering upon the greasy dishes, and wheeled upon her temptress.

"So-o! That's your game!" somewhat breathlessly.

"Yes," said Virginia, and struck her skirt with the riding-cop. "That's my game. Five thousand dollars would buy this house and lot, and make you independent for the rest of your life. What d'you say? Is it a bargain?"

Mrs. Schmitt, stolid face flushed, dull eyes afire, drew herself erect. Her thick, red hands gripped her hips as, raising her voice, she exclaimed harshly:

"No! Not for five thousandt—not for fifty thousandt! But I'll tell the jury. And Mr. Mattock! And——"

Virginia fled. In the unlighted hallway, rushing blindly, heedlessly, overpowered with the need of the open air, she collided with some one coming toward her. She regained her balance as a familiar voice spoke to her; then, catching her breath, she flew frantically toward the street.

Without a glance in her direction Grant Mattock squared his shoulders and went in to see Mrs. Schmitt.

CHAPTER IX.

Mr. What's-His-Name.

While Alfred Keep's arrival—by his own request—at four 'oclock the following morning forestalled a curious crowd it did not deter the newspapermen, among whom was Trude, on his own initiative, the only representative of the Publicist present. The Publicist's disregard of the local story of the hour and the apparent lack of reason for it was beginning to afford St. Louis press-circles a topic for conjecture that would be a long while in growing stale.

As the white-haired bank-president climbed stiffly down from the smoke-blackened Pullman, carrying a Russia leather valise, he might have been returning from a successful business trip; and the two quietly dressed men accompanying him might have been associates instead of custodians of the law. But when he stepped from the shadow of the vestibule out upon the platform the neutral rays of an arc lamp struck pitilessly upon his face, and it was seen that in the past four days he had aged thrice as many years.

Virginia awaited him at the Pullman steps, flanked by Lizbeth and Mr. Lewis, whose thoughts dwelt dolefully upon the warm bed he had left. Keep was permitted to go aside with her; and when they had moved off a little way, he said:

"You shouldn't be here, Virginia. Why did you come?" He crushed his soft hat lower upon his thick, white hair, a corner of his mouth twitching fitfully.

At that instant a commotion arose near by. A newspaper photographer, in the act of taking a flash-light of them, was about to explode his powder when some one stumbled awkwardly against the tripod, upsetting the camera, knocking his plans awry and nettling within him an acrid temper—which discreetly cooled upon surveying Trude's muscular six feet.

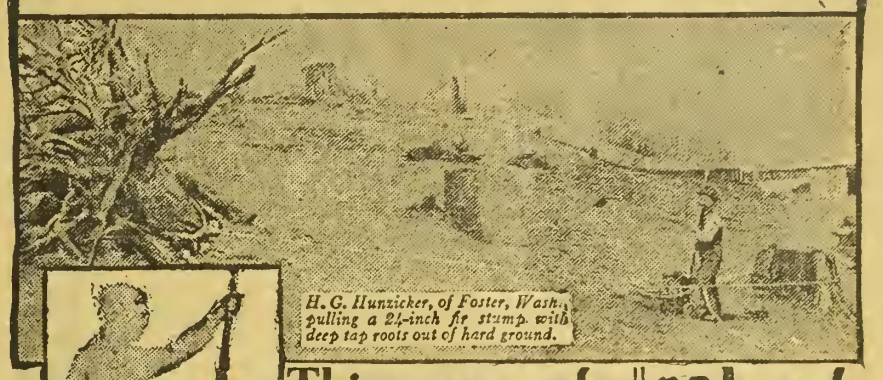
Disregarding the incident, Virginia said with forced banter:

"Well, I like that! After sleeping with one eye open and with half my clothes on so I shouldn't be late!"

"It was brave of you," he said; "but needless. How have you been?"

(Turn to Page 16.)

Big Money In Stump Land



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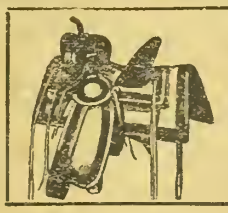

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All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, Western Farm Life, Denver, Colorado.

Marketing Dairy Products.

There has been more or less discontent among dairymen the last few years in the marketing of their products. They have not organized themselves, but each has attempted to sell regardless of any one else. As a result, they have not obtained the price that they should have had. The writer has recently had opportunity of looking into the Dairyman's League of Oregon, an organization founded to assist the producers in the marketing of their product. No one but a bona-fide producer can belong to the organization. Its main purpose is to carry on co-operative marketing of dairy products; to eliminate speculation and waste and to stabilize food markets in the interests of the dairymen and the public. Absolute fairness to the consuming public and the producer is the aim.

The association agrees to resell all dairy products of its members at the best possible price, retaining enough of the proceeds to take care of the expenses of operation. The contract between the individual producer and the association is binding, causing the producer to deliver his products of the dairy to the pool of the association. A strong penalty is imposed on those who do not adhere to the contract. The dairymen of the state are flocking to this organization and are finding it greatly to their advantage in the price they receive for the product. The best possible talent is employed to look after the details of the organization.

Colorado dairymen would find it to their advantage to look into the success of this enterprise. Its headquarters is in Room 411, Corbett Building, Portland, Ore.—H. A. L.

Get Rid of Scrub Sires.

Some of the states are working out plans to get rid of the scrub sire in the communities. Their plan is to make a complete survey of the territory, listing all of the farms where scrub sires are used. When this data is all in, the information is to be presented to the purebred breeders, who are agreeing to replace every scrub sire with a registered one. That is, every farmer who has been using a scrub sire will be given access to service to a registered one in exchange for his scrub sire, which is slaughtered. Not a bad idea. Such a program would make a wonderful improvement in the livestock of the west in a few years.—H. A. L.

Improving the Type.

That co-operative marketing of livestock improves the type of hogs in a community is a new slant at the good that these organizations accomplish. In one locality in a western state, the first few shipments of hogs from the section were such as to cause the manager to hide his face with shame when they were taken into the market. When the co-operators saw how well the good hogs sold, as compared with the inferior animals of the shipment, they became interested in better types. What was the result? They are now shipping the best type of hogs that any section of the state affords. A little rivalry between neighbors and localities often is a stimulus to better livestock, as well as other methods of farming.—H. A. L.

Value of Type in Hog Raising.

A good type hog is far better as a producer of pork than an inferior one. Where hogs are purchased to take care of the farm wastes, there is a tendency to pick up anything that is available, no matter what color or type they may be. These are often fine of bone, small and chunky, and do not put on meat as economically as a good type animal. The good ones are the cheapest in the long run and should be sought after. Select a hog that is of pure breeding of any breed, and one that is of good bone, with good scale and your money will be well spent for satisfactory return.—H. A. L.

Value of Good Cows.

Too many of our farmers are content with a cow that supplies just enough milk and cream for the table. They forget the important fact that it costs about as much to keep a poor cow as a good one. Anyone is farther ahead to get rid of the poor individual and substitute for her a good producer. The country would be farther ahead to be rid of all the inferior cows. Why not always insist on the best? A few extra pounds of butter or cream means considerable if it is marketed. It goes a long way toward keeping up table expenses. The writer visited on a farm recently where three fairly good Jerseys are kept. In conversing about the merits of the dairy cows the farmer stated that the three cows had brought in $345 in the last year, besides what had been used on the home table in the way of butter, cream and milk.

The story is always the same. No matter how much one dreads the milking, there is the satisfaction of the regular monthly income.—H. A. L.

Shipping Milk by Insulated Truck.

That the insulated truck is to be a factor in obtaining milk supplies for large cities is indicated by its successful use in different parts of the country. Dealers in large cities, which have good roads leading to them, can reach farther out for their market milk by the use of this kind of conveyance.

As an example of what may be accomplished, Mr. R. J. Posson, of the western office of the Dairy Division, reports that one company in San Francisco now obtains the bulk of its supply 125 miles from its city plant. The milk is cooled to about 45 degrees in a small plant situated in the producing center. It is then put into sterilized ten-gallon cans which are loaded into the insulated trucks and taken to the city, where it arrives at the pasteurizing plant at approximately the same temperature as when put in the cans. By means of this thorough cooling soon after the milk is produced and holding at a low temperature, the bacteria do not have an opportunity to multiply and the counts are quite low even before the milk is pasteurized. This company makes use of a large trailer which almost doubles the capacity of the truck. By being able to haul a considerable quantity at each trip the cost per quart has been found not to be excessive. It is necessary to use only a small amount of ice in the truck, even in the warmest weather. It has been the experience of this company that a truck body, high enough for two tiers of cans, with doors at the rear end and a rounding roof, enabling a man to load and unload the truck without stooping, is the most satisfactory. Cork insulation has given the best results.

Waste Feeds Cheapen Pork.

The harvesting season brings a great deal of unavoidable wastes on the farm that are very useful in making cheap pork. This is sometimes a little hard to take care of without some extra fencing or other trouble, but the results obtained are sure to pay well in the end. The cull potatoes that are often left on the ground to rot are valuable in the production of pork. Six hundred pounds of them will save 100 pounds of 3-cent grain. Cull fruit is also valuable in saving grain. One of the most valuable wastes for the making of gains is the wheat stubble. Hogs will fatten on this without any additional feed. Too often we overlook these feeds and wonder why we have not made a profit from the production of pork. It is these wastes that makes the hog economical on the average farm.—H. A. L.

Goats Tramp the Silage.

Goats did their share in saving labor at silo filling time this fall on the farms of J. E. Lewis and Mr. Bennett at La Junta, Colo. A report comes from A. A. Eastman of the Otero County Cow Testing Association to the effect that these two farmers have found the use of goats in tramping silage practical. With about 20 goats in a silo to do the packing two men only are needed, one to keep them moving and the other to handle the spout. After the silo is filled the goats are easily lowered from the silo by the aid of a pulley and rope.

The objection made that silage thus tramped will not be eaten by dairy cows is given no weight by Mr. Lewis or Mr. Bennett, who declare that their silage was palatable and clean when they fed it last winter, after using the goats for tramping.

Cow Testing Reports.

The report of Colorado Cow Testing Associations for September shows the high cow in the state that month to be a Holstein owned by W. C. Sauer & Son, Fort Lupton. The high herd for the month was that of W. A. Ewing of Fort Lupton, a Guernsey breeder. In the Douglas county association 450 cows were tested with an average of 531.2 pounds of milk per cow, 20.2 pounds of butterfat, and 12 cows producing over 40 pounds of butterfat during the month. The high cow in the association produced 1,611 pounds of milk and 58 pounds of butterfat. The high herd in that county, comprising twelve animals, produced 954 pounds of milk per cow and 35.7 pounds of butterfat.

In the Johnstown association 286 cows were tested, with an average of 783.6 lbs. of milk per cow, 28.9 lbs. of butterfat, and 49 cows producing over 40 lbs. of butterfat during the month. The high cow in this association produced 1,770 lbs. of milk and 63.7 lbs. of butterfat. The high herd in that association, comprising fifteen animals, produced 983.6 lbs. of milk per cow, and 37.5 lbs. of butterfat.

The Otero county association had 152 cows tested with an average of 423.3 lbs. of milk per cow, 15.26 lbs. of butterfat, and one cow producing over 40 lbs. of butterfat during the month. The high cow in this association produced 1,116 lbs. of milk and 42.4 lbs. of butterfat. The high herd in that county, comprising nine animals, produced 693 lbs. of milk per cow and 23.2 lbs. of butterfat.

The Platte, Boulder and St. Vrain Valleys Association tested 319 cows with an average of 558 lbs. of milk per cow, 24.4 lbs. of butterfat, and 28 cows producing over 40 lbs. of butterfat during the month. The high cow in that association produced 1,650 lbs. of milk and 72.6 lbs. of butterfat. The high herd in that association, comprising five animals, produced 937 lbs. of milk per cow and 38.1 lbs. of butterfat.

The production in the Johnstown and the Platte, Boulder and St. Vrain Valleys associations shows a slight increase over the previous month, while in the other associations that are not feeding as heavily, the average for September is lower than last. In general, feed was cheaper throughout the state, with milk prices holding firm and in some sections higher than the previous month.

The Douglas county and Melvin associations: W. A. Shubarth of Greenland has the high herd of Holsteins averaging 35.7 lbs. of butterfat from 954 lbs. of milk. E. J. Lindquist again has high cow, Jennie, producing 58 lbs. butterfat from 1,611 lbs. of milk. Mr. Lindquist has erected another tile silo. Messrs. McInroy, Shubarth and DeArcy split the premium money at the county fair held at Castle Rock, September 27-30. Professor Morton of the Agricultural College judged the livestock. Nine "boarder" cows have been sold and seven high grades purchased during this month.

Otero County C. T. A.: J. H. Holm of La Junta has the high cow and high herd for the month, a Holstein producing 42.4 lbs. butterfat from 1,116 lbs. of milk. His herd averaged 693 lbs. milk and 23.2 lbs. butterfat.

Platte, Boulder and St. Vrain: W. C. Sauer of Fort Lupton has the high cow, Popeye, a Holstein, making 1,650 lbs. of milk and 72.6 lbs. of butterfat. W. A. Ewing's herd of Guernseys averaged 937 lbs. milk and 38.1 lbs. butterfat. The association conducted two guessing contests, one at the Adams county and the other at the Boulder county fair.

The Johnstown C. T. A.: W. B. Polly, manager of the Virginia Lynn Dairy Company, has the high cow in the association this month, Beauty, a registered Holstein producing 1,770 lbs. milk and 63.7 lbs. butterfat. A herd of 15 Holsteins, owned by F. J. Gore of Eaton, averaged 983.6 lbs. milk and 37.5 lbs. butterfat. At the Larimer county fair at Loveland practically all of the Holstein prizes were won by members of the Johnstown C. T. A. Crowley & Letford won the grand championship on Holstein bull, Goodro Johanna Fayne, a grandson of Sir Johanna Fayne. The grand champion Holstein cow, South Omondaga Favorite, is owned by the Virginia Lynn Dairy Co. She is more than a show cow. She will complete a yearly A. R. O. record in the neighborhood of 750 lbs. butterfat. W. A. Purvis' cows, Rocabie and Alice, took the special premium offered by the Colorado Condensed Milk Co. Rocabie produced 647.4 lbs. butterfat from 16,714 lbs. milk in a year. Alice Lilith Netherland produced 629 lbs. butterfat from 20,367 lbs. milk in a year. Mr. Purvis won practically everything at the Greeley fair.

Colorado Feed Quotations.

	Ft. Collins.	Douglas Co.	Johnstown.	Platte, Boulder and St. Vrain.
Alfalfa (ton)	$15.00	$16.00@20.00	$12.00@15.00	$14.00@17.00
Silage (ton)	.....	8.00@10.00	6.00@10.00	
Dry beet pulp. (cwt.)	1.75	.....	1.75	1.75
Bran (cwt.)	2.25	2.30@ 3.30	2.15	3.00
Cottonseed meal	60.00	3.75@ 5.00	3.50	4.25
Linseed meal	75.00	4.75@ 5.50	4.40	4.75
Oats (cwt.)	2.10	3.20@ 4.00	2.55	3.00
Barley (cwt.)	2.00	4.00	2.45	3.00
Corn chop (cwt.)	2.20	2.40@ 3.50	2.50	3.25@ 3.50
Paid to dairymen for 3.5 per cent milk (gal.)	.32	Denver .90 B. F.		
Sweet cream (B. F.)	.65	.80 B. F.	.75	.75
Churning cream	.58			

Farm Cheese Making.

Very often it happens that the farmer desires to make the daily milk supply into cheese. By careful management this can be done. Cheese making is a particular process and one needs to study the art carefully before attempting it. Most all housewives know how to make cottage cheese from the surplus milk. Cheddar cheese is a little more difficult to make and requires more equipment in handling. However, very good cheese can be made with only the ordinary utensils at hand. A good, new wash boiler will answer very well as a vat. It must be clean and should not have been used for any other purpose. Rennet tablets, cheese cloth, a hoop or mold for the curd, a knife with which to cut the curd and a thermometer.

Next select the milk. For farm cheese making fresh milk should be used. However, if milk twelve hours old has been kept cool it can be used. To start with, the milk should be at a temperature of 86 degrees. Pour it into the boiler and add the rennet. One tablet of rennet dissolved in one-half pint of water is sufficient for eight gallons of milk. Stir the milk for two or three minutes so as to mix the rennet and milk evenly. Then let it stand with a clean cloth thrown over the boiler to hold the heat. The milk should not be disturbed for 15 or 20 minutes or until the curd is ready to cut. The simplest way of determining this is to insert the forefinger into the curd at an agle, until the thumb nail touches the milk. Make a slit in the curd with the thumb and raise the finger upward slowly. If the curd parts with a clean break leaving no particles of curd on the finger or in the whey, it is ready to cut.

In cutting, the special curd knives are best. They cut evenly. They consist of two sets of knives, one vertical and the other horizontal. Each one is a series of knives about one inch apart. By using them the curd is cut in cubes about one inch square. If these knives are not available the nearest thing to it should be used. The curd should be cut smoothly, nothing should be used in cutting that will break it up badly. A common bread toaster has been used for this with fair results.

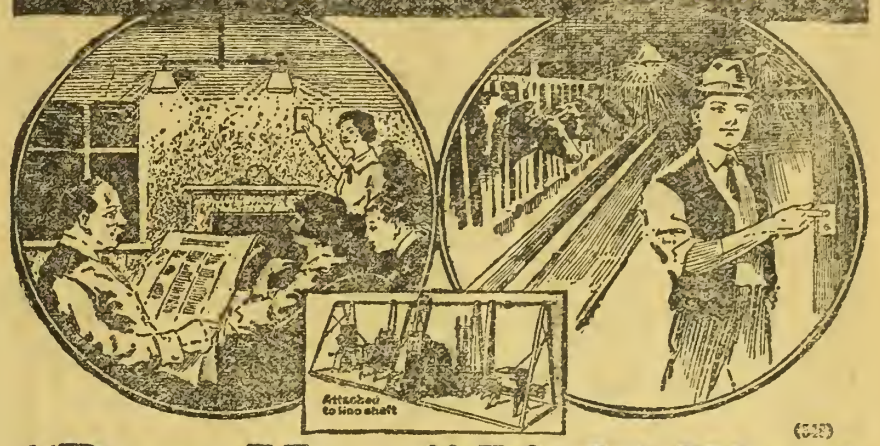
After the curd is cut it should be allowed to stand several minutes without being disturbed. By this time the curd particles will be firm enough so that the mass can be stirred without breaking them. The ida of stirring the mass is to distribute the heat evenly. As it is being stirred the temperature should be raised gradually to 98 or 100 degrees F. and held at that point for about 20 or 30 minutes, or until the curd is sufficiently firmed. For the farm cheese maker this can be best determined by taking a handful of the curd and pressing it gently for a moment and then opening the hand. If the curd particles are springy and fall apart, draw the whey off immediately and allow the curd to drain for a few minutes, after which it is placed in the molds. These molds are sometimes made of tomato cans with bottoms out for small batches. Any straight-sided circular receptacle may be used as a mold. Fill it with the curd and place a circular wooden follower on top. It is then ready for the press.

The press consists of a 10-foot wooden lever. A 2x4 scantling is good, one end placed under a cleat on the wall, the mold being placed some 2 feet from the wall, and the lever placed on top so that the pressure comes on the circular follower. A heavy weight such as a bucket of stones is hung on the other end of the lever. This gives enough pressure to expel the whey from the curd. Allow it to set one hour. Remove the pressed curd and wrap in one thickness of cheese cloth, a circular piece of the cloth covering the end. Dip the cheese in warm water and replace in the press and allow it to set under pressure for 24 hours. It is then removed and rubbed with dry salt, or allowed to soak in brine solution for a couple of days. If soaked, it should be turned every twelve hours and a little salt sprinkled on the exposed surface.

Next put it in the cure room. The cellar is best for this. The air should be moist in this room to keep the cheese from drying out. To keep the air right, a saturated blanket should be hung in the room and kept moist at all times. Turn the cheese every day for the first week. It is ready to use in six or eight weeks.—H. A. L.

Muskrat farming has given formerly worthless Maryland marshland a value of $30 to $40 an acre, the United States Department of Agriculture finds. In addition to the hides the carcasses are sold at 25 to 30 cents apiece for meat. They are considered a delicacy in some hotels.

CUSHMAN



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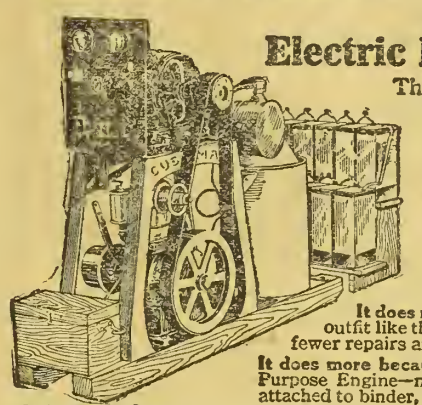

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The Heart of Virginia Keep.

(Continued from Page 13.)

"Very worried."

"And your mother?"

"Mother is not well."

"Headache?"

She nodded. Then, in a low voice:

"She—doesn't know yet, papa."

"Doesn't know! Hasn't Lewis seen her?" Glancing sharply in that gentleman's direction.

"I—I asked Mr. Lewis not to tell her."

"But my wire yesterday?"

"She was out when it came. And when she got home I didn't show it to her."

"Why didn't you?"

"For the same reason I asked Mr. Lewis not to tell her."

Keep was silent as though in a brown study.

"Papa," she asked suddenly, "what made you go away that night?"

Contracting his black brows at her, he glanced furtively over his shoulder; and his mien was so suggestive of an enemy of the law, constantly on his guard, that she could have wept. A wan smile flickered greyly at his lips as he replied in a covert whisper:

"Men who are in trouble often seek relief in the place I went to. In my particular case it was useless."

"I didn't mean exactly that," she said, watching him unhappily. "I was thinking of a message which came that night—the night you went away. A soiled, cheap-looking thing it was, addressed in lead pencil— Papa!"

A change so instantaneous and startling had come over him that involuntarily she seized his hand in alarm.

"Did you read it?" he gasped.

She felt his fingers tighten on her wrist with a strength that made her wince.

"O-only the address," she faltered, unable to look upon his twitching face.

"Then why do you attach such importance to it?" he demanded in a harsh, metallic tone she had never before heard him use.

"Papa, you shouldn't speak this way to me, even if you're not yourself."

"But what do you know about that n-note?" he insisted, a break in his voice.

"Nothing. You're going to tell me something though, aren't you?"

His fingers relaxed.

"Aren't you?" she persevered, though doubtfully.

"No, my girl."

"Not even if I want to know? And I do."

"I cannot tell you."

"Papa, why not let me know all?"

He looked at her in silence. The lines extending from nose to mouth became as purple fissures in wax. Under pretence of consulting his watch by the light behind them, he motioned to the detectives.

A deprecatory voice sounded beside Virginia. Turning, she recognized its owner; he was the sandy-haired intruder she remembered so well.

Mr. Lewis and the second detective joined them, and presently Lizbeth; and a minute later the party moved streetwards, the reporters crowding around Keep and peppering him with interrogative audacities until the lawyer took them in hand and talked to them a great deal without saying very much. Close beside Virginia walked old Lizbeth, her eyes rolling in fierce hostility against the men, her tongue mumbling solace to her mistress.

Lewis' motor car waited to convey his client to jail, where he would be held in custody pending the customary police proceedings.

Requesting the others to precede him, Keep lingered behind for a last word with his daughter.

"Hurry home, Virginia! Did you come in your car?"

"Yes. It's over in Market street."

"Well, bye-bye."

Her dark eyes came back to him.

Oh, papa ——!"

"Good night, Virginia. God help us all!"

"G-good night, dear. Good night!"

And then he was gone, and she was hurrying off with her black servant, with never a glance at the motor car, whirling away down the silent street, bearing him off to the heinous place she shrank from naming even in her thoughts.

Four of the newspapermen, including Trude, besieged her as she reached her car. Trude, wedging himself between her and the others, opened the door and helped her inside.

Murmuring a low, half-frightened "Thank you," she glanced at his face, remembered him vaguely, and looked around for Lizbeth, who in the confusion had become separated from her.

"Miss Keep——" he began.

"I have nothing for your paper," she declared a trifle wildly. "Nothing!"

"Go 'way fum yere, you-all! Ain't you 'shamed yo'selves!"

Thus Lizbeth, hornet-angry, as she clawed her way through the jostling men. Trude pressed them back with his elbows, gave a particularly persistent one a jab that fetched an explosive grunt, helped the aged woman, whose tongue wagged wrathfully against all alike, in beside her mistress and closed the door.

He turned laughingly upon his fellow workers, teeth flashing white against his ruddy skin.

"Well, boys, we didn't get much."

"Say! What kind of a boob are you?" angrily demanded the one whose ribs had been jolted. "Ill bet you crabbed Myers's flashlight on purpose."

Trude regarded him in pleasant good nature.

"That's a safe bet."

Then to the others:

"Boys, I've a five-spot in my vest that's hurting me. Let's find some painkiller."

It was some fifteen minutes later, and dawn's leaden lights were streaking the east, when Trude excused himself from his absorbent companions, gave them the slip, emerged from a side-door entrance in Eighteenth street, turned the corner at Market and made swiftly in the direction of the Union Station. Opposite the main entrance stood Virginia's car, unlighted. And when he drew near he found its lovely owner—just as he had expected to find her—doing ineffectual things with a ridiculous wrench, while Lizbeth poked around the motionless car clucking to herself like a ruffled hen.

"May I see what I can do?" he offered with easy cordiality. "My sister owns one I've occasionally tinkered with."

Misconstruing his motive, Virginia faced him resentfully, young shoulders drooping.

"Do you think it manly to take advantage of me, Mr. ——"

She groped for his name, could not recall it, and returned her attention to the disabled machine.

"You are doing me an injustice, Miss Keep."

But the thought that he was forcing an interview upon her by grace of her mishap was paramount in her mind.

"What possible interest can your readers have in me?" she challenged, without looking around. "Surely there are thousands of things of more importance to them."

Speculating upon her elusive Kentucky accent, he observed quietly to her back:

"You certainly have a healthy animosity against newspapers."

"I detest them."

"But the Publicist——"

"I've cancelled my order for it."

"You needn't have."

She made no answer. Indeed, she scarcely heard. Her mind was occupied solely with the problem of how to get home; and, lacerated as it was with yesterday's tearing shocks, it took hold of this newer, lesser misfortune with something akin to relief. She had no money with her; neither, of course, had Lizbeth, and the accident to the car seemed beyond her to locate, much less mend; and even if she took a cab and trusted to finding the fare at home she disliked to leave her car here. Then she became unpleasantly aware that the stubborn young reporter was still there behind her and was still talking:

"I saw she'd gone wrong—that's why I came back."

She turned and looked at him over her shoulder, one hand resting on the front wheel-guard.

"You say you knew my car was broken before you went away?"

"Sure! I saw she wouldn't budge when you tried to start her."

She faced him now, a dark, slim, long-coated young figure, standing as lithely straight as a youthful Indian.

"I didn't want those other fellows bothering you."

"Oh-h!" dark eyes widening. "I see. And yesterday at home you——" She bit her lip.

He extended his hand.

"If you'll let me have the wrench——" he suggested.

She hesitated, regarding him critically. Then she held out the absurd little nickelled implement. He took it, threw off his coat and rolled up his shirt-sleeves, struck a match and went straight to the seat of disorder. In five minutes, however, he said hopelessly:

"No use. Wait an instant and I'll get you a taxi."

Deaf to her expostulations, he sped off toward Eighteenth street, hatless, coatless, and in an incredibly short time was back, not with a taxi, but with a St. Louis substitute—a one-horse "hack," a bit loose here and there and a trifle rusty, yet serviceable.

"It's awfully good of you," she declared, handing him his hat and coat, which she had been holding. "But what shall I do with my car? Do you think it'll be safe here?"

"No, I don't," he admitted, eyeing the machine dubiously. "In these restless days when hot stoves are stolen and whole stores carted away, a toy like this is not thief-proof. But I'll attend to that—find a garage, wake somebody up, have it taken care of. Don't worry."

Lifting her eyes gratefully to his clean, sun-browned face, there kindled within her, for the first time since the beginning of their quasi-acquaintanceship, a spark of personal interest. She noticed how athletically big he was, how attractive, how wholesome, how undeniably good-looking; and for the moment her obsessing sorrow was obliterated. She was sub-consciously aware, too—though too dimly as yet for conscious acknowledgment—that she was ashamed of her father, burningly ashamed; and this saddened her without apparent cause, and made her glad of any alleviation, however slight or remote.

"You are very thoughtful, Mr.—Mr.—"

She crimsoned.

"Really, I'm mortified to death. I fear I've forgotten your name."

"A. Dempster," he supplied; and called himself an ass.

"I thank you ever so much, Mr. Dempster."

"You shouldn't prefix the 'Mister.'" He hesitated, speculating again upon her evasive Southern drawl. "A. Dempster is my baptismal name. My surname is Trude."

"Oh!" perplexedly. "I see." But she did not see.

"Well, good night—or good morning, rather."

She stepped into the rickety hack, followed slcepily by Lizbeth; and they went rumbling and jolting over the cobblestones through the greying dawn. The old negress plumped herself heavily in a corner of the hard seat, and Virginia nestled into the other, tired body relaxed, slender, silk-clad ankles crossed on the footstool.

She was vaguely surprised—and almost happy with the relief—that the wrenching mental pain, to which she had grown accustomed during the past four days and which had reached its acme an hour ago, was now numb. But it was not gone. It was only pacified temporarily, somewhat like a violent tooth treated with cocaine. Beneath the false assuagement it was alive and growling, ready to break forth and inflict fresh pangs upon her.

"Don't you think he's rather nice, Beth?"

"Who dat you 'ludin' to, chile?"

"Mr. Trude."

Lizbeth's sleep-laden eyes closed drowsily.

"He all right, I s-pect."

"I wonder," mused Virginia, yawning deliciously "why he said his name was Dempster?"

"Umph?"

A silence. The decrepit vehicle rattled and creaked loosely on through the silvering morning.

"Asleep, Beth?"

Lizbeth stirred. The old hack lurched drunkenly around a corner. Lizbeth started up, gouging her gnarled fists into her eyes.

"Is we dar a'ready, chile?"

Finding herself still in motion:

"What dat you axin'-ol' Beth?"

"Oh, nothing much!" yawned Virginia. "Do you suppose the 'A' in his name stands for Arnold!"

Trude, hands in his trouser pockets, watched the blurred black shape of the vanishing cab grow rapidly indefinite in the dissolving shadows; waited until it zigzagged across the street car tracks and disappeared down a cross street. Then he smiled somewhat crookedly, slipped on his coat, swung on his heel and started back to the side-door entrance to learn the address of the nearest garage.

"A dollar to a stumer cheque," he wagered with himself, "she's forgotten my name again."

CHAPTER X.

A Perturbed Puritan.

Virginia did not go down to breakfast that morning, but had Lizbeth bring coffee and waffles to her room.

As Lizbeth bustled in with a napkin-covered tray:

"You told mother I was indisposed, Beth?"

"Yas, chile."

"Is she at breakfast?"

"Yas, chile."

This was not exactly true. At that moment Mrs. Keep was downstairs fencing with Philip Sturgis in a polite dialogue which travelled meaninglessly in a circle, like a dog chasing its tail. Sturgis, nervously agitated, had popped in for a moment to proffer a word of sympathy. Mrs. Keep, ill in bed last evening, had seen neither friend nor newspaper, and therefore had no idea what the fidgety little man was about. He thought, of course, she knew all. Nor was he subsequently disillusioned. After the frequent manner of those who speak in generalities and swaddle their thoughts in formal verbiage, they parted in a puzzled nebula of mutual misunderstanding.

"Beth," said Virginia, listlessly buttering a waffle she had no intention of eating, "I wish you would get me a morning paper."

The old negress departed importantly on her mission, and returned with the Publicist—which, curiously, had been delivered despite the stoppage of subscription—folded in such wise that the first page head-lines were hidden. Virginia reached for it, then swiftly drew back.

"Burn it, Beth!"

She spoke vehemently, fearful lest she should succumb to the peculiar impulse to read what she believed it contained. Memories of crimes she had seen blackly blazoned—and read disinterestedly, so far removed had they been from her sheltered, well-ordered life — were thronging upon her.

The newspaper—devoid of Keep's name except in the Second National Bank's monthly statement on an advertising page—had shrivelled to ashes and gone whirling up the chimney of the open grate when Mrs. Keep entered.

Some perfunctory words of condolence wedged a preliminary to her real object. After Lizbeth had departed with the breakfast things she arrived at it:

"My dear, I am afraid something untoward has happened to your father."

(Turn to Page 24.)

It's Hog Killing Time and Here's How to Do It.

(Continued from Page 3).

take off as much of the hair and scurf as possible from the scalded (rear) part of the body.

Now loosen the tendons in the hind legs, and insert the gambrel, or put the hook through the hock-joint of one leg, and scald the front part. In loosening the tendons to insert the gambrel, take care that both tendons on each leg are loosened. If only the upper one is loosened, the hog may fall after it is hung up, as this tendon alone is not strong enough to carry the weight. Because the water is not now so hot, it will take a little longer to scald the fore part; but keep the hog in motion in the water.

When the test shows the hair to come off readily, again pull the body out upon the table. Scrape the head, ears and feet first, as they are harder to clean and will retain the heat a shorter time than the other parts of the body. Hair and scurf having been mostly removed, pour hot water over the body; begin at one end, and shave off whatever hair is left. Then pour a pail of cold water over the body, and scrape from the surface whatever dirt or scurf may remain.

The hog is now ready to be hung up, as the most convenient position for the removal of the internal organs. A handy place on a tree or the side of a building will suffice, so long as there is room to work. A ladder may be used.

After the hog is hung up, a pailful of hot water should be poured over the body; and, with the sharp edge of the knife at right angles, the carcass scraped to remove any remnants of dirt. Now, to remove the viscera, cut through the midline, beginning at the top, cutting down to the head. Next loosen the rectum by cutting around on each side and pulling it out between the pelvic bones. Place the knife between the first and second fingers of the left hand, inserting the fingers where the opening has been made, and with the right hand force the knife down to the breast bone. Be careful that the knife

does not stick through between the fingers. In this way, the fingers will serve as a protection to the intestines and a guide in making the cut. After this opening has been made remove the omentum or fat which surrounds the stomach. Then remove the intestines and stomach; cutting the gullet as soon as it is drawn up far enough.

Next, loosen the tongue by cutting each side of it, just inside the jawbone, and pulling it out with a jerk upward. Then cut through the breastbone, beginning at the front end and cutting upward slightly to one side. Now remove the pluck—including the heart, lungs, aesophagus and wind pipe—by cutting the membrane which divides the thoracic and abdominal cavities; cutting just between the light and dark areas of the diaphragm. Cut down along the backbone, and it will be easy to pull out the entire pluck, together with the tongue. Then pour some cold water through the chest cavity, to cleanse it of all foreign matter and blood.

It is well to remove the leaf-lard or kidney fat while the carcass is still warm, as this facilitates cooling the carcass and lessens the danger of the hams and loins souring. The leaf-lard should be spread out on a table to cool, with the outer surface, on which there is a thin membrane, down. It is well also, to split the carcass through the middle while still warm, to further insure thorough cooling, and make it easier to handle. If this is not done, take a stick about 18 inches long and spread the sides, so as to allow a free circulation of air.

In splitting the carcass, with saw or cleaver, be careful to cut as near the midline as possible. A saw is preferred except for an expert.

Cutting Up Hogs.

Pork carcasses should not be cut up until well cooled. Much pork is spoiled in curing from lack of proper cooling in the carcass. The carcass is customarily divided into four parts—head, shoulder, middle and hams.

The head is readily removed by cutting through the flesh surrounding the Atlas joint with a knife; making the cut about an inch back of the ear. The head may be used for sausage or for making head-cheese. The jowl is very acceptable for use with baked beans.

The shoulder is cut from the middle between the fourth and fifth ribs, counting from the front. Or, if a large amount of shoulder is desired, the cut may be made between the fifth and sixth ribs. If more loin is preferred, cut between the third and fourth ribs.

After its removal from the middle, remove from the shoulder the ribs and that part of the backbone to which they are attached. These ribs are the "spare ribs." In cutting them out, all the meat possible should be left on the shoulder, which should then be trimmed for curing.

In case only a small amount of cured meat is desired, the top of the shoulder, called the "butt," may be removed, cutting at about one-third the distance from the top, parallel with the top line. The fat on the shoulder-butt may be used for lard, and the lean portions for steaks or roasts. Trim off all rough edges on the shoulder, and use the trimmings for sausage. If left, they will be wasted. All meat that is to go into the brine should be smoothly trimmed. Remove the foot at about an inch above the knee-joint.

In cutting the middle from the ham, make the cut just back of the rise in the backbone, at an angle of about 45 degrees, cutting toward the root of the tail. Much loin meat is thus saved which would otherwise be trimmed off the ham for sausage. The middle is divided into loin, fat-back, spare ribs and bacon strip. The loin and fat-back are cut off in one piece. The cut is made parallel to the backbone, and just below the tenderloin muscle on the rear part of the middle. Remove the fat on the top of the loin, being careful not to cut into the lean meat. The loin is used for chops or roasts, the fat back for lard.

Next remove the ribs from the bacon-piece, cutting close, so as to leave as much lean meat as possible on the bacon-piece, as it is one of the most highly prized parts of the carcass. The bacon-piece may be left entire or cut in two pieces. Before trimming the edges, take some flat instrument and straighten the sides by pounding on the surface. Then trim all edges square and smooth.

Trim from the hams all rough and scraggy edges, but expose as little of the lean meat as possible, because the brine will harden it. Cut the leg off about an inch above the joint.—Minnesota Extension Bulletin.

The Inter-Mountain Fair and Livestock Show.

(Continued from Page 4.)

name the fair bears, it might be well to work up community exhibits from some of the adjacent counties. The county agents of Delta and Montrose, for example would, I am confident, be willing to co-operate with our county agent in an attempt of this kind.

Every Day a Big Day.

Again, why should not every day of the fair by a "Big" day? To accomplish this end, it would be necessary, I suppose, for the management to provide for each day either some amusement feature out of the ordinary that would attract the people, or some amusement feature in the ordinary that from its hold upon the popular imagination would of necessity prove a drawing card. Airplanes are not yet so common as to have lost their novelty. Might not something along this line be staged for one day? For another day, how about a game of baseball between Grand Junction and Canon City? Or between Fruita and Delta or Montrose? Edgar A Rider makes, it seems to me, a valuable as well as a novel suggestion: That one day, preferably the first day, be set apart as "community day," and that on that day there be an agricultural parade, in which community floats bearing characteristic products of the different sections shall be featured. Mr. Rider suggested as an example of what he had in mind, a float showing what could be produced in a dry farming district.

Commercial exhibits of agricultural products should, it seems to me, receive more emphasis and encouragement. For example, take potatoes. Potatoes weighing three or four pounds have no commercial value. They do not appeal to the hotel keeper, to the restaurant man, or to the housewife. On the other hand an exhibit of potatoes, say, a peck of commercial size would be not only more attractive than a jumbled collection, but also a valuable object lesson to the potato growers themselves. The same would be true of other agricultural products. Do not, however, bar the freak products, the products of abnormal size and growth. We all look for them and would be disappointed if they were not in evidence. They add, in a marked degree, to the gaiety of the occasion. They are to county fairs what the sideshows are to the circus. For this particular fair, whatever may have been the solemn, expert verdict of Fort Collins, the popular verdict at any rate assigned without a dissenting vote, the prize for a freak product to Frank Du Cray of Fruitvale, who had on exhibition a banana squash weighing ninety-nine and one-half pounds! In fact, it was of such elephantine proportions as to length, girth, and weight, that the management balked and insisted that it should be entered—not as banana squash, but as a "monstrosity" pumpkin.

Now—not next March nor next July—is the time to begin to plan and work for a fair to be held the coming year. Now is the time, not to ask whether we shall have a fair next year, but to decide that we shall have a fair and one that shall be first-class in every particular, and to lay our plans accordingly. Let three public bodies get busy immediately on this matter: The County Farm Bureau, the Mesa County Purebred Breeders' Association, of which T. A. Butcher is president, and the Chamber of Commerce of Grand Junction; and I venture to predict that as a result of the harmonious, enlightened cooperation of these three bodies we shall have at Grand Junction in 1921 an Inter-Mountain Fair and Live Stock show that shall attract attention far and wide and advertise, as nothing else can, not only to our home folks, but to visitors and homeseekers as well, the wonderful resources and possibilities of Mesa county and adjacent inter-mountain territory, and which will at the same time, bequeath to the management, not a deficit, but an abounding surplus.

Find the Magazine Helpful.

Western Farm Life:

I am sending you a check for my renewal to Western Farm Life. We are mighty well pleased with your paper; in fact, we couldn't get along without it. We are new farmers and always find something in Western Farm Life that is very helpful to us. Dear Thomas Jefferson Putnam and Josephine; they are great! They are from our part of good old Missouri. And Miss Douglass, I enjoy her pages so much; in fact, it all is a splendid paper for the farmer. —Mrs. Riddle, Holly, Colo.

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Each list of words must be accompanied by a two-year subscription at one dollar, either your own subscription or some one elses.

This contest is open to those who are not subscribers as well as those who are subscribers.

No employe of WESTERN FARM LIFE will be allowed to participate in this contest.

Do not use more letters than there are in the word AGRICULTURE to make any one word. For instance, you could not use the word "reel," as there is only one "E" in the word AGRICULTURE.

Your list must reach this office not later than December 15th, 1920.

All words used must be defined by Webster's International Dictionary, and this authority will be used by the Judges.

You may send in as many lists as you wish, but each list must be accompanied by a two-year, one-dollar subscription to WESTERN FARM LIFE.

Each person who sends in a list of words together with one dollar for a two-year subscription will receive a prize, whether you win the ten-dollar bill or not.

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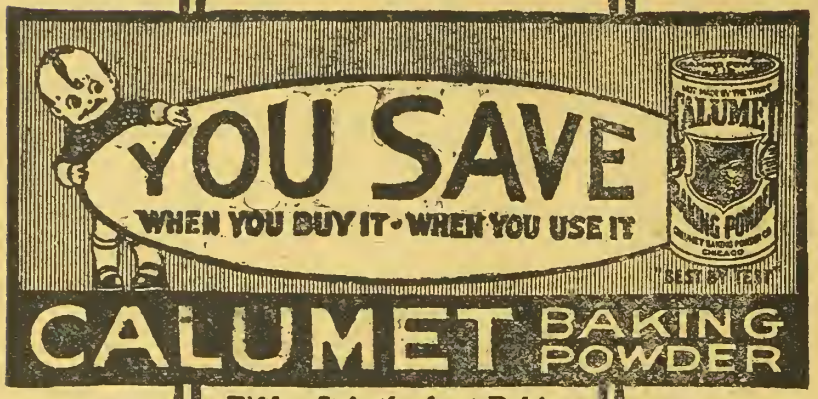

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Calumet Nut Cookie Recipe

—½ cup butter, ½ cup sugar, 2 eggs, ½ cup flour, 1 level teaspoon Calumet Baking Powder, ¾ cup chopped nuts, 1 teaspoon lemon juice. Then mix in the regular way.

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The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Time.

"Why sit'st thou by that ruin'd hall,
Thou aged carle so stern and grey?
Dost thou its former pride recall,
Or ponder how it passed away!"

"Know'st thou not me!" the Deep Voice cried;
"So long enjoy'd, so oft misused—
Alternate, in thy fickle pride,
Desired, neglected, and accused!

"Before my breath, like blazing flax,
Man and his marvels pass away!
And changing empires wane and wax,
Are founded, flourish, and decay.

"Redeem mine hours, the space is brief—
While, in my glass the sand-grains shiver,
And measureless thy joy or grief,
When TIME and thou shalt part forever."

—Sir Walter Scott.

A Thirst for Thrift.

Every magazine, especially women's magazines, and every woman's club is taking up a cudgel of some sort and waving it with a cry of "thrift"! Thrift! But do many of us know how to be thrifty or what to do with thrift after we get it?

As one magazine writer puts it, "many of us think of thrift as a present day's denial for a future day's spending." That isn't thrift. It's sort of saving up for a spree. This same writer, Samuel Crowther, in the North American Review, goes on to say: "Real thrift, considered in all of its economic relations, is not based primarily upon self-denial, but upon wise spending, upon getting one's money's worth, and upon the exercise of a discriminating judgment, so ordering one's affairs that there will be a margin between income and outgo, that the margin will be returned for the use of 'society.'"

That means thinking and it's what most of us hate to do. The moral for thrifty people is simply this, that more real pleasure and more lasting profit will come from sitting down and reasoning out what we and our families actually need and then going with the best of our ability and getting it, rather than wailing over other people's sins in making high prices and then purchasing much cheap stuff.

There is not going to be a sudden millenium of easily acquired luxuries or necessities. No farmers' organization is going suddenly to sell all our products at high prices and purchase all our clothes at low ones. Each one of us has to solve the problem for ourselves and in each one of us lies the remedy and the possibility for real thrift.—E. D.

The Clothing Schools.

There seems to be a lot of interest this year in what to wear and how to fix it. There are several groups of women in Colorado who have decided in the very near future to get together for three or four days and make over old garments.

Mother's old suits are being made into charming school dresses for daughters, suits are coming out as dresses and skirts making themselves into blouses in a truly remarkable fashion. In Arapahoe and Larimer counties in particular these "remodeling schools" are being held this fall. The women can help each other with ideas, with fitting and cutting and in some instances even exchanging material for trimming.

Along with the remodeling schools several days have been given to the "Betty bees" mentioned in a former issue of Western Farm Life. Many women in Adams, Arapahoe, Logan and Larimer counties are making duplicates of themselves and learning that these home-made paper dress forms are very practical. By the end of the year we hope to give you the number of forms made.—E. D.

Girls' Clubs at the State Fair.

The Girls' Clubs held most interesting demonstrations at the Colorado State Fair. While the boys of the camp spent their time in stock judging and visiting the exhibits in stock and crops, the girls gave demonstrations in canning, sewing and poultry culling. These demonstrations began at 8 o'clock in the morning and continued until 5:30 in the afternoon, with one and one-half hours off at noon. The demonstrations averaged 140 minutes in length.

The sewing demonstrations varied greatly in subject matter. The Larimer county team won first place. The team was from District No. 10, just west of Fort Collins. The leader is Mrs. R. G. Maxwell and the girls are: Jaunita Orr, Velta Davis, Lily Anderson. The demonstration showed the drafting of the pattern for an apron. After the girl was measured and the pattern drafted, the girls cut, basted, fitted and sewed the apron, showing the types of seams and stitches used. The prize won by this team was a White sewing machine. This machine belongs to the club of which these girls are members.

The team standing second on the list was from Douglas county and consisted of Hazel Crow, leader; Crystal Ellis and Eva Shiveley, members. These girls gave a very strong demonstration and well deserved the distinction of second place.

Third place went to the Saguache county sewing team of Mirage. This team was led by Mrs. Middagh and was composed of Ellen Noland, Edith Noland and Rose Atencio. These girls gave the demonstration of making a slip. They brought in many items of interest in selection of colors and materials for garments. One interesting feature was a chart showing, by pictures, the complexion of each girl in the club and showing the color of garments best suited to the individual girl. Another interesting digression was a discussion of laundering, which was also illustrated by charts.

The canning teams as a whole were much stronger than any previous year. They showed more skill in workmanship and more originality in details. The Mesa county team and Conejos team canned in tin only. Several teams canned both in glass and tin.

The Morgan county team ranked first and showed a wonderful ability in handling products and great speed. The girls were good talkers and "sold" their demonstration to the audience. Mrs. G. B. Hanscom was their leader and the team consisted of Lillian Schrack, Mary Work and Louise Starret. These girls won the Pressure Cooker donated by the Denver Pressure Cooker Company of Denver.

The second team was from Denver. These girls put up a good fight for the opportunity to represent Denver at the State fair. They were chosen by contest, the best team from among several hundred canners in Denver. The team was Mary Frances Brodhag, Dorothy Hunn and Orion Brodhag, with Mrs. Edwina Ramsey as leader. The Denver team won a Burpee can sealer, donated by the Burpee Can Company of Chicago.

Logan county came out third in the contest. The girls were Mary Brown, Hilda August and Pauline Foy. Their leaders were Miss Grace Breed and Miss Ruby Coffin. The girls won canning equipment, donated by the State Fair Commission.

The poultry team work was especially good, considering the fact that this was the first state contest held in poultry. The teams demonstrated poultry culling and told and illustrated many interesting points. They demonstrated with live fowls.

The team winning first place was from Logan county. They were Lillian Foy and Eileen Dolan. They won a Standard Queen incubator donated by the Queen Incubator Co. of Lincoln, Nebr.

The second team were from Kit Carson county and they won poultry house equipment donated by the State Fair Commission.

The champion team of all lines of work was the Larimer county sewing team. This team and the Kit Carson county stock judging team will represent Colorado at the interstate club meet at the National Western Stock Show in Denver next January. At this time two teams from each of the following states will demonstrate: Wyoming, Montana, New Mexico and Colorado.

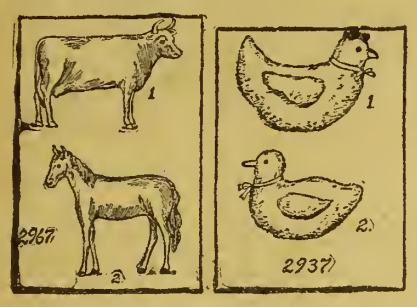
"Candied Citron."

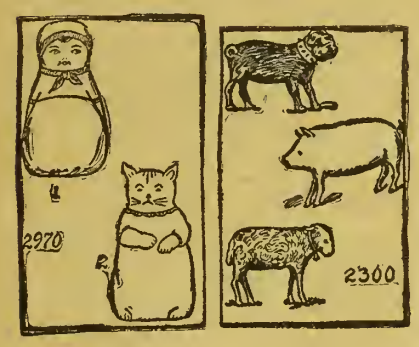
A request comes from Holly for a recipe for candied citron. Can any of the readers send in good suggestions? —E. D.

There are two ways to can corn. One is in cans and the other is in the silo. Can all you can both ways.

Special Christmas Patterns.

Patterns for making dolls and toys at home, for use as Christmas gifts, are illustrated in the following. These patterns are sold at the usual rate of 12 cents each, which includes postage. Orders should be sent in at once if they are desired for Christmas use, as it takes from ten days to two weeks from time order reaches Western Farm Life to secure delivery on the patterns. The mails have been badly congested for many months and the Christmas rush will soon be making itself felt, hence the necessity for placing orders for these special patterns early. Address all orders Pattern Department, Western Farm Life, Denver, Colo. Stamps accepted, if carefully protected so that they will not stick to the letter or be stuck together.





1902—Doll's Set of Baby Clothes Santa Claus May Bring to Mother's Girl. Cut in three sizes for dolls: 16, 18 and 20 inches in length. It requires 2⅛ yards of 27-inch material for the dress, 1⅞ yard of 24-inch material for the wrapper, and 2⅛ yards of 24-inch material for the coat, for an 18-inch doll. Just the thing to please little mothers. There are dolls and dolls, but no doll so dear to the heart of a doll's mother as one dressed in baby clothes. The designs here shown will be found easy to make as they are cut on simple, one-piece lines. The dress may be made of nainsook, lawn or batiste and trimmed with bands of lace or embroidery. The coat will develop nicely in cashmere, silk, henrietta or Bedford cord. The sacque and kimono will look well made of flannel or flannelette, and the cape of silk or flannel.

2275.—New Dress and Hat for Miss Dolly. Every "doll mother" will admire this design. The dress is pretty and easy to develop, and the hat is nice for all sorts of materials. Lawn, batiste, crepe, chambray, silk, satin or linen could be used for the dress, with any desired trimming of lace or embroidery. The hat is smart for pique, lawn or linen, velvet or corduroy. Cut in 6 sizes: 16, 18, 20, 22, 24 and 26 inches in length. Size 24 requires 1½ yard of 27-inch material for the dress, and ⅝ yard for the hat.

2300—An Attractive Set of Toy Animals. These models make fine toys for little children. Made of flannel, plush, toweling, eiderdown, or flannelette, they are of course soft and unbreakable. The set includes a sheep, dog and pig. These patterns are cut in one size ONLY. It will require ½ yard of flannel for the sheep, ¾ yard for the dog, and ⅝ yard for the pig.

2970—Set of Pleasing Toys for the Nursery. Here is a comfortable roly-poly doll and a cunning cat. Toweling stuffed with cork would make these models floating toys. Plush, felt, flannel, outing flannel, velvet, drill and crash could be used. The doll could be made of different material below the arms. Cut in one size. Either style requires ¾ yard of 27-inch material.

2273—Dainty Set for Dolly. Here is a nice "one-piece" dress with a smart sailor collar and stylish pockets, a petticoat and combination undergarment, so that dolly may be dressed both up-to-date and comfortably. It will take just a few of mother's patches to make any or all of this outfit. Lawn, cambric, or muslin, is nice for the undergarments. The dress may be of satin, silk, cambric, percale, linen, lawn or cashmere. This pattern includes all styles illustrated cut in sizes for dolls, 16, 18, 20, 22, 24 and 26 inches in length. The dress requires 1¼ yard of 27-inch material, the petticoat ½ yard, and the combination ⅝ yard for an 18-inch doll.

3061—New Set for Miss Dolly. This attractive group comprises a simple dress, good for lawn, batiste, silk or dimity, a stylish cape that may be developed in satin, flannel, velvet or silk, and a bonnet to match the cape or to be of lawn, velvet or embroidery. Cut in sizes for dolls 16, 18, 20, 22 and 24 inches in height. Size 18 requires ⅝ yard of 36-inch material for the dress, ⅝ yard of 40-inch material for the cape, and ½ yard of 20-inch material for the bonnet.

2937—Set of Attractive Nursery Toys. One may have these toys of toweling, terry cloth or eiderdown. The filling may be of sawdust, cotton batting, paper snips, cork or other substance that will make the toy float. Cut in one size. It requires ⅝ yard of 24-inch material for either toy.

2967—Set of Toy Animals. These toys will please the little tots. They may be made of toweling, flannel, felt, plush, velvet, and other pile fabrics. For stuffing cork could be used if one wants a toy that will stand wetting; or one could use sawdust, bran or cotton. Cut in one size. The cow requires ⅝ yard of 27-inch material, and the horse ⅞ yard of 36-inch material.

Soap for Cold Water.

Mrs. George A. Myers of Piedmont, Wyoming, has sent in the following inquiry:

"Would like to have a good recipe to make laundry soap, one which will lather in cold water. I make the lye soap, but can only use it in the wash boiler. In warm or cold water it curdles."

From the statement that the soap "curdles," it would look as if there were a mineral in the water which makes it "hard," though this may not be so. If the water is hard, that, of course, increases the difficulty. Borax added to soap increases it "lathering" properties.

Study of recipes failed to reveal any statement as to whether they would lather in cold water, but one of the women of the Agricultural College volunteered this information: A package of borax (about 14 ounces) added to soap when it is being made makes it lather more easily. One package of borax should be added to five pounds of grease and a small can of lye.

We hope this information proves helpful to Mrs. Myers, but she and the writer will welcome suggestions from any of the readers who have had experience along this line.—E. D.

Making Over Garments.

It is economy to make over garments when—

1. Materials are good enough to warrant making over.
2. Materials are appropriate in textures, color and pattern for purpose intended.
3. The cost of new material is saved.
4. The work of remaking is not greater than the cost saved in material.
5. Materials on hand can be utilized.

Suggestions for remodeling:

Woman's long coat to: short coat, child's coat, skirt, one-piece dress.

Woman's suit to: misses' suit, suit for boy, dress.

Man's suit to: suit for boy, overcoat. Pieces used in quilt.

Woman's dress to: remodeled by combining with other materials; jumper suit with guimps; girl's dress.

Wool skirt to: ripped, washed and recut, coat for child, bloomers.

Wash skirt to: ripped and recut in prevailing style: middy, rompers, aprons, petticoat.

Adult's garment to: recut for child; seams overcast or flat fell.

Night gown to: blouse for boy; apron with bib; sport shirt, short sleeves and collarless.—Edith Charlton Salisbury in C. A. C. News Notes.

Promising.

"Every time the baby looks into my face he smiles," said Mr. Keekins.

"Well," answered his wife, "it may not be exactly polite, but shows he has a sense of humor."—Pacific Unitarian.

Poultry Specialist for Colorado.

The farm women of Colorado will be interested in the announcement that Miss Mavea G. Allen, a graduate of the Poultry Department, Cornell University, Ithaca, New York, has been engaged as poultry specialist by the Extension Department of Colorado Agricultural College. Miss Allen will spend her time traveling over the state to assist in developing profitable poultry

Mavea G. Allen.

production on the farm. Her work will be largely with the county agents and home demonstration agents and will include poultry culling demonstrations, selection of laying stock and advice and suggestions on breeding, feeding, marketing and other practical features of poultry raising.

Miss Allen is a Colorado girl, having graduated from Colorado Agricultural College at Fort Collins in 1915, following which she went to Cornell University for her Master's degree. Her major work at Cornell was done in the marketing of poultry, which is one of the most important problems that faces producers at this time.

The Use of Vinegar Bee.

The use of "vinegar bee" in the preparation of vinegar has been steadily increasing in the last few years, some housekeepers preparing in this way all the vinegar they use.

The making of vinegar consists of the addition of vinegar yeasts and vinegar bacteria to a sugary liquid. These two groups of organisms each produce a distinct change but each is dependent upon the other. If it is possible to secure the yeasts and bacteria separately (pure cultures) it is best to add the vinegar yeast and when the active gas production has subsided to add the vinegar bacteria.

Although little that is definite is known about the vinegar bee, a study of it seems to indicate that it is a mixed culture of vinegar yeasts and bacteria. The organisms found in the bee may produce good or poor results in vinegar. If the vinegar-producing organisms predominate, vinegar will be made, but if other organisms are prescnt in large numbers vinegar may not be formed and the sugar and molasses used will be wasted. As long, therefore, as we work with impure cultures whether or not vinegar is secured depends upon the quality of the "bee."

In appearance, the vinegar bee represents a small section of a head of cauliflower. It may be dried and kept for an indefinite time.

Preparation of vinegar from vinegar bee:

Method 1—1 cup vinegar bee; 1 cup sorghum or molasses, best quality; 2 quarts warm water.

Add vinegar and a good quality of sorghum, to the water. Let stand for five days. The bee will double its bulk. At this time, remove the bulk of the bee for future use and let the vinegar stand for from three to five weeks so that the bee may act upon the syrup, producing vinegar. From the time the bee is added, the mixture should stand in a fairly warm place, such as the back of a stove or a warm kitchen, or in the sun.

Method 2—1 cup vinegar bee; 2 quarts warm water.

First day: Add 3 tablespoons sorghum and 2 tablespoons brown sugar.

Second day: Add 2 tablespoons sorghum and 1 tablespoon brown sugar.

Third day: Add 1 tablespoon brown sugar.

Fifth day: Remove bee and strain vinegar.

Let stand three weeks in a warm place.

Inquire of the Home Demonstration agent where to get these bees. They may be secured for 25 cents.—Laramie County (Wyo.) Farm Bureau News.

Ten 10,000-pound cows will produce as much milk as twenty 5,000-pound cows; it takes only one-half as much time to feed ten cows as twenty; besides, one man can milk ten cows, while it takes two to milk twenty.—The County Agent.

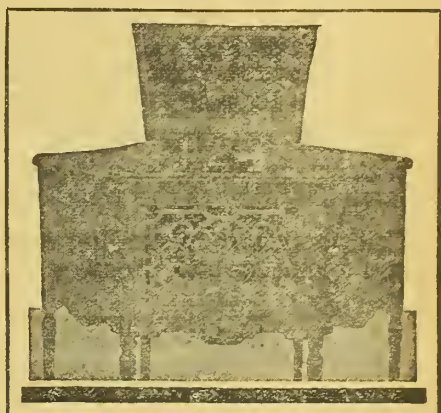
Another reason why the pressure cooker is a money saver: By its use cheaper foods may be made appetizing.

Genuine Aspirin

Name "Bayer" means genuine
Say "Bayer"—Insist!

BAYER

Say "Bayer" when buying Aspirin. Then you are sure of getting true "Bayer Tablets of Aspirin"—genuine Aspirin proved safe by millions and prescribed by physicians for over twenty years. Accept only an unbroken "Bayer package" which contains proper directions to relieve Headache, Toothache, Earache, Neuralgia, Rheumatism, Colds and Pain. Handy tin boxes of 12 tablets cost few cents. Druggists also sell larger "Bayer packages." Aspirin is trade mark of Bayer Manufacture Monoaceticacidester of Salicylicacid.



Real Music From a Phonograph

If you want a phonograph with no "tin can" in it, and no needle scratch, hear

The Electrella Reproducograph

"World's Greatest Talking Machine"
NO SCRATCH! NO BLAST! NO ECHO!
TRUE REPRODUCTION!
There is dealer territory open.

Universal Phonograph Co.
221 Fifteenth St. Denver, Colo.

ESTABLISHED 1879 Stark JEWELERS

Bracelet Watches

For Ladies are most practical as well as ornamental

709-711 Sixteenth St., Denver.

BECK SYSTEM DENVER
CORRECT SHOE RE-MODELING

Save $10 on your next pair of **SHOES**

We make your old shoes better than new with all their old comfort. Send them parcel post.

BECK SYSTEM, 1519 Champa, Denver.

1000 Sixteenth Street Denver

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Diamonds and Good Jewelry

We Specialize On Watches and Watch Repairing

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FORD'S, 1029 16th Street Denver

Develops Films. Print Pictures. Mail Orders Solicited. Catalog Free on Request.

Why a Breeder's Card

IN WESTERN FARM LIFE

Because It will keep your name and the name of your herd constantly before the breeders and livestock farmers of this territory—Colorado, Wyoming, Idaho, Utah, and New Mexico—the greatest livestock country in America.

IT WILL CARRY YOUR STORY twice each month to 55,000 Western Farmers and Stockmen who are interested in raising purebred animals.

MANY OF THE LIVESTOCK MEN will be in the market for purebred animals during the coming months. Some will perhaps not want to make purchases until next summer, perhaps some will not be in the market until a year from now, but your card running in each issue of Western Farm Life will be getting in its work, and by the time they are ready to buy, your card will have so fixed in their minds the kind and quality of animals that you have for sale that they will be influenced to communicate with you.

A REGULAR STANDING ADVERTISEMENT

WILL HELP BUILD A REPUTATION for you, and a profitable market for your herd.

WESTERN FARM LIFE is now carrying about 45 Breeders' Cards in each issue. The best evidence that these cards are profitable is the fact that most of these advertisers renew their contracts from season to season.

WE ARE MAKING A SPECIAL RATE on Breeders' Cards to Western Livestock men to encourage them to carry a card each issue throughout the year.

Full particulars regarding cost of cards, etc., will be mailed to you upon request. Address

BREEDERS' DEPARTMENT
WESTERN FARM LIFE,
1518 Court Place Denver, Colo.

In wet weather you can hold fast to your job if you wear a

Fish Brand Slicker

DEALERS EVERYWHERE

A. J. TOWER COMPANY
ESTABLISHED 1836
BOSTON
MASS

2021

Wool Army Shirts

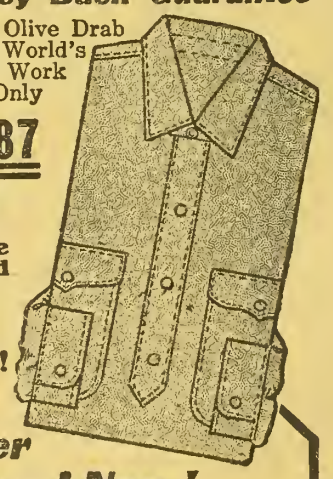
Money Back Guarantee

Genuine Olive Drab All Wool World's Greatest Work Shirt! Only

$2.87

Postage Prepaid

A Real Bargain!



Order Several Now!

No. 200 — Wool Army Shirts. Regulation U. S. Army Olive Drab. Breast interlining. Reinforced elbows. Double sewed seams. Made of best wool shirting. Thoroughly laundered and repaired. New ones cost over $8.00 Big shipment just received—but they'll go quickly. Money refunded if not satisfactory. Order at once.

FREE BIG BOOK of New and Used Army Goods. Write!

Price each, delivered prepaid, only **$2.87**

CARNIE - GOUDIE CO.
Dept. W. L. Kansas City, Mo.

A SPECIAL FACTORY CUT PRICE

U. S. Officer's Shoes

Hand sewed, first grade factory, cut-down price. Direct to you at only **$6.85** Made of the best Waterproof Mahogany calf leather. If these shoes are not just as we say, send them back. You do not lose a cent. Retail price of this shoe is $10.00. Built for work and dress at the same time. If you are sending money order or check do not include postage. Pay only for shoes. We pay postage.

U. S. Army Marching Shoes

First grade factory, cut-down price. Direct to you at only $5.85. Retail price of these shoes is $8.00. Made of the best elkskin waterproof leather. Second Grade, $5.15.

U. S. NATIONAL MUNSON ARMY SHOE CO., Inc.
Dept. 867. WESTFIELD, MASS.

We Fix Radiators

AND FIX 'EM "RIGHT"

Honey-Comb Cores installed in automobile, truck and tractor radiators. Write for price list and information booklet.

PARAGON AUTO RADIATOR CO.
1455 Court Place Denver, Colo.

From Corral and Pasture

By H. W. HAILEY

All breeders of purebred registered livestock of any kind in the Inter-Mountain states are requested to write the livestock fieldman in charge of this department, whenever they sell or buy an outstanding individual. Considerable interest is now being taken by Eastern and Central Western breeders in the high quality of animals raised in the inter-mountain states and items regarding the sale of animals for shipment east are particularly desirable.

The attention of all Western Farm Life readers is also called to our service department. If you are contemplating the purchase of breeding stock for your herd, or wish to found a herd, we shall be glad to furnish information as to various herds in this and neighboring states as a complete directory of breeders in Western Farm Life territory is being maintained in this office.

o o o

The first annual sale of registered Shorthorns, held by the Elbert County Shorthorn Breeders' Association at Elbert, Colo., Wednesday, October 27, brought an average of $155.12 for forty-one lots. The offerings were just in fair flesh for breeding purposes and will make valuable animals for their purchasers. Due to the severe weather of the day preceding the sale and the poor condition of the roads, the buyers present were only from the three counties of El Paso, Elbert and Douglas. The top price of the sale was paid by Roy Kent, a 16-year-old boy, who bought his first Shorthorn, a beautiful roan heifer, for $280. While the sale was not a great financial success for the consignors, the cattle sold were not allowed to go far from home and the farmers who purchased them will be more than converted to the importance of raising purebreds. The men who purchased one or more of the animals sold are: Frank Connell, Kiowa; O. P. Phillips, Elbert; Chas. Litherland, Elbert; Warnock & Sons, Loveland; R. E. Carver, Elbert; Frank Gabardi, Elbert; Walter Dittemore, Elbert; Arthur Craymer, Castle Rock; George Phillips, Elbert; Clint Whittier, Castle Rock; J. M. Pytlinsky, Elizabeth; Roy Kent, Elbert; Lawrence Phillips, Elbert; Dewey Carnahan, Elbert; J. C. Brace, Elbert; Perry Williams, Elbert; E. R. Hiatt, Elbert; Otto Kleaman, Elbert; Ira L. Hammond, Elizabeth; Grant Bentley, Elizabeth; Ted Connell, Kiowa; George Sultz, Elbert; Ralph Brazelton, Elbert; Sherril Adams, Elbert; Tom Cantrill, Elbert; Tom Burnsides, Elbert, and A. J. Peterson, Peyton.

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The W. R. Reynolds sale of registered Poland China hogs at Longmont apparently came at a very bad time for sales, as the attendance was very small and very few farmers were present to buy breeding stock. The animals offered were of good breeding and well formed, although they were light in flesh. The top price gilt of the sale was purchased for $150 by C. J. Mather of Longmont, himself a Poland China breeder. Most of the animals offered were bred gilts and they averaged around $60 a head. Among those who purchased animals were L. E. Crews of Longmont; C. J. Mather, Longmont; Crews & Mather, L. G. Tracy, Longmont; E. F. Webb, Longmont; J. L. Pugh, Longmont; J. L. Rinn, Longmont; Ed Blodgett, Longmont; Wm. Cheney, Lyons; R. A. Arnold, Boulder; D. A. Jay, Boulder, and the Colorado Agricultural College.

o o o

Careless proofreading made us tell of W. J. Brady's Duroc hogs in the November 1st issue, instead of W. J. Lady's. Mr. Lady lives at Parker, Douglas county, Colo., and he may be a good Irishman, but his name is not Brady.

o o o

R. P. Lamont, Jr., of Perry Park Ranch, Larkspur, Colo., was the only Colorado buyer who purchased breeding stock at the sale held in connection with the National Dairy Show in Chicago. The animals that will come to his Holstein herd are Aldemoor De Kol Pietje, a coming 5-year-old cow; Segis Veeman Walker, a calf; and Lady Grace Pontiac, a coming 2-year-old heifer. The prices paid were $500, $825 and $600, respectively.

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The Duroc herd of Burt Hart & Sons stepped into the limelight very prominently during the fall fair season. Mr. Hart returned to his farm near Longmont last month with his herd after showing at three county fairs, Boulder, Loveland and Grand Junction; and the three state fairs of Colorado, Wyoming and Utah, the winner of 99 firsts, 86 seconds, and 74 thirds, together with a number of special prizes and grand championships. This is certainly a remarkable showing for one season. Mr. Hart expects to annex his share of the money at the National Western Stock Show in Denver this coming January.

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J. E. Rothrock & Son of Lafayette, Colo., are building up a herd of Shorthorns that will be heard from in another year or two. From their foundation stock of cows they now have some excellent heifers, and with their present herd bull, Golden Knight, by Golden King, by Cumberland Marshall, they should get a lot of extra good calves. They expect to hold their herd to about twenty-five females of high quality.

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C. F. McGillvray, one of Boulder county's new Shorthorn breeders, has a foundation herd of seventeen registered females, and Victor, a Model Type roan, as herd sire.

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Maxwell Bros. of Boulder, Colo., are breeding some extra good Herefords as a result of their long acquaintance with the breed and their love for the whitefaces. For many years their operations were principally feeding and breeding range stock, but during the past three years they have been developing a purebred herd which will take its place in Colorado Herefordom in the near future. Their herd sire is a son of Beau Aster, and their young cows are of a depth and quality that show not only the result of good breeding, but of good feeding. Another year should see a well rounded out show herd make its debut from the beautiful and well improved farm of these breeders.

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A. D. McGillvray of Boulder is well known as a breeder of big type Poland Chinas and his winnings at the Boulder county fair and the Colorado and Wyoming state fairs proved that the judges recognized the extra good quality of his hogs. Mr. McGillvray is an experienced breeder and feeder who raises 'em himself. His herd sires are Samson Over and Big Timm Again. We expect to see his show herd well up in the money at the National Western next January.

o o o

The show herd of the Allen Cattle Co. of Colorado Springs, Colo., left the ranch late in October for a show circuit that will include Spokane, Wash., Lewiston, Idaho, and Portland, Ore., on the Western Coast, and from there will go to the International in Chicago. From the International the herd of these famous Divide Shorthorns will return to the ranch to await the opening of the National Western Stock Show in Denver. The herd is in charge of the chief herdsman, Neil Wishart.

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H. F. Harmon of near Boulder is building a small herd of carefully selected Shorthorns and will be heard from in show ring circles in another year. He expects to maintain a herd of straight Scotch Shorthorns, and is now offering for sale a few Scotch-topped cows and heifers of good quality. Two of his outstanding cows are Susan 6th, and Scottish Lady. Both are Scotch bred and as individuals are true to their blood lines. His herd bull is a growthy pure white 2-year-old, Royal Type, from Model Type.

o o o

Forsyth & Wing of Longmont are planning a sale of Holsteins for December 16. They will sell all their grade cows and heifers and continue as breeders of registered Holsteins. The animals which will go into the sale are good producers and will go into dairy herds as money makers. They have been in the testing association and as the result of tests and barn records are maintaining a well rounded producing herd.

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We had the pleasure of visiting what is one of the largest herds of Shorthorns in Boulder county at the farm of W. A. Dickens near Longmont. Mr. Dickens is well known and needs no introduction in breeder circles. His herd bull, Mystic Sultan, is a great growthy fellow of Whitehall Sultan breeding and well deserves his place at the head of the herd. In the feed lot are a number of excellent young bulls and heifers, now ready for sale, and several show animals which will probably make their bow to the public at the stock show in Denver next January.

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While visiting in Boulder county we did not have the opportunity of seeing the excellent herd of Jay & Allan, but having seen their show herd at the state fair, we know that they must have a fine lot of them at home too, in order to keep the show animals coming to the front for their blue ribbons.

o o o

Eston Buster, near Longmont, has formed a partnership with Warfield Riley of Boulder in the breeding and raising of Durocs. With a foundation herd of four good brood sows, one of which is a real show animal, and their recently acquired sire, Pathfinder the Great, first as senior yearling at the State fair in the strongest competition ever met in the state, they will no doubt develop some wonderful Durocs during the next two years.

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J. W. Hendricks is another one of the Boulder county men who is building a Shorthorn herd. He is breeding the milking strain, or dual purpose Shorthorns, as they are more properly known.

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Glen Martin of near Boulder is one of the new Shorthorn breeders in that section, which now numbers about sixteen breeders. He is looking forward in his buying and breeding to securing the best and now has a Dale Clarion bull, Gentile Dale, as his herd sire.

o o o

J. J. Kalberer & Son of Broomfield have built up one of the best small herds of Holsteins in Colorado. Their work has been carefully done and they are planning a sale for the near future in order to reduce their herd, which is getting too large for them to handle. They will place in the sale a lot of good producing grade cows, many of which they have bred and raised, and a number of registered animals. The cows and heifers will be bred to Ormsby Skylark Johanna, their herd sire. He is an excellent individual, twice winner of first place at the National Western Stock Show, and twice grand champion at the Boulder county fair. A new bull calf has recently come to the Kalberer herd as the result of Miss Kalberer's work in the subscription contest for the Dairy Farmer. This 9-months old show calf was sired by Carnation King Sylvia, the most noted Holstein sire in America today. This calf, Dairy Farmer King Sylvia, is from a 24-pound 2-year-old heifer, which was purchased at the Holstein sale in St. Paul by the Pabst farms of Milwaukee.

o o o

Arthur Guth, a Percheron breeder of many years' experience in that home of purebred Percherons, Northern Illinois, has moved to Broomfield, Boulder county, Colo., where he has purchased a farm. He will continue in the business here and expects to show several horses at the National Western Stock Show in January.

Western Farm Life:

In reply to yours, I am enclosing $1 for two years for Western Farm Life, which I appreciate very much. It is a wonderful paper for the money.—Lu Monnelly, Walkerville, Mont.

FARMERS' AND STOCKMEN'S EXCHANGE

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

PLYMOUTH ROCKS.

PURE BARRED ROCK COCKERELS FOR SALE. Prize winners, $3 to $5, if taken at once. E. Plessinger, Cheyenne Wells, Colo.

BARRED PLYMOUTH ROCKS; BRADLEY AND Latham strains; cockerels, both light and dark, $4 and $5 each. Winners at the National Western and local shows. Chester Blunt, Route 1, Greeley, Colo.

RHODE ISLAND REDS

ORDALAC STRAIN RED COCKERELS—NONE better. Champney, 2057 S. Broadway, Denver. Colo.

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

LEGHORNS.

BUFF LEGHORNS—BEST LAYERS ON EARTH; have some classy cockerels. Champney(2057 South Broadway, Denver.

SINGLE-COMB WHITE LEGHORN COCKERELS, Young's strain; extra fine birds. Martin & Monroe, Thatcher, Colo.

WYANDOTTES.

WHITE WYANDOTTE COCKERELS—TRAPnested stock, $3 and $5. Mrs. Mary M. Wright, Rte. 2, Box 314, Boulder, Colo.

SEVERAL VARIETIES.

CHAMPNEY'S POULTRY YARDS—IF IT WEARS feathers we have it, or will get it for you. Write us your wants. 2057 S. Broadway, Denver, Colo.

COLUMBIA HATCHERY—WE CAN SUPPLY you with cockerels and breeding stock, turkeys, ducks and geese; 14 varieties. Prepare now for spring mating and get the best. P. O. Box 1102, Denver, Colo.

PET STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

BEAUTIFUL PEDIGREED COLLIE PUPS, MALES $25, females $20. Other collie and shepherd pups, males $15, females $7.50; natural heelers. Pictures 10c. R. Ellis, Beaver Crossing, Nebr.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HOGS

BIG TYPE POLANDS, YOUNG BOARS AND gilts for sale. Write for breeding and particulars. Gad Barney, Haswell, Colo.

FOR SALE—A FEW YOUNG BOARS AND GILTS from registered Big Type Poland China stock; prices reasonable. F. L. Toliver, Ft. Collins, Colo.

BLUE HOGS—LARGE, GROWTHY AND PROlific; everybody likes them. Write for booklet. Mention this paper. The Blue Hog Breeding Co., Wilmington, Mass.

BIG TYPE POLAND CHINAS, CHOICE PIGS, both sexes, three to five months old, best of breeding, priced right; pedigrees furnished. Pinehurst Ranch, C. W. Miller, Prop., Rye, Colo.

FOR SALE—BIG TYPE POLAND CHINA BOARS and gilts; can furnish both sexes for mating, or bred gilts for desired month for farrowing. Correspondence solicited. W. .J Peterson, Seibert, Colo.

A FINE DUROC BOAR CHEAP, FOR $75; WILL sell you a registered March boar, sired by 1919 Colo. State Champion, an Orion, whose sire is one of the hundred leading boars of the country. You should not miss this chance. J. N. Caldwell, Littleton, Colo.

REGISTERED BERKSHIRE BOARS, READY FOR service; prices lower for quick sale. Also a few weaned gilts and boars, sired by Epochal Repeater, Junior Champion at National Western Show, 1920. D. S. Davis, 25 S. Grant st., Denver, Colo.

CATTLE.

FOR SALE—FIVE REGISTERED SHORTHORN cows, 2 to 8 years old, and bred to Cumberland Type 2nd, $150 to $250. Glen Martin, Boulder, Colo. R. F. D. 1.

WANTED—DAIRY HERDS, TO CONSUME OUR alfalfa hay; dairy opportunities unexcelled on the Newlands Irrigation Project. Never-failing water supply, great variety of crops; 1920 alfalfa crop, 100,000 tons; ideal climate, good dairy markets; leasing opportunities or feeding contracts available. Address, Newlands Project Alfalfa Association, Fallon, Nevada.

GOATS.

FOR SALE—HEAVY MILKING SAANEN GOATS, bred to pure buck. Geo. T. Cramton, 4912 Hooker st., Denver, Colo.

HAVE FOR SALE TWO ANGORA BILLIE GOATS 6 months old, a very good breed; price $25 and $35. Everett M. H. Raymond, Villa Grove, Colo.

SHEEP.

100 REGISTERED SHROPSHIRE EWES. A. M. Plumb Estate, R. F. D. No. 4, Box 47, Greeley, Colo. Phone Red 27R2.

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IF YOU WANT TO SELL OR EXCHANGE YOUR property, write me. John J. Black, 33rd st., Chippewa Falls, Wis.

SELL YOUR PROPERTY QUICKLY FOR CASH, no matter where located. Particulars free. Real Estate Salesman Co., Dept. 11, Lincoln, Neb.

WANTED—TO HEAR FROM OWNER OF FARM for sale. Mrs. W. Booth, Hipark, Des Moines, Iowa.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wis.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale; state cash price, full particulars. D. F. Bush, Minneapolis, Minn.

160 ACRES, 35 MILES EAST OF DENVER, next to irrigation; all fenced, 80 acres broken; good brown loam wheat land; near railroad and school; $45 acre. Ed L. Knight, Owner, 531 S. Pearl st., Denver, Colo.

FARMS OF ANY SIZE, FROM 60 ACRES TO 3,600 acres, irrigated, non-irrigated and pasture land from the famous Zang ranch at Broomfield, Colo., 15 miles from Denver. On Lincoln Highway, trolley line and two railways; modern improvements, including stock farm set. Call at farm or send for booklet G-1. The A. J. Zang Investment Co., owners, American Bank Bldg., Denver, Colo.

SAN LUIS VALLEY IRRIGATED FARMS—THE best land in the valley, under a first-class irrigation district; 125 acres, improved, adjoining Federal Aid Highway; 40 acres, improved, adjoining Federal Aid Highway; 40 acres, unimproved, ½ mile from Federal Aid Highway; 80 acres, unimprovcd, 1 mile from Federal Aid Highway; 20 acres, unimproved, 1 mile from Federal Aid Highway. Every foot can be irrigated and will raise a crop. Look at the crops on the above and adjoining lands and be your own judge. For prices and terms write or see owners. A. A. Salazar & Son, San Luis, Colo.

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OLD HATS MADE NEW. S. M. BELWOOD, 1542 Court place, Denver.

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INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

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VIOLINS WITH COMPLETE OUTFITS FOR SALE on easy monthly payments; five days free trial. Write Miss Bertha Mardiss, Shawnee, Kans.

PATENTS.

PATENTS—BOOKLET FREE. HIGHEST REFERences. Best results. Promptness assured. Send model or drawing for examination and opinion. Watson E. Coleman, Patent Attorney, 624 F st., Washington, D. C.

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WANT THE CHEAPEST, HANDIEST BELT power? Then ask me about my Little Twister Power Transmitter for Ford and Dodge cars. Frank R. Weisgerher, Salina, Kans.

WOOD CUTTING CONTRACTS WANTED.

WILL TAKE CONTRACT TO CUT WOOD—Want big jobs; power saw used. Address E. Gatewood, corner S. Madison and E. Evans, Denver, Colo.

KODAK FINISHING.

KODAK FINISHING BY MAIL—ROLL FILMS developed, 10c; one-day service; no delays. Mile High Photo Co., Established 1905, 318 17th st., Denver, Colo.

KODAK PICTURES WELL PRINTED DOUBLE the pleasure you get from them. Mail your Kodak finishing to us. Write for price list and sample prints. Haanstad's Camera Shop, 404 Sixteenth street, Denver, Colo.

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LOST HEIRS—A 400-PAGE BOOK, FILLED with names for lost heirs and missing kin, from different parts of the world. Chancery Court of England, Ireland, and Bank of England lists included; price $1. International Claim Agency, 232, Pittsburgh, Pa.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

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GOVERNMENT RECLAIMED AND SURPLUS property for sale. Wool O. D. blankets, $5.50; gray wool blankets, $5; wool O. D. shirts, $3; field russet or hobnail shoes, $3.50; bed comforts, $2.50. Cash with orders and sufficient amount for parcel post charges. Write for new price list. Sales F. O. B. San Antonio Army Supply Co., 809 East Commerce St., San Antonio, Texas.

HONEY.

DELICIOUS NEW HONEY, 10-POUND PAILS $2.50; 60-pound cans, $13.00. You will find this honey pure, clean and nice. A. A. Lyons, Fort Collins, Colo.

"THEBESTO" ROCKY MOUNTAIN HONEY, light colored, thick, fine flavored; per can, five pounds net, postpaid, anywhere west of Ohio river, $1.50. Send remittance with order. The Colorado Honey Producers' Association, Denver, Colo.

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LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

LEATHER TANNING RECIPES—ONE FREE guaranteed. Cheap way, proof furnished. Agents wanted. R. N. Gilley, Carlton, Tex.

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LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

TRACTORS.

FOR SALE OR TRADE, 12-25 AVERY TRACTOR, Guide & Sanders 5 disk plow, good condition. Crop payments to responsible party. Write to F. J. Shindler, Deer Trail, Colo.

AUTO AND TRACTOR SCHOOLS.

YOUR CHANCE FOR ADVANCEMENT—WANTed, mechanics and truck drivers. How many times have you seen this kind of an advertisement in the daily papers? Why not let us train you to take one of these highly paid positions? We train you in the practical way on regular automobiles, trucks and tractors, give you the benefit of the most experienced instructors. We have day and night classes, in other words, we do all that other schools do and a little bit more, as we are the oldest and operate the world's largest chain of practical motor schools. Bring us your problems and we will help you. Write or call 1733 Champa st. for free catalogue and information. Do this now. Special rates for short time. Hemphill Bros., State Auto and Tractor School. Denver branch office at 1733 Champa st. Other branches at Portland, Ore.; Tacoma, Wash.; Vancouver, B. C.; Victoria, B. C.; Calgary, Alta.; Winnipeg, Man.; Edmonton, Alta.; Saskatoon, Sask.; Regina, Sask.; Salt Lake City, Utah.

REGISTERED
JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.

H. J. VAUGHN, KIRK, COLO.

FOR SALE—ENTIRE HERD OF

Registered Holsteins

Bred right. Many of them closely related to the cow "Western Ascalon" that sold at the National Sale for $5,500. These cattle will be priced right. Must sell because of failing health. Call or write. W. B. & E. M. DOWNS, ROUTE 1, YUMA, COLO.

FOR SALE.

Sons of Sir Johanna Bess Segis

who combines in the closest degree the blood of **King Segis Pontiac Count** and **Piebe Laura Ollie Homestead King.** Send for their story.

PAHGRE VALLEY RANCH,
MONTROSE, COLO.

EL PASO HERD OF DUROCS

We have for sale about 70 young boars and gilts sired by Colorado's Chief Sensation, the largest junior yearling boar of any breed ever owner or raised in the west. These choice pigs at three months old are selling for $35 to $50. Write me your wants.

J. W. BRAUER,
22 Lorraine St. Colorado Springs, Colo.

BOARS

DO YOU NEED ONE? WE HAVE HIM.
POPULAR BRED. POPULAR PRICED.
GUARANTEED.

DALY'S DUROCS
CAMBRIDGE, NEBR.

REGISTERED BIG TYPE
DUROC JERSEY HOGS

Am offering some good Spring Gilts and Boars. Also some good fall gilts. Write for prices and breeding.

August F. Borgmann,
R. F. D. 4. LONGMONT, COLO.

We Have Them---Good Ones

Some bred to Royal Type 916924, a first-prize Futurity winner at the National Western Stock Show, Denver, 1920. They are

Shorthorn Cows and Heifers

Also a few Barred Rock Cockerels for sale.

H. F. HARMON, Boulder, Colo.

SCOTCH AND SCOTCH-TOPPED

SHORTHORNS

We now have ready for sale a few yearling and 2-year old bulls and heifers—grandsons and granddaughters of Imported Villager—at prices ranging from $175 to $300.

I. J. NOE & SON, Greenland, Colo.

GREAT BARGAINS—REGISTERED HEREFORDS; DURHAMS (called Shorthorns), and ABERDEEN ANGUS; ages 1, 2, 3 and 4 years old. Prices $125 per head and up. Also Percheron and Belgian Horses from 1 to 6 years old. Prices $125 and up. Write for circular. One head or car lots. Breeding Guarantees with each.

ILLINOIS HORSE & CATTLE CO.,
Good Block, Des Moines, Iowa.

COL. H. C. JENNINGS.
Purebred Livestock

AUCTIONEER

Also conduct Sales of Real Estate.

534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

D. S. Polled Herefords

Cows from Polled Plato, herd headed by POLLED SUCCESS A 3rd. Young bulls and heifers for sale.

Smith Livestock Co.
CHIVINGTON, COLO.

Blue Ribbon Herd

DUROCS

At the three big Duroc shows of Colorado in 1920 we won 23 ribbons at Denver; 33 ribbons at Rocky Ford; 36 ribbons at State Fair, Pueblo. Largest number of ribbons won at each show. Get the blood of the best at reasonable prices from

— The —

Blue Ribbon Live Stock Co.

C. F. BURKE, Mgr.
PUEBLO, COLORADO.

ANNOUNCING

Change in name of our herd sire, formerly "King Johanna Cedarside Pontiac," to

"Colorado Count"

One of the finest individual sons of King Segis Pontiac Count, whose 29 tested daughters have broken over 100 world's records. COLORADO COUNT was JUNIOR CHAMPION at the 1920 State Fair and GRAND CHAMPION at the Douglas County Fair. We believe him to be one of the greatest prospects of the breed.

Wallie Registered Holsteins,
4800 SOUTH PENN, DENVER, COLO.
W. G. Foster, Owner.

Home of 23 fine A. R. O. heifers. Bulls from these 2-year-olds for sale. BUY NOW.

MILKING SHORTHORNS.
All Cows Officially Tested. 125 in Herd.
Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.
THE BONVUE FARMS CO.,
Stockyards, Denver, Colo.

The Divide Herd

Young Bulls

We are now offering at very reasonable prices some good Shorthorn bulls suitable for small herds. Fall calves and a few yearlings priced for quick sale. Full particulars on application.

THE ALLEN CATTLE CO.,
SHORTHORN BREEDERS,
Colorado Springs, Colorado

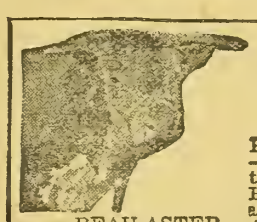
Glendale Stock Farm

Irvindale Rowdy
Grand Champion
Belgian Stallion
Chicago, 1917,
Denver, 1918
and 1919

Breeders of
BELGIAN HORSES
and
POLLED HEREFORD CATTLE

Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.



Registered Hereford Cattle

BEAU ASTER

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER
Holyoke, Colo.

Breeding Stock

available from

The Edgemoor Herd of Durocs

We now have for sale

A Few Outstanding Yearling Boars

—and—

Four Fine Open Gilts

Defender and Orion Cherry King Blood Lines

Prices on Request

Stuart L. Sweet, Carbondale, Colo.

ANNUAL BRED SOW SALE

December 2, 1920

At Fort Collins, Colo., in Sale Pavilion

FARM CONGRESS WEEK

BY LARIMER AND BOULDER COUNTY REGISTERED BREEDERS' ASSOCIATION.

The thirty bred sows in this sale have been carefully selected by an inspection committee of five men and comprise the best animals from that best known and highest bred herds in the counties of Larimer and Boulder.

The man who buys at this sale gets the pick of the two counties without driving several hundred miles to look at eighteen or more herds. No breeder enters more than two head.

15 Poland China Sows

Of Longmont Wonder, Jumbo, Top Notch, Big Joe, Standard Chief, Smooth Joe and other well known lines of breeding, from the herds of A. D. McGillvray, W. R. Reynolds, State College, F. L. Tolliver, C. J. Mather, J. A. Davidson, and other well-known breeders.

15 Duroc Jersey Sows

Of Cherry Colonel, Sensation, Pathfinder, Big Cherry King, and Orion families, consigned from the well-known herds of Burt Hart, Warfield Riley, State College, Geo. E. Morton, and other breeders.

Sows Guaranteed Bred. **Terms Cash.**

Crates furnished by association, to be bought or returned by purchaser. Animals delivered F. O. B. Fort Collins.
AUCTIONEER—H. L. HULL, Des Moines, Iowa.

Wonderful Opportunity to Buy Prize-Winning Foundation Stock

Cloverdale Ranch Hampshire Hogs

Ten Choice Boars sired by ARRIBA BOY 70705, a prize winner at Colorado State Fair, out of Lookout dams. Choicest breeding. Priced worth the money; will please you. The quick-growth, early-maturing kind. Best hog for the farmer and what packers want. Hampshire book free. Write

N. E. Mosher & Son, Hugo, Colo.

Won nine premiums on Hampshires, Colo. State Fair, 1920.

Polands for Profit

Am taking orders for bred gilts and tried sows of selected breeding for future delivery.

Herd headed by Joe King, Joe's Best and Colorado Chief.

All have been winners the past season. Still have two spring boars for sale. Also weanling pigs of September 1st farrow, of either sex.

C. J. MATHER,
Longmont, Colorado.

Phone Greeley 868 — Denver Main 815 Champa 4506

Snook & Leachman

AUCTIONEERS

SOLICIT YOUR SALES

WIRE US FOR DATES.

C. W. SNOOK, Greeley, Colo.
ORD L. LEACHMAN, 205 Livestock Exchange, Stock Yards, Denver

MILK RECORDS

Do Not Replace Straight Bates Shorthorn Blood

FOR

Straight Bates Shorthorns are the "foundation source' of the Milking Shorthorns of England and America.

The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.

THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

FOR SALE

Registered Big Type Poland China Hogs

Have a few good Spring Boars and Gilts at the right price.

J. F. WILSON

Montrose, Colorado.

BIG TYPE Poland China **HOGS**

Of most fashionable breeding. A few choice boars and bred gilts from the first-prize-winning herd of Colorado are for sale.

A. D. McGILLVRAY,
R. F. D. 1. BOULDER, COLO.

OUR 1920 WINNINGS

At six fairs were more than satisfactory. You'll like the type and quality of our

DUROCS

For breeding stock write

Burt Hart & Sons, Longmont, Colo.

Will Sell at Auction

November 24th, 1920

— AT THE —

Range View Ranch, Henderson, Colo.

C. V. RATCLIFFE, Manager.

65 Registered Durocs

incuding winners at the Adams County Fair, 1920.

75 Grade Holsteins 20 Draft Horses

115 Acres, 4½ miles north of Stockyards, Denver, on paved Brighton road. Has 7-room house, big barn, three silos, hog houses, implement shed; all under irrigation, best irrigation system in county. All fenced and cross-fenced with American woven wire. Will carry two-thirds back on ranch. Improvements cost $20,000. Ideal home, close to Denver—best town on earth.

ALL FARM MACHINERY and EQUIPMENT Will Be Sold This Day.

For further particulars write

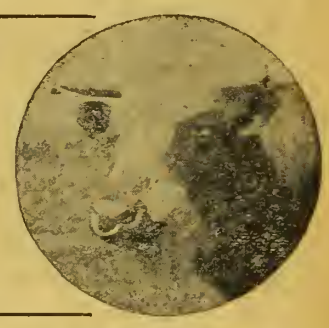
SNOOK & LEACHMAN, Auctioneers and Sales Managers
205 Livestock Exchange Bldg., Stockyards, Denver, Colo.
Phones: Champa 4506 and Main 815.

Shorthorns That Milk

We have for sale a few choice young bulls and heifers of strong milk pedigree from high producing cows and sired by Roan Prince and Duke Glenrose.

Write for 1920 Catalog, giving complete story of the herd.

The Pine Valley Dairy & Farms Co.
Seeley G. Rose, Mgr. Colorado Springs, Colo.



I Am Offering FOR SALE

this fine young bull, James Pontiac DeKol Ormsby.

He is a fine outstanding individual from one of my producing advanced registry cows.

WM. A. PURVIS,
JOHNSTOWN, COLO.

JAMES PONTIAC DEKOL ORMSBY

HIGH-CLASS JERSEYS

I am still in the Jersey business, and wish my old friends, and new ones, to look up the record of my herd at the big eastern shows; senior champion bull, senior and grand champion cow, first on herd, first on young herd, first on calf herd, and other blues, at Wisconsin State fair.

First on two-year-old heifer, down in Kentucky, right in the hot-bed of Jerseys, and against Longview.

At Waterloo, senior champion on aged cow, and first on two-year-old heifer, also against Longview. Oh, we have some Jerseys all right, and most of them for sale.

More later. Have just added a corking spring boar to my Duroc herd, and will sell two or three bred sows.

A. M. McClenahan, Greeley, Colo.

COLUMBINE HERD — WORLD'S FINEST HOLSTEINS — ROCKY MOUNTAIN SPECIAL CO'S

AN OUTSTANDING DAIRY HERD SIRE FOR SALE

Columbine Segis Changeling 303398, calved Jan. 23, 1919, is more white than black, is a first-class individual, being first in his class at the State Fair last year, and second at the Western Stock Show. He was sired by Woodcroft Changeling, a son of Changeling Tidy Abbekerk Wayne, a 44-lb. cow. His dam is Ora Segis De Kol, an A.R.O. daughter of Maplecrest Pontiac Hartog, who has 26 A.R.O. daughters and is a 30-lb. son of Pontiac Aaggie Korndyke, with 61 A.R.O. daughters—13 with records from 30 to 35 lbs.; six above 1,000 lbs. and 21 A.R.O. sons. Price $250. Complete breeding and further information furnished on request.

SPENCER PENROSE, Owner. Box 442, Colorado Springs, Colo. CHAS. WILSON, Mgr.

SENSATION DUROCS

We sold Mountair Sensation at the Colorado State Fair for $1,000. This is the highest price ever paid to a Colorado breeder by another Colorado breeder, for a boar.

We have June, July and September pigs by this great breeding son of Great Sensation and we prefer to sell them young at reasonable prices.

G. E. MORTON & SONS, R. 5, Box 84, Fort Collins, Colorado

SOME GOOD RAM LAMBS

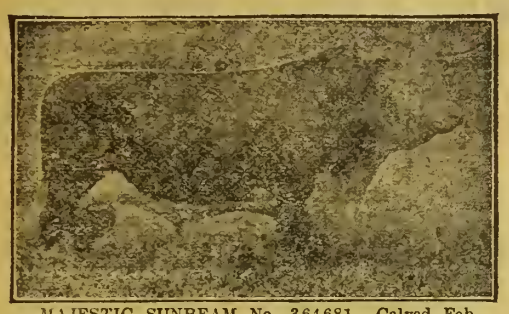
Hampshire Rambouillet Shropshire

Also Duroc and Poland China Pigs, Both Sexes.
Write for Descriptions and Prices.

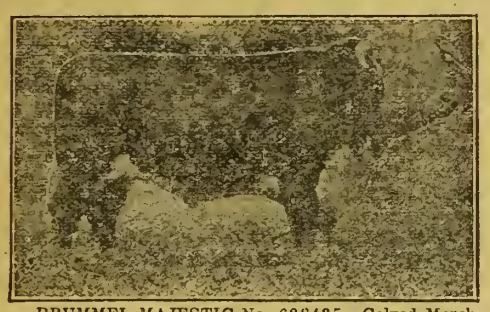
COLORADO AGRICULTURAL COLLEGE, Fort Collins, Colo.

DO YOU WANT TO BUY LIVESTOCK? Write your wants to the Breeders Department, Western Farm Life. They will help you.

Campion's Majestic Sunbeam and Beau Mischief Herefords



MAJESTIC SUNBEAM No. 364681. Calved February 25, 1911. Sire—Majestic the 24th No. 293221. Dam—Armour Sunbeam No. 85081. Majestic Sunbeam, grandson Imp. Majestic, one of the best and biggest boned Hereford bulls ever imported to this country.



BRUMMEL MAJESTIC No. 628435. Calved March 20, 1917. Sire—Majestic Sunbeam No. 364681. Dam—Don Amelia 2nd No. 135871. 56¼ per cent Anxiety, 31¼ per cent Imp. North Pole, Lord Wilton Grove the Third. 12½ per cent Imp. Majestic.

AMELIA'S BEAU MISCHIEF No. 557094. Calved April 27, 1916. Sire—Beau Mischief the 15th. Dam—Don Amelia 2nd No. 135871. Ninety per cent Anxiety blood. Secretary Kinzer says its almost impossible to write a better pedigree.

Sunbeam Farm,

8 Miles East of Wellington, Colo.

"They're Bred in the Purple"

The best types of Majestic Sunbeam and Beau Mischief Heifers and Bulls for sale.

The Big Bone Registered Poland China Sows and Gilts and Boars for sale at all times, also fullblooded bred gilts. Come and see them. Visitors welcome at "Sunbeam Farm" any time.

A. J. Campion

DENVER, COLORADO.

SHIP TO THE OLD RELIABLE COMMISSION FIRM

The Sigel-Campion Live Stock Commission Co.

And we will get you the High Dollar for your stock. Experienced salesmen in every department.

A. J. CAMPION

Pres. and Gen. Mgr.

EXCHANGE BUILDING
DENVER UNION STOCK YARDS.
Phone Main 8300.

SIX BIG PUBLIC SALES

DECEMBER 6th to 14th

DECEMBER 6th:

Sale of High-Grade Holsteins

Draft Horses, and Farm Implements and Equipment.

DECEMBER 7th:

65 Head Registered Holsteins

This herd includes some of the best Holstein blood in the state.

These two sales will be held at the
W. A. PURVIS FARM, JOHNSTOWN, COLO.

DECEMBER 8th:

Registered Holstein Sale

At the McNEIL & SON FARM, 7 Miles North of Platteville, Colo., and ¾ Miles South of Twin Bridges.

DECEMBER 9th:

Dispersion Sale of Registered Holsteins

At the W. C. SAUER & SON FARM,
4 Miles Northwest of Fort Lupton, Colo.

DECEMBER 10th:

SAUER & SON will sell their

Three Irrigated Ranches *At Auction*

Fred Perdue, Auctioneer.

DECEMBER 10th:

SNOOK & LEACHMAN will sell

60 Head of High-Grade Holsteins

for H. F. Dryer, three miles northeast of Brighton.

DECEMBER 14th:

50 Head of Registered Durocs
30 Head of Holsteins

HORSES, MULES, AND FARM MACHINERY,
At ALBERT DILSAVER & SON'S Ranch, One Mile North of Eastlake.

The above sales offer a rare opportunity to pick up some of the very best Holsteins in Colorado. The herds contain some of the record cows of Colorado, as well as some excellent show stuff.

For further information and catalogs, write

SNOOK & LEACHMAN, Auctioneers and Sales Managers

205 Livestock Exchange Bldg., Stockyards, Denver, Colo.
OR GREELEY, COLORADO.

Villager Shorthorns Offered at Auction

BY J. K. HOLMES, CENTER, COLO.

28 Lots Most of which are sired by Villager's Prince, a roan son of Imp. Villager.

The first sale of Villager bred cattle held west of the Missouri.

A great opportunity to get the right kind of foundation stock.

Sale at Ranch, Northwest of Center, Colo.,

MONDAY, NOV. 22

Visitors met at train and entertained.
Write for catalogue.

J. K. HOLMES, - - CENTER, COLO.

DeWITT HEREFORDS

HERD BULL—MISCHIEVOUS JR., by THE HEIR

His dam is Mischievous 3rd, a full sister of BEAU MISCHIEF and the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of
GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

Your Verdict

would agree with a prominent Hereford breeder who said of our

YEARLING HEIFERS

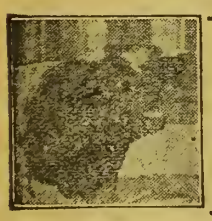
"The most uniform bunch I have seen any place."

A few lots of extra choice REGISTERED HEREFORDS

FOR SALE

We can satisfy discriminating buyers.

HEREFORD CORPORATION. CHEYENNE, WYO.



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15 HEAD CHOICE HEIFER CALVES and 10 HEAD FINE BULL CALVES.
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W. A. Dickens, Longmont, Colo.

The Heart of Virginia Keep.

(Continued from Page 16.)

Virginia looked up, amazed. She had prepared for a storm, not a zephyr.

"You know, then, mother?"

Mrs. Keep sat down.

"On the contrary, I am excessively mystified. That odd Mr. Sturgis has given me the impression that some calamity has befallen your father of which we both are in total ignorance. I learned nothing definite, for I was not entirely frank with him. One does not care to admit that information of one's husband comes from outside sources."

Virginia's first blurred thought was that all her dissembling had gone for naught. Merely to gain time she asked:

"Haven't you seen this morning's paper, mother?"

"No."

She stood up, swiftly resolved to have done with it.

"Mother, father has—been arrested."

Mrs. Keep's thin lips fell apart for a shuddering second, then closed again in their usual hard line. Her face gradually went white.

"Arrested? Why? What for?"

"It is—I hardly know how to tell you. I'm afraid you will be very shocked."

They looked fixedly at each other, hard blue eyes into soft black ones, until Virginia, with a strange feeling as of shame, averted her gaze.

"How long has this been known without my hearing of it? Why haven't you told me?"

Mrs. Keep's voice was as steel cutting through ice.

In marked contrast was Virginias warm, liquid tone:

"You were out most of the day, and when Grant brought the news yesterday morning——"

"So you have known it since then!"

She nodded, then suddenly turned and started toward her bedchamber. Mrs. Keep, however, checked her at the door.

"Will you tell me—what has he done?"

Her face now was as white as death.

Virginia looked over her shoulder, hand on the knob.

"It happened long ago. Before I was born. It's very grotesque. There was a fight; they say he killed two men——"

Mrs. Keep had grown very quiet—peculiarly so. A little frightened by her stillness, Virginia walked back and knelt beside her. She had swooned.

* * * *

When Mrs. Keep regained consciousness she was lying on the divan in Virginia's sitting room, attended by her maid. Virginia was not in sight. The grief-stricken woman, remembering, set her teeth in pain. Her paramount thought was:

"He had done it when I married him! I, Priscilla Dibblee, married a—murderer!" And again:

"The wife of a murderer! Branded with a stigma that will endure till my dying day!" The horrible thought goaded her—terrified her.

Virginia came from her bedroom, attired for the street.

"Where are you going, child?"

"To see Mr. Lewis. Can I do anything for you before I go?"

Mrs. Keep signed to her servant to leave the room.

"You might tell me what you intend seeing him about."

"Mr. Lewis is our lawyer, mother."

Mrs. Keep employed her lavender salts.

"Virginia dear, will you come here, please, and sit beside me?"

Drawing on her gloves Virginia walked to the couch and sat down.

"My child, you don't realize the import of the step you are taking."

"Yes, I do, mother."

"I insist you do not. You are too young, too inexperienced, too emotional. I admit I have shown you scant affection in the years we have lived together, but in my own way I think I have come to care for you—for you are a sweet and lovable girl, Virginia, in character as well as face—and now that we are bound together by a common woe we must help each other all we can. There is but one thing for us to do, and that is——"

"Fight for him!"

"No," with a sad smile. "We must leave him. We must leave this house, this city, as speedily as we may. We must go away where we are not known and try to live down the disgrace he has inflicted upon us—two helpless women. I shall never return to Boston. I could not bear to. He did it before we were married—that is the cruellest part. The day I, Priscilla Dibblee, assumed his name it was smirched with this foulness, this unmentionable crime, and I——I have lived with him all this time!"

"With nobody being the wiser."

"There you show your unsophistication. True, nobody has known, but there are evil-minded persons who will pretend they have, and others who will believe I knew all the time. No—I cannot return to Boston. We shall have to go elsewhere."

Virginia was standing now, face white as the lace at her throat, her round, girlish bosom rising and falling stormily beneath her brown silk waist. Misconstruing the cause of the gathering tempest, Mrs. Keep said contritely:

"I'd forgotten your engagement, dear. I——"

"I've broken my engagement," said Virginia; and before her stepmother could speak: "What will you do—before you go?"

"There is only one thing I can do, Virginia. You doubtless know what I mean."

Virginia drew a deep breath. For a moment, standing erect, dark eyes narrowing blackly, she looked down at the woman on the divan. Then, exhaling suddenly with a passionate little gasp, she turned and swept toward the door.

"Virginia! Virginia!"

She did not answer.

The door closed.

CHAPTER XI.

The Feelers of the Law.

Keep's first day of incarceration—judged by the dull standard of prison routine—passed eventfully. The jail warden, a thrifty man with a sharp eye to pecuniary emolument, furnished him with clean, commodious quarters, supplied him with books, periodicals, newspapers, and otherwise catered to his peace and comfort.

Had Keep been of a philosophical turn he might have taken a cynical amusement in observing that certain men he had regarded as casual acquaintances were the first to call and the most sincere in sympathy, while others whom he had cherished as friends approached diffidently, doubtful whether or not to shake his hand, obviously ill at ease in his presence, anxious to be off.

Among the midday arrivals was Philip Sturgis. The nervous little vice-president came in as if treading on ice, the fingers of his left hand fidgeting his watch chain, the palm of his right rubbing his coat. Uncertain whether to smile or draw a lugubrious countenance, he was conscious of neither action.

As the visitors of the morning were greeted so this one was received—with a cold candor that detested sham. Keep rose from his chair near the steel-barred window, heavy black brows lowered, thick white hair brushed smoothly back from his broad forehead. Never had he held himself with more dignity and power, and never had he been more sick at heart. When he spoke his deep-toned voice rang with a kind of hard mockery.

"What's the matter with your right hand, Phil? Wet?"

Sturgis cackled nervously, stepped forward and shot out his hand with a bird-like movement.

"H-m, h-m! I cannot express how deeply grieved I am over this terrible affair, Mr. Keep."

Studiously unaware of the proffered hand Keep took a long envelope from the drawer of a battered table.

"Why 'Mr. Keep,' Phil?" tapping the envelope against his finger-tips.

The excitable little man had a paroxysm that nearly suffocated him.

"H-m, h-m! I—I'm a trifle upset—Alfred. The unusual circumstances——"

He abandoned whatever he meant to say in the access of a more genuine interest. His eyes snapped greedily at the waving envelope, like those of a cat watching a sparrow.

"What have you there, A-Alfred? Something for me?"

Keep handed him the envelope.

"I decided not to wait for the directors to request it. It's rather a shame, isn't it, Phil, that I didn't get to serve even one day as president?"

"It is, Mr. Keep; it is, indeed." Sturgis snapped the long envelope into an inner pocket and buttoned his coat upon it lovingly. Now that he had what he came for he was anxious to go. He looked at his watch, then at the door. "Yes, it is truly regrettable——"

"Well, Phil, you'll have to excuse me now. I've no end of work on hand today. My good wishes to the boys. And tell them I'm too busy to do much visiting."

He drew his chair to the table, sat down, inked a pen, and began shoving papers about. But when the heavy door clanged, shutting him in his solitary prison, the pen slipped unnoticed from his fingers.

(To be continued.)

Idaho Doesn't Need Kanred.

Kanred was improved and distributed by the Kansas Experiment Station. Its name is suggestive of the characteristic of the wheat—a hard red winter wheat similar to Turkey Red and Kharkov. There is no question as to its value in Kansas, as it has produced from two to six bushels greater yield than Turkey Red under similar conditions. This increase in yield is due to its rust resistance and its earliness, two characteristics needed for a wheat to yield well in that section of the United States. It also produces a fine flour and is in demand by the millers.

Its value in Idaho is, to say the least, open to question. Its two outstanding characteristics, that of rust resistance and earliness are not needed in Idaho where hard red winter wheat is grown. The climatic conditions throughout the state are not favorable to rust and a few days difference in time of maturity does not materially affect the yield.

Kanred has been tested in comparison with Turkey Red by the Washington Experiment Station at Pullman. Prof. E. G. Schafer has kindly furnished a statement of the yields for the past two seasons, seasons which were favorable for hard winter wheats. The conditions under which these tests were conducted are similar to those throughout the Palouse area. The yields are:

	Bushels per acre		
	1918.	1919.	Aver.
Turkey Red	30.5	59.5	45.0
Kanred	31.8	55.1	43.5

The Palouse area is not suited to the production of hard winter wheats and they should not be introduced. This area is badly handicapped by growing too much mixed grain and the introduction of more wheats, especially hard red grains which, when mixed with the common white and white club wheats, will reduce the price of the wheat, should be discouraged.

It may be possible that on the drylands where hard winter wheat is the predominating type, Kanred might be grown. At least it might be experimented with in comparison with Turkey Red and its value tested. The same might be said of many new wheats or other crops put on the market in some state or locality. Those crops are generally adapted to the particular locality from which they came and if conditions are not the same in another locality they may not be profitably introduced.—R. K. Bonnett, Agronomy Department, University of Idaho.

If in need of advice, ask Western Farm Life Service Bureau.

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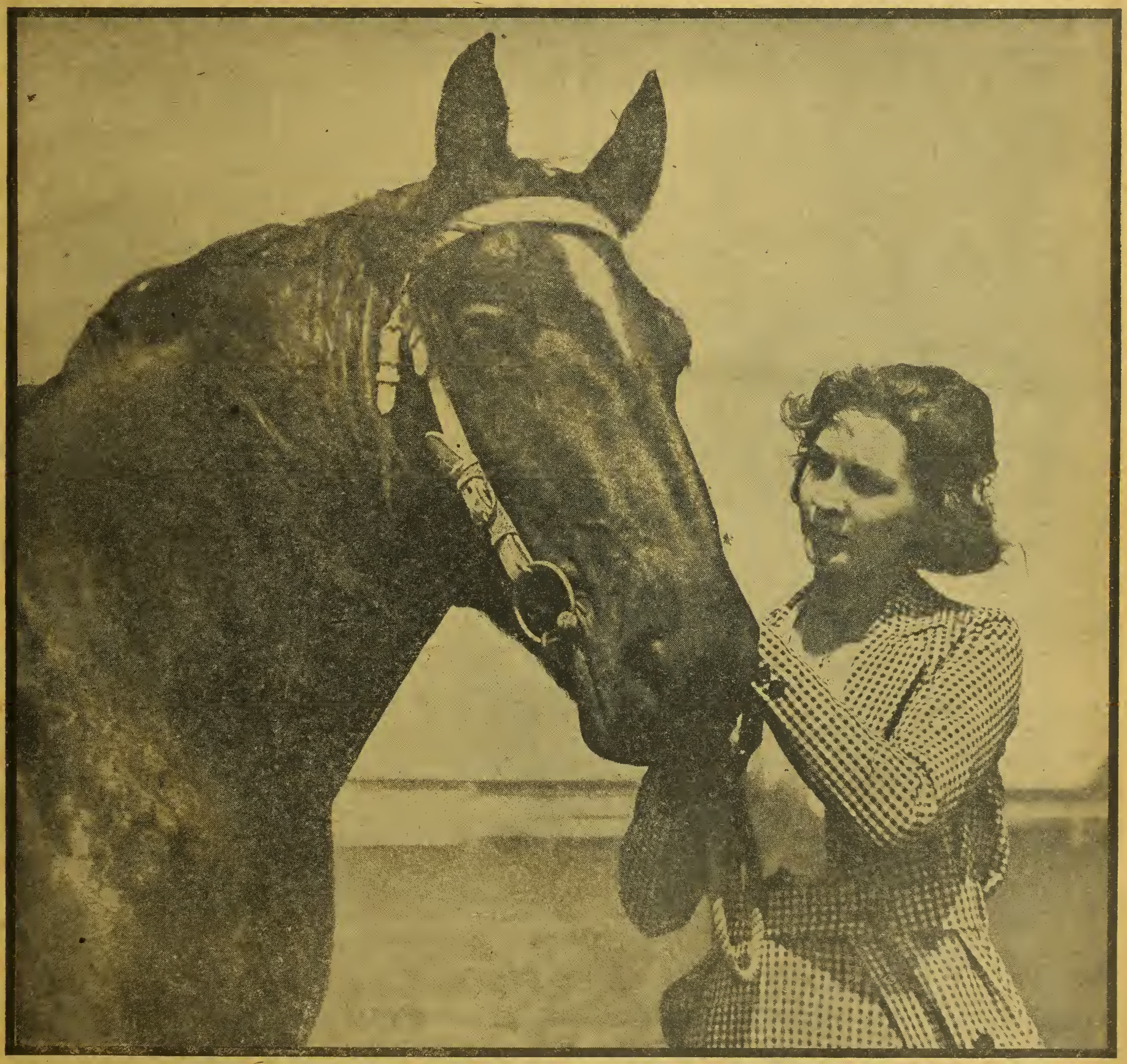
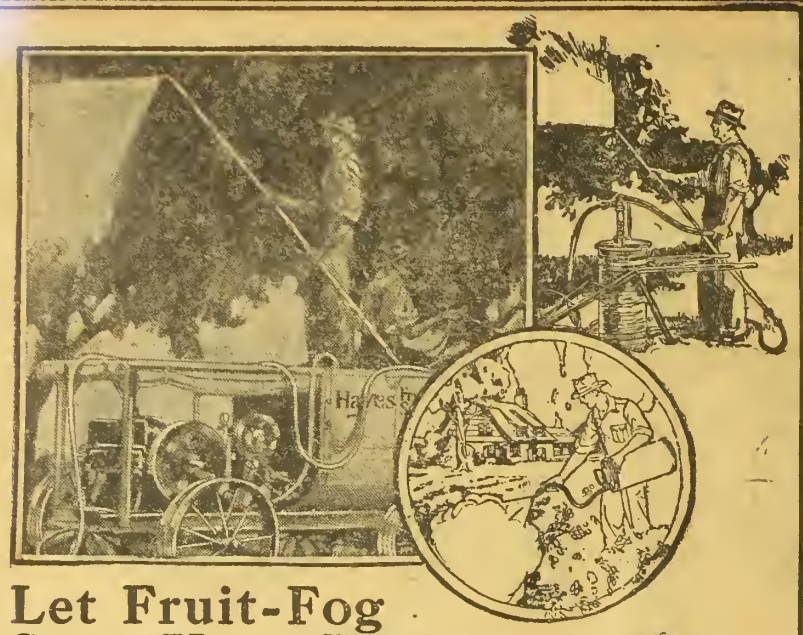
Vol. XXIII *Denver, Colorado, December 1, 1920.* *Semi-Monthly*



(Photo by H. Armstrong Roberts.)

JUDGING THE BLUEBLOODS AT THE COUNTY FAIR.

General appearance, 12 points: Form, close, full made, smooth turned, symmetrical; temperament, proud, stylish, disposition good; eyes, large, bright, clear; lips, thin, even curvature; lofty carriage.



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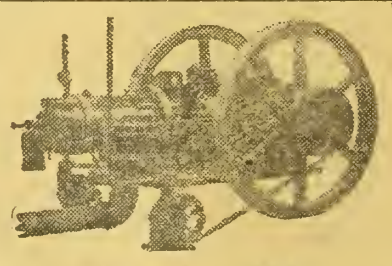

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But it is just as important to keep bearings properly lubricated for horses or tractors as for ourselves—a poorly lubricated bearing increases operating expense by more rapid wear and by the waste of power which must be paid for no matter whether it is generated by hay and oats or by kerosene.

Recently a test was made with two 10-foot disk harrows, one with bearings run dry and the other with bearings well lubricated, in order to ascertain the difference in draft. It was found that the harrow running without lubrication required 150 pounds more to pull it than did the other one under identical conditions.

Now, a draw-bar pull of 150 pounds at a speed of two and one-half miles per hour is equal to exactly one horse power. In other words, lack of grease on a 10-foot disk harrow means that one extra horse is needed to overcome the unnecessary friction, or else the amount of work done per day will be lower than it otherwise would, because the horses will walk more slowly with the overload.

If a tractor is being used and the disk is a tandem, the loss will be twice as great, or equal to two horse power, and about two extra pints of fuel will be burned each hour in order to overcome the draft due to unnecessary friction, to say nothing of increased wear on the bearings of the disk and on the tractor.

The same results will be found with most other farm machines. Take binders, mowers, side-delivery rakes, grain drills, etc., etc.—they will all run easier and last longer if the bearings are kept well lubricated. Furthermore, a bearing which is liberally supplied with grease or oil is not likely to rust when the machine stands idle, as moisture cannot come in contact with the bearing surfaces.

It is an old and true saying that "oil is cheaper than steel." The grease required to keep bearings properly lubricated is also cheaper than the kerosene required to overcome the friction in dry bearings.—Tractor Farming.

Stock Show Entries Close Dec. 20.

Everything is in readiness for the National Western Stock Show which will be held at Denver the week of January 15—22. A new hollow tile hog barn 100x185 feet has been completed during the year and will house the largest showing of hogs ever made in the west. In the center of the new barn is a show and sale ring, where the animals can be judged conveniently and where the annual stock show sale of breeding hogs will be made.

"Of course, the show will be bigger and better than ever before," says Robert R. (Bob) Boyce, the assistant secretary, who is now busy filing entries in all classes of the various breeds. Last year's show was over 20 per cent larger than the show of the previous year and unless all signs fail the show this year will be even more than 20 per cent larger than the 1920 show. Harry L. Youngerman, who for some years was Fred P. Johnson's assistant, was recently made general manager.

The usual number of eastern breeders will be present with their show herds and the older western breeders will also have their usual representation. In addition to the regulars, however, there will be this year a large number of new breeders on hand with show herds. Anyone interested who has not received a premium list and entry blanks, should write at once to Mr. Robert R. Boyce, assistant secretary, Western Stock Show Association, Denver, Colo. December 20 is the closing date for entries.

Results of investigations and preventive measures against grain-dust explosions, which cost 80 lives and $7,000,000 property damage in 1919, are contained in a new book being distributed by the Bureau of Chemisty, United States Department of Agriculture.

American farmers planted 14,000 acres to hemp in 1920, according to the United States Department of Agriculture. The crop is valued at about $1,500,000.

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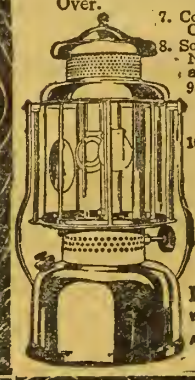

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Western Farm Life

A Western Magazine for Western Farmers and Stockmen

VOLUME XXII. DENVER, COLORADO, DECEMBER 1, 1920. No. 23.

San Luis Valley Growers Study Their Potatoes

PEDIGREED SPUD SEED AS ESSENTIAL AS PUREBRED SIRES

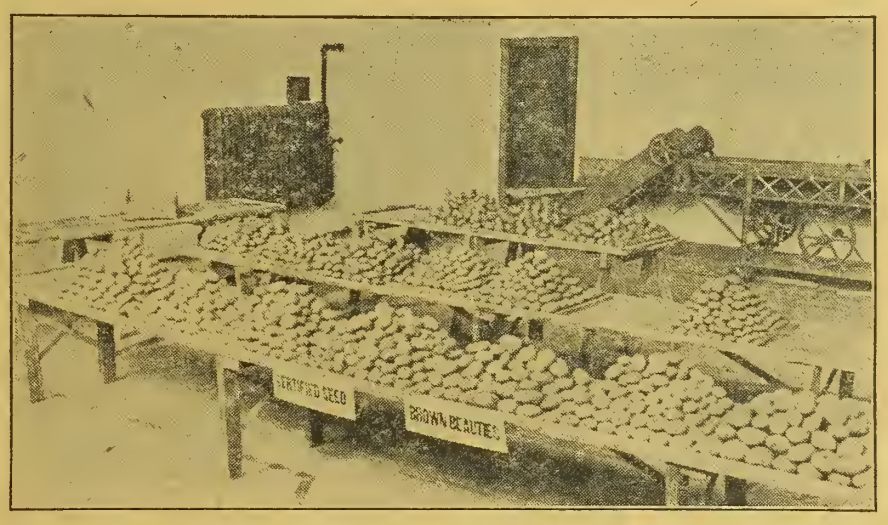
ALVIN T. STEINEL.

THREE thousand carloads a year is a considerable quantity of potatoes and when a district reaches that point in quantity production it is time to look after quality, if the trade is to be held. That is why the San Luis Valley, which in recent years has added to its list of surplus crops the useful spud, decided this year to hold a potato show. The Saguache County Farm Bureau originated the show idea and the Rio Grande County Farm Bureau fell in line, exhibits coming from the Center, Monte Vista and Del Norte potato districts. It was the first of what will be an annual event in the valley, to be classed with the San Luis Valley Stock Show, which is held each year in February.

In a livestock country like the San Luis valley where potatoes are grown on general farms, it is not difficult to get the farmers to see the value of pedigreed seed. They use that kind in improving their herds, so why not bring up the quality and type of the spuds?

And to do this properly the show idea is the thing—just as the livestock show is in furnishing opportunity for comparison of animal breeds and types. It is one thing to TALK about hill selection, seed treatment, rouging and the like, but quite another to SEE the results lined up on long tables where the potatoes selected with a view to table use, or for seed are shown in samples of a peck or bushel. There were 151 entries and while the exhibition was not as large as the Western Potato Show in Denver last January, it was not behind that big show in quality. The exhibition was held in the gymnasium of the big consolidated school at Center.

A distinguishing feature was the fact that it was confined to varieties that are commercially desirable, these including Brown Beauty, Russet Burbank, Red McClure, Irish Cobbler and Early Ohio. The two first named predominated. The Brown Beauty is a particularly good looking potato, very popular on the market and its growth habits are such as to adapt it to San Luis conditions. It lacks flavor when compared to some other varieties, particularly the Russet Burbank, which reaches perfection in that section. Maine cannot furnish anything in the line of Cobblers better in looks and quality than the exhibits shown at Center, and the Red McClures too, were excellent. Early Ohios, like the poor, we have always with us, and some potato growers are beginning to ask why, especially when they note the ill shape and uneven surface of the Ohio. Some say that the Ohio tastes "common." They do have a strong potato flavor which is objectionable to those who have become accustomed to the daintier flavor of some other varieties.



Certified seed exhibit at San Luis Valley Potato Show. (Photo by Locklin.)

These are some of the things one overheard in the crowds that followed the judging. Prof. H. D. Locklin, Assistant State Horticulturist, officiated as judge and did his work swiftly and well. There was no complaint about his placings. Here and there some grower was disappointed, not because he questioned a decision, but because he had not been careful enough in selecting an even run of potatoes for his particular exhibit. The classes were large, but with a few swift glances at the assortment in each class, Judge Locklin would set about immediately to eliminate the unfit by dropping white slips on the piles. That was notice to the exhibitor that he was "out of it" for that class. There were so many more white slips than ribbons that no one felt at all lonesome on being eliminated.

There were a few exhibits of such outstanding excellence that the crowd picked them for winners before the judge arrived. Notable was the showing of Russet Burbanks and Brown Beauties made by Corbin Wright of Monte Vista, who won sweepstakes for best market exhibit and for best seed exhibit, as well as taking first for best individual group display. His sweepstakes on market potatoes was taken on the prettiest 15-pound sample of Russet Burbanks that the writer has seen at any show or fair. The purple ribbon on seed was given on his Brown Beauties, which also were practically perfect in conformity to type of that variety and size for seed.

Certified Seed Displays.

Great interest was manifest in the certified seed displays. This was the first showing of pedigreed potatoes grown in the San Luis Valley. Saguache county, under the direction of County Agent W. A. Sauder, has taken the lead in certification, having grown about 75 acres during the past season. The work has also been carried on in Rio Grande county, under County Agent C. D. Hyatt, though not so extensively.

Mr. Sauder is engaged in farming, as well as being county agent, and he entered an exhibit of certified Brown Beauties under the firm name of Sauder & Wilson, which won sweepstakes, securing the $75 silver loving cup offered by the Horticultural Department of Colorado Agricultural College. Farm Bureau members warmly congratulated their county agent on his success, one man remarking:

"Well, sir, that shows we have a practical farmer as county agent. We farmers will have to show Sauder something about certified seed growing in next year's exhibit. He certainly showed us and he deserves the cup."

Only potatoes that had been officially inspected in the field and certified by the State Horticultural Department

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Kimball Potato Show Has Lessons for Growers

CERTIFIED SEED INDUSTRY DEVELOPED FOR SOUTHERN MARKET

T. S. PARSONS, Extension Agronomist, University of Wyoming.

THE fourth annual convention of the Nebraska Potato Improvement Association was held at Kimball, Neb., November 10 to 12. There was a large attendance of potato growers from the potato sections of central and western Nebraska and from eastern Wyoming. The potato show which was held in connection with the convention was also good, although the exhibits were not as large as expected.

Potato growing in western Nebraska is becoming an important industry. Both seed and market potatoes of the highest quality are produced. The growing of certified seed potatoes for the southern market is receiving a good deal of attention at the present time. Numerous demonstrations have shown that seed potatoes grown in this section, when planted in the South, produce better than those from Minnesota and Wisconsin. Western Nebraska and eastern Wyoming have such soil and climatic conditions that good potatoes can be produced both under dry-farming and irrigation, and buyers are looking this way for seed and market potatoes. A potato exchange has been established at Alliance, which handles many hundreds of carloads of potatoes every year. The growers have found that co-operative marketing pays. Nebraska is one of the few states that has potato inspection and a certified seed law and some valuable work is being done in the improvement of potatoes under the direction of H. O. Werner of the Nebraska College of Agriculture.

Jake Pedrett of Kimball is president of the Nebraska Potato Improvement Association. He is a first-class presiding officer and every meeting of the convention was lively and full of good things. W. A. Stuart, the potato specialist of the Department of Agriculture, was present and gave a lecture on "The Seed Potato as a Factor in Production." He showed how the western dry-land seed potatoes were superior to all others in nearly every case when planted in other sections. W. W. Burr, vice-director of the Nebraska Experiment Station, gave an instructive talk on soils and moisture conservation. Earle G. Reed, agricultural agent of the Burlington railroad; F. L. Robinson, a prominent potato grower of Kearney; E. R. Bennett, potato specialist of Idaho, were also present and made good talks on their various subjects. Several county agents from the western part of the state also appeared on the program. Prof. Bennett judged the potatoes at the show.

The potato show was one of the most interesting parts of the convention. Four counties of the western potato section had county exhibits. Kimball county was awarded first prize for the best potato exhibit; Dawes county, second; Scotts Bluff county, third, and Cheyenne county, fourth. In the individual 25-pound entries, Robert Garrard, Kimball, was awarded first prize; H. J. Horlick, Kimball, second, and Jake Pedrett, Kimball, third, in the the irrigated Bliss Triumphs. In the dry-land Triumphs, August Gadeken of Bushnell took first prize; Gust Forsling of Bushnell, second, and Albert Hueling of Chadron, third. H. J. Holista of Kimball took first prize in both Irish Cobblers and Downings. The Cheyenne county boys' potato club also had a small exhibit. Clement Kretz of Sidney took first place, John Mohatt of Sidney, second, and George Kretz of Sidney, third.

There were twelve 5-bushel lots of potatoes on exhibition, showing the quality of potatoes offered for sale in that section, and Prof. Bennett brought a small exhibit of Russet Burbanks and Idaho Rurals that were grown in Bonner county, Idaho. All of the county and individual exhibits were exceptionally good.

An interesting demonstration showing the effect of crop rotation on the quality and yield of potatoes was shown by the Scotts Bluff experiment farm. Potatoes grown in different rotations of two to six years were shown, and the fact that potatoes should not be grown successively on the same ground was amply demonstrated. A six-year rotation of oats, beets, alfalfa two years, and potatoes, with barnyard manure used on the beets, gave a yield of 362.7 bushels of marketable potatoes per acre, while potatoes grown continuously on the same ground for six years, only gave a yield of 72.7 bushels per acre, and none of these were marketable, being entirely covered with scab. This experiment has been carried on for nine years, using new Bliss Triumph seed from other sections every year. The results obtained are very striking.

Storing Water in the Soil Is Not a Mere Theory

PARSONS TELLS A DRY LAND FARMER EXACTLY HOW TO DO IT

E. R. PARSONS.

IN your article on Accumulating Moisture for Dry Farming in November 1st issue, you say, "any amount of water that we wish to accumulate can be acquired by fallowing the land in question so long as necessary; therefore, we can raise any crop that the irrigator can by simply waiting until our fallowed land has acquired the necessary moisture."

I am wondering whether you really meant to say what is brought out here in this very broad statement. I am not criticising, but asking for further information. How much water can be accumulated by the fallow method and over how long a period of years does it pay to fallow the land for storage of water? That is, would you advise trying dry farming in a section where we only have an average of 12 inches of rainfall a year? Would it pay us to crop this land every other year? Is there any accurate data on the amount of water that can be accumulated by the fallow method or by any other soil culture method so that dry land farmers can rely on the figures and base operations on them?

I have read a great deal on the subject of storing moisture but I find that very few of my neighbors, all of whom have farmed in this country longer than I have, pay any attention to what our scientific men say. A few of them raise winter wheat by the summer fallow method, but most of them seem to think that dry farming is a matter of luck. If we have plenty of moisture during any certain season they get good crops, if not, they expect a failure.

I have not been reading your articles very long, but it seems to me that if we have definite information concerning moisture conservation so that we could handle our soils so as to actually save the moisture for two or three seasons, dry farming ought to be easy. Isn't there a good deal of loss through evaporation? I am anxious to have more information on this subject and at the same time I wonder why, if these things are common knowledge, more of our dry land farmers do not follow methods that will make their operations certain and profitable even in the dry years.—Subscriber.

Here Are the Answers.

In order to avoid ambiguity in answering these questions, we will first define certain terms which it will be necessary to use.

When we speak of an inch of water or precipitation, we mean the amount of water which will cover the ground one inch deep. Film water is that which sticks to the soil granules after the free or surplus water has moved down. All water at first is free water until it becomes attached to something. When rain falls it is free water; if the soil is dry it moves down and spreads out into the dry subsoil until it all becomes film water. When more rain falls it passes between the granules of soil which are covered with film water until it reaches the dry soil below, when it also becomes film water; but while it is moving downward it is free water. Only the free water can move in the soil; the film water is practically stationary until evaporation depletes the supply or the roots of crops use it up. In order to compute the amount of water in the soil we must first know how much of this film water it will hold. Good soils and heavy soils hold more; thin and sandy soils less. In our ordinary western soils the percentage runs approximately from 15 to 17 per cent. Sixteen per cent may be said to be a fair average. If a farmer has this 16 per cent soil he will always find in the spring of the year, whether he has one foot or five of moist soil, that it will contain 16 per cent, no more, no less; for as more water comes it moves further down into the dry soil and also becomes 16 per cent film water. This per centage will be maintained until crops or evaporation use some of the water up. The measurements must be taken not immediately after a rain, but after sufficient time has been allowed for the free water to pass down.

The percentage of water held by the soil is very easily determined by weighing it, baking the water out of it and then weighing it again. With a soil auger the farmer can bring up a core of dirt from almost any depth he desires. This soil auger is made from a 2-inch carpenter's auger welded onto a piece of gas pipe; a T-joint is used for the handle. Extra lengths of pipe can be attached after unscrewing the handle. By the use of such an implement the farmer can tell exactly what water he has in his fallow and whether it will be safe to plant a crop or not. If he finds, for instance, that he has 4 feet of wet soil, he can figure that there is about 8 inches of water conserved, for soil containing the regular amount in the film state, from 15 to 17 per cent, will run about 2 inches of available water to the foot. If the average precipitation on his ranch runs about an inch a month during the growing season, he can reasonably count on 11 to 12 inches altogether, which is sufficient for a large crop.

In dry farming parlance the word fallow is used to explain the condition of the ground when fixed for the reception and conservation of moisture. The land is plowed as deeply as possible and then cultivated with the disk or cultivator to mulch it in such a way as to prevent run-off—leaving the surface fairly rough or corrugated. In winter time, or in the fall, the land is often listed or left rough from the plow to catch all the snow possible. Properly fallowed land is kept clean, well mulched, and free from weeds, until sufficient moisture has been conserved to plant a crop. This fallowing process may be continued for several months or several years, as long as the farmer deems necessary.

The Main Question.

How can the farmer accumulate all the moisture he wants? The answer is, by fallowing the land until he gets it. The writer planted an orchard in Colorado in 1894. The land was plowed deep and subsoiled where necessary; before and after the trees were planted the surface was cultivated several times each season, and no crust was allowed to form. At the end of five years in the center of the space between the rows the moisture line was down over 10 feet. This 10 feet of moist soil held over 20 inches of water. The prairie land on either side of the orchard was dry below the top 18 inches. Besides ourselves, Dr. Alway of the University of Nebraska took samples of moist soil with his auger from depths of 5 and 7 feet. Dr. W. M. Jardine, now president of Kansas Agricultural College, also examined the orchard. No weeds were allowed in the orchard and the interspaces were not planted to any crop. The trees, however, were using up moisture, but being small, could not begin to use all that fell.

The principal factor in accumulating moisture is deep plowing to allow the water to pass quickly downwards out of the way of evaporation, which will account for a certain proportion of the precipitation notwithstanding anything the farmer can do to prevent it.

Now comes the question. How much of the precipitation can the farmer hope to conserve? In a very favorable season two-thirds; in less favorable seasons about one-half. When the precipitation falls in three-day rains or heavy moist snows, it can nearly all be saved. When it occurs in single storms with hot weather intervening, much of it is lost by evaporation before it can reach sufficient depth. Small showers are practically total losses.

Once the moisture is conserved under a mulch there is very little loss by evaporation. During a six weeks' drouth the soil six inches under the mulch may not lose more than two or three units of its percentage and below the top foot practically nil. For complete data on evaporation see Bulletin 86 of the Agricultural College of New Mexico.

Does Fallowing Pay?

Does it pay the dry farmer to fallow his land for one season or more? It has been demonstrated by the wheat farmers that where moisture is limited the summer fallow is the only profitable method. For beans, potatoes and other crops, a few feet of moisture in the soil before planting may just about double the yield. When rain falls on soil which is already carrying film water for several feet it passes down very slowly and during this period the roots of the plants are luxuriating in free water which is the optimum condition for growth. It would seem a long time naturally to a farmer to fallow his land for two seasons, but there is no doubt that for certain crops it would pay. When watermelons, tomatoes, cucumbers and such crops can bring a hundred dollars or more per acre, the expense of a two-year fallow would seem small in comparison. In regions where the precipitation is about 12 inches, and land is cheap as it still is in the west, the safest and most profitable procedure for the farmer is to divide his ranch into halves, and crop and fallow them alternately. In California, Oregon, Idaho, Utah, etc., this method raises millions of dollars' worth of wheat and other grain every year, and will do the same anywhere for any crop under a similar precipitation. When sufficient moisture is conserved in the soil crops may be raised without rain and without irrigation. There is nothing new about this.

For thousands of years the whole of Egypt was fed on crops raised on land which had been soaked up by the Nile overflow. When the waters subsided the natives rushed in and mulched the fields with their wooden implements, and in a few months the crops matured without rain or irrigation. The same thing is done in California every year. As soon as the rainy season commences the land is plowed; as soon as it is over, the soil is mulched. Ten or twelve inches are often secured giving five or six feet of wet soil. On this such crops as corn, milo, Sudan grass, feterita, etc., are raised without any trouble by those

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Killing Canada Thistle by Flooding Method

IDAHO FARMERS DEMONSTRATE NEW WAY OF ERADICATION

CANADA thistle can be smothered in from three to six weeks by flooding, according to Paul A. Wenger, formerly assistant field agronomist of the University of Idaho extension division, who describes the flooding method in an Idaho extension bulletin entitled "Canada Thistle in Idaho and How to Get Rid of It." Where flooding is possible, he says, it is the easiest method of killing the thistle.

Although the flooding process is described as being applicable especially to the irrigated districts, this applicability is dependent, according to the description given, merely on the possibility of finding a steady source of water supply, so that it can be used in sections where irrigation is not practiced, provided there is running water available, which can be diverted to the thistle patch.

The patch of thistles to be flooded should first be cut close to the ground. A dike is then plowed up around the thistle patch, not less than eight feet beyond the outermost thistle and high enough so that the entire enclosure can be flooded to a depth of six inches or more. If the dike is too close to the edge of the patch one will find that the underground parts will be forced beyond the dike and this will cause new plants to spring up at various intervals outside of the dike.

To keep water in the enclosure during the flooding period, a ditch should be built along the side of the dike, and water should run in it continually. An opening is made from the ditch through the dike, which keeps the water always at ditch level in the enclosure.

Three weeks of continuous flooding will, in most cases, kill the Canada thistle. However, if the water can be allowed to stand for a month or six weeks, destruction of the thistle is certain. Thus far, no detrimental effects on the soil have been noted where thistles are killed by flooding. This method has been used with success at all times during the growing season. However, the hot summer months are recommended. Starvation by clean cultivation and elimination by poisoning are other methods of destruction of the thistle described by Mr. Wenger.

In several of the irrigated sections of the state the Canada thistle has become a real problem. Its dissemination has been rapid, due in part to the fact that little attempt has been made to free the fields of it and also because plants growing along the ditch banks have been allowed to produce seed, which has been carried in the water to cultivated fields. Farmers also have been hesitant to allow their infested land to remain idle for a season in order that the thistle might be combated.

Killing Canada thistle by the flooding method on farm of J. O. Call, Rigby, Idaho.

In the summer of 1918, the possibility of eradicating the Canada thistle by flooding was called to the writer's attention. Demonstrators were secured through the farm bureau in Twin Falls county and the work was started. The results obtained proved highly satisfactory and this method of eradication is now becoming popular in the irrigated sections.

It was evident from the start that flooding could be used only where the land was comparatively level, where the area was not too large, and where sufficient water was available.

Thank You!

I have been reading Lou Sweet's copy of Western Farm Life from time to time and I find it so full of good stuff for the farmers that I have come to the conclusion that I need it in my business. Enclosed find a dollar which I believe covers a two-year's subscription. Start me with the November 1st issue.—W. A. E. deBeque, Carbondale, Colo.

Five Thousand Prairie Dogs Bite Arizona Dust

HOW ABE CAUFMAN FOOLED 'EM BY PRE-BAITING THE BURROWS

SOME species of prairie dogs are too smart to be caught eating poisoned grain and subterfuge has to be resorted to in order to kill them. From the Arizona range comes information about the experience of Abe Caufman, a well-known cattleman of Seligman, who succeeded in killing the prairie dogs on 640 acres of land near his ranch headquarters. The area treated was on the Haulpai Indian reservation, where the dogs have been destroying from 25 to 50 per cent of the grass. Mr. Caufman figures his loss from prairie dog damage in the thousands. For years he had endeavored to kill the dogs with various mixtures, but without success. He finally concluded that they could not be controlled.

Officials of the U. S. Biological Survey heard of this and they asked Mr. Caufman for permission to conduct a demonstration on a section of his land. Permission was given and the work was taken in charge by L. G. Metcalf, representing the Biological Survey and the University of Arizona.

Mr. Caufman furnished men and horses and the state and government co-operated in furnishing poisoned grain. Instead of the usual method of spreading the poisoned grain it was decided to pre-bait the burrows. On the first day a small tablespoonful of clean, unpoisoned grain was placed at each active prairie dog burrow. This was cleaned up in a hurry. Two days later a tablespoonful of the new, tasteless, poisoned grain, recently perfected by the government, was placed on the same spots.

Naturally the prairie dogs decided this was another free feed and they "fell for it." Within 10 to 15 minutes results were apparent and before sundown practically every pairie dog on the poisoned area was dead. The number killed is estimated at 3,000 to 5,000. The cost was only 5 cents an acre.

A report from the Agricultural Department of the University of Arizona commenting on these results, says:

"It is a fact now well established that, no matter how tasteless a poison is, or how well prepared, unless an area is first pre-baited with clean unpoisoned grain and then followed with the poisoned grain, you can kill only 50 to 75 per cent of the pests; but by following the pre-baiting method you kill from 95 to 100 per cent in one treatment."

In Colorado pre-baiting does not seem to be essential. Success depends on the species; some rodent pests are more wary than other species.

As a result of the work on the Caufman ranch plans have been made for clearing the entire range in that vicinity of prairie dogs. The ranchmen are to furnish men, horses and subsistence, while the U. S. Biological Survey will furnish the supervision of an expert and the poisoned grain. The Caufman range is situated on the Indian reservation which is Federal land, hence, this co-operative arrangement is possible.

Similar work has been done by the Biological Survey in Colorado through a co-operative agreement with Colorado Agricultural College. In this state prairie dogs, Wyoming ground squirrels, pocket gophers, Kangaroo rats and the common brown rat are being exterminated. Usually the work has been handled through the county agents, farm bureaus and livestock associations, with the assistance of both the Biological Survey and the Department of Entomology of the Agricultural College. In Colorado pest districts are created under a state law, which permits of complete eradication of any specially injurious rodent. Land owners who do not willingly co-operate are compelled to bear the expense of rodent destruction on their land when such pest districts are organized. Prepared poisons are sold by the Agricultural College at cost. The price at present is 70 cents per gallon in quantities of less than five gallons and 65 cents per gallon for larger amounts, f. o. b. Fort Collins. In discussing details of rodent control in Colorado, Joseph Keyes, biological assistant in charge, for Colorado and Kansas, said to a Western Farm Life representative:

"Not only are we securing the complete eradication of the pests on the farms of this state, but we have been able to secure a ready and honest endeavor on the part of the individual to control rodents destructive to forage on the public domain and forest reserve land. On the forest reserve this is generally accomplished in co-operation with the U. S. Forest Service by short intensive campaigns at which forest rangers and their assistants are present as well as the other co-operating individuals. When sufficient funds are provided, the Biological Survey has placed in the field parties of four and five men fully equipped to carry on the work. In such cases the necessary poisons are prepared and supplied free for use on public lands. The importance of this work is better understood when we realize that the annual damage by rodents to forage on western range lands exceeds $150,000,000.

"In Colorado we have over two million acres of Federal lands and over ten million acres of private lands badly infested by injurious rodents. The past season we have distributed through co-operation over 80 tons of prepared poison. There has been spent over $30,000 for this poison, which expenditure has resulted in a saving of crops and forage to a value of over $400,000 to the farmers and stock raisers of the state. A dollar spent in poisoning will reap over ten dollars in the harvest.

"We must further learn to perpetuate those species of birds and mammals that are helping us in the control of these noxious animals, as well as instructing others in their protection. The introduction of farming has destroyed and disturbed the natural covers such beneficial species may seek, while the crops produced and planted have furnished an abundant and choice food supply for the injurious rodent. The balance of nature has been disturbed, as it were, and it thus becomes necessary to resort to artificial means of control as a problem in economics, if successful and profitable farms are to remain."

Poison grain mixture at U. S. Biological Survey headquarters in Denver, awaiting shipment to Moffat County, Colo.

Wheat Supply Is Short.

Stocks of wheat in the United States on October 1 totaled 608,000,000 bushels, according to estimates of the United States Department of Agriculture. This amount represents 477,000,000 bushels held by farmers, 102,000,000 bushels held at country mills and elevators, and 29,000,000 bushels held at points of accumulation on that date.

On October 1, 1919, stocks of wheat in the United States totaled 747,000,000 bushels, representing 515,000,000 bushels held on the farms, 142,000,000 held at country mills and elevators, and 90,000,000 bushels held at points of accumulation.

During the first quarter of the present season—from July 1 to October 1—the farmers marketed 321,000,000 bushels, as compared with 450,000,000 bushels marketed in the corresponding period of 1919—a reduction of nearly 29 per cent. The crop this year, plus the carry-over from 1919, is estimated at 798,000,000 bushels, or about 17 per cent less than last year.

El Paso Exposition Brings Out Strong Contest

TWELVE COMMUNITIES COMPETE FOR THE FARM BUREAU TROPHY

TOURISTS from the world's end come by thousands each summer to drink Manitou water from the bubbling springs at the foot of Zebulon M. Pike's cloud-towering natural monument. They wander through the famous Garden of the Gods, or climb the seven hundred steps to the top of Seven Falls to do homage at the picturesque shrine of Helen Hunt Jackson. They spend their money within marble-walled Broadmoor, play at golf on the links, or follow the polo ponies, or mix with the social set on Cascade avenue in Little Lun'on. And if you stopped one of them on the street and said: "How is this for a farming country?" the answer would likely be: "Stop your spoofing!"

And yet within the shadow-line of that beautiful range of mountains that draws these thousands there is a region rich in products of the soil, a well-stocked, well-farmed country that produces the permanent wealth, the all-year-round prosperity, that neither mine nor tourist traffic can duplicate.

Less than ten years ago this agricultural resource of the Pikes Peak region was undiscovered and people in the city were content to consider themselves dependent upon summer visitors. But times have changed. Today we see the farmer coming to Colorado Springs for an exhibition of his products, first to learn by rubbing elbows and comparing results with his neighbors, and second, to remind the city dweller that his sustenance comes from the near-by soil and not from scenery capitalized.

Hence the El Paso County Autumn Exposition, which is not a county fair, but an indoor display of soil products, gathered from all parts of a big county on which farming extends from the 5,000 to the 8,500 foot level, offering a variety of conditions, with limiting factors always moisture and frosts. Almost the entire county is given over to dry land farming, so called because crops are grown without irrigation. There is a limited area under the ditch; a large area still in prairie or mountain pasture, much plains land under strictly dry farming and some under mountain valley conditions—such as the Divide country, where forest and grassy mesa alternate.

There is something fascinating in studying the products of such a region of diversified farming, under such varying and usually difficult climatic conditions. One can truthfully say that all the farm products of the temperate zone are grown, and in paying yields. It speaks well for the farmers of El Paso county that they are successful; that they have made agriculture the dominating industry in what was originally a mining region and is still more noted outside for its tourist attractions than for anything else.

A spirit of goodwill and enterprise prevails and it is shown in the keen but friendly rivalry between rural communities, of which twelve had displays in the community competition. This was the big feature of the exposition. And Buttes-Wigwam, a southern El Paso section, won the first prize, a much coveted trophy which heretofore had gone repeatedly to Table Rock and other communities in the Divide country. The winning exhibit scored 95 points, with Table Rock second, having 81.4 points. The judging was done by Prof. A. E. McClymonds, agronomist, and Miss Mavea Allen, poultry specialist, of Colorado Agricultural College.

Other communities that had noteworthy exhibits were Hanover, Eastonville, Amo, Forest View, Ellicott, Drennan, Maizeland, Highway Junction, Kendrick and Tructon.

Amo showed its colors by a banner declaring that "This Community Has a Hundred Per Cent Membership in the Farm Bureau." The exposition is a farm bureau enterprise and the particular event in which this organization comes to the trading center with a message that says: "This is where your prosperity comes from." The County Farm Bureau, headed this year by James J. Gauld, gives the $25 prize for best community exhibit. Mr. Gauld was there to personally place the designation on the Buttes-Wigwam exhibit. County Agent J. C. Hale and Miss Jane Snow, the home demonstration agent, co-operated in stirring up community interest among the farmers, their wives and children—for boys' and girls' club work was not overlooked.

The Pikes Peak Poultry Association had charge of the poultry and pet stock show, which was a big feature of the exposition. This association is one of the strongest in the intermountain region and is doing notable work in building up the industry.

The influence of the rural schools was apparent in the splendid displays furnished by the consolidated districts. El Paso county is one of the best organized counties in the entire west along rural school lines, having made this progress in a very few recent years, under the direction of Inez Johnson Lewis, a county superintendent with a rural vision. A map showing progress in consolidation was a revelation even to many Colorado Springs people. These rural schools are either consolidations or centralizations of the small district schools, or have high school work: Monument, Calhan, Fountain, Peyton, Drennan, Tructon, Ellicott, Falcon, Eastonville, Table Rock, Hanover, Lytle, Ramah, Miami, Yoder and Greenway. Only in the mountain sections and in the extreme southeast part of the county, are there any of the old one or two room district schools, where attempts are made to teach all grades. In practically all of the above named schools the pupils are brought to school by auto-bus.

And still we hear in the cities the cry that "We cannot build schools now, because of war taxes!" But the farmers are doing it in spite of war burdens such as the average city dweller knows not of.

Space limitations prevent a fuller account of the Autumn Exposition, which was this year without a showing of livestock, because of lack of suitable quarters. Perhaps by next fall plans for an exposition that is to extend its scope throughout the Eastern Colorado plains region will have materialized.—A. T. S.

Utilizing the Big Fruit Crop of the Northwest

COLORADO ORCHARDISTS MAY LEARN FROM THEIR COAST COMPEERS

W. H. OLIN, Supervisor of Agriculture, Denver & Rio Grande Railway.

THE Northwest, including Washington, Oregon, Idaho and the Bitter Root Valley, Montana, has developed into our nation's best fruit basket. Here fruit is graded to a nicety for color, size and quality. When a grower gets into the Skookum class he knows he is at the head, for it is the highest grade apple grown in the U. S. A. When his butters, jellies and jams are incorporated in Farmer Paul's large and growing family of these delectables, he knows he has reached the present acme of quality. Now comes Mr. C. J. Calkins of Hood River with a scheme of furnishing fresh cider ad libitum to any consumer without violating any state or national law on beverages. Mr. Calkins has developed a process of condensing cider to a syrup without giving it a cooked flavor and this cider syrup can be put into barrels, kegs, tins or bottles as the trade may desire. It will, in the syrup stage, keep an indeterminate length of time.

Then there is the work of Mr. Paulhamus of Puyallup, Washington, with bush fruits, whereby not only the berry crop is conserved, but such a quantity of butters, jellies and jams come to market. It is said that this valley has an annual income surpassing that received by any other valley of similar size in the United States.

Friends, let us have a first hand conference with outstanding organizations and plants not well understood or known. So that your readers can check up on me, Mr. Editor, we shall give names and locations. Let us begin with the work Professor C. I. Lewis is now doing. As professor of horticulture at Oregon Agricultural College, he did a very strong work. As associate editor of the American Fruit Grower, Prof. Lewis has been read widely. But the greatest work this man has done he is now doing. He is organization manager of the Oregon Growers' Packing Association. His plan is to organize Oregon fruit growers to not only sell their fresh fruits co-operatively, but also to can, to evaporate and to otherwise conserve the by-products of the fruit and vegetable business.

August 1, 1919, this Oregon growers' association was started with 134 members, controlling the output of 3,000 acres. September 1, 1920, the association had 1,500 members, with 28,000 acres signed up. There are now ten packing plants in as many different communities. These are standardized plants all using the same machinery. The advantage of this is apparent. Ninety-five per cent of the green fruit sold represents a community pack. The present cost to the grower for this centralized pack is 1 cent per box. A careful, uniform inspection system is maintained. For each type of fruit, there is one uniform grade, pack and container. This tends to make trade calls stable.

This association plan of work is on the basis of helpful counsel in selection of farm fruit plans, to anticipate a one fruit plan in any one section and such a distribution over the territory as shall give a bush and tree fruit well adopted to each district; selection of the type that more nearly meets market demands and does best in a given region. The association also renders helpful suggestions in cultural methods, helps assemble harvest help and after harvest directs the product to market. It takes more than one swallow to make a summer. We must give the Oregon Growers' Packing Association a chance to prove their efficiency. Let us go to the oldest association now going in the Northwest.

THIS FRUIT PACKING PLANT BELONGS TO THE GROWERS.
Main plant of Eugene, Oregon, Fruit Growers' Association.

"Olin," said Prof. Lewis, "you cannot afford to leave the Northwest without visiting the Eugene Fruit Growers' Association. There is the most complete plant in this whole Northwest region."

We found it even so. This association was organized in January, 1908, with 94 stockholders and $5,000 capital stock. Today this association has 685 stockholders and a paid-up capital stock of $72,160. It has had a continuous existence, a definite plan and purpose from the beginning. This association handles as large a percentage of the fruit in the fresh state as possible for its stockholders. To protect its stockholders on containers this plant has a box factory. In 1919 this department cut approximately one and one-third million board feed of lumber into boxes. The green fruit department sent out 32,944 boxes of apples and pears. The ice and cold storage department not only furnishes ice and storage for the fruit products, but supplies Eugene City with its ice supply.

The canning department of the association put up 80,000 cases of canned goods last year. All vegetables suitable for canning as well as fruits are utilized. This department is of vital importance to truck and bush fruit farmers of this district, encouraging diversified fruit and vegetable farming.

The drying department is one of the largest in the Northwest and the association is able to direct the planting of vegetable and bush fruit so as to have a continuous supply. There is some product canned or dried each month in the year. This makes business for the association, so it can maintain its force of labor throughout the year.

The vinegar department makes from 25,000 to 30,000 gallons of vinegar each season. There is practically no waste. Whatever the grower has to offer is taken, if the manager feels certain it will sell for enough to pay cost of manufacturing into a salable article. The fruit remains the property of the grower. When the commodity is sold, the cost of manufacture and sale is deducted and the grower gets the rest. The association carries out a system of financing the growers when in need of money for growing and harvesting their crops. In turn, the association at times borrows considerable amounts from the grower stockholders. This plan is quite unique and most servicable to both the stockholders and to the association.

It takes a good manager with a good business head to make this scheme both sound and serviceable to both parties. Mr. J. O. Holt, the secretary-manager, is peculiarly fitted for this position. The writer does not know what salary he receives. Whatever it is, he is competent and earns every dollar he draws. This illustrates why this co-operative plant succeeds. It is due to its sound business policy, its universal support in its district and its efficient business manager. Otherwise it would not have its full twelve years of successful operation when so very many of the co-operative fruit associations in the Intermountain region, founded upon a similar plan, has gone to the wall.

One thing more permit us to say about one division of this association's work. The evaporator run by this association at Eugene City is reported to be the largest in Oregon. It has 49 tunnels holding about 4,500 trays and its capacity is 1,000 bushels per day. It was built for evaporating prunes, but it is also used, in July, for loganberries, and late in the fall for apples and walnuts. The spray plant of the association furnishes the lime, sulphur and other spray material, all ready mixed and ready for use. It is furnished to association members at cost to the plant. Seeds, tools, fertilizer and boxes are likewise furnished at cost.

The writer found in the Northwest three different concerns, each claiming a superior process for abstracting all but a minimum amount of water from fruits and vegetables without breaking down the cellular structure of the treated product.

Mr. A. F. Spawn claims to have been the first man to conceive of a commercial plan for taking water out of fruits and vegetables in that careful manner. The process of abstraction does not injure the cellular structure of the commodity treated. His first successful demonstration was made in Australia in 1886. This antedates the work done in Continental Europe, that the U. S. Department of Agriculture has given as the origin of dehydration. Mr. Spawn claims to be the originator of dehydration. This man has operated on three continents and now has a headquarters plant in Seattle. The writer, however, could not find that he has anywhere now a commercial plant in actual operation.

The Northwest Company has a commercial plant in operation at Cashmere, Wash., that is giving special attention to cooking apples. The most important concern now operating in the Northwest, the writer found to be King's Products Company of Portland. Two large plants are in operation. One at Salem and the other at Dalles, Oregon. This company is well financed and has under contemplation the establishment of a third branch plant. Its products cover a multitude of fruits and vegetables.

Outside of those plants already named two plants in Washington stand out as of primary importance. The first is the Payallup and Sumner Fruit Growers' Association. This operates at three points, Puyallup, Sumner and Spokane. The total gross business done by this association in 1919 was $4,500,000. This plant has made berry growing in the valley where the headquarters are established so valuable that the cash returns per acre for berry crop surpasses

(Turn to Page 11.)

Dad Gets a Lesson in Pigs From Young Breeder

MOFFAT COUNTY BOY SHOWS HIS FATHER THAT PUREBREDS PAY

I DON'T know how much the kid learned from his experience, but I do know that it has been of great value to me. I have been raising pigs on a fairly large scale for a number of years but I never before knew just what it cost to raise a pig. I do know, however, that it costs less to put gain on a purebred than on a scrub pig, and each pound is worth several times more. I wouldn't be surprised that the kid has converted me to purebreds."

This testimonial to the value of pig club work comes from Al McKinnon of Moffat county, Colo., whose 10-year-old son Allan won $118 in cash prizes with his pig Rosie at northwestern Colorado fairs this fall. The Moffat county pig club work was organized and backed by the Craig National Bank as a means of developing the livestock industry in that section.

Young McKinnon's $20 pig has developed into an animal worth $150 from a breeding standpoint and in addition won prizes to the amount above mentioned. Rosie is a registered Duroc Jersey. She weighed 34 pounds when Allan McKinnon got her and made a gain to 200 pounds in a little over three months at a total expense of $39.70. She was shown at the Moffat county fair in Maybell, where she took first prize and she repeated at Hayden at the Routt county fair, winning sweepstakes for best pig exhibited there. She will probably be shown at the National Western in Denver in January.

Allan McKinnon is ambitious and he expects to invest his pig club winnings in a purebred Milking Shorthorn heifer, which is to become the foundation animal for a herd of that breed.

J. J. Toole, cashier of the Craig National Bank, acted as pig club leader and was successful in keeping the boys interested in their work. Moffat county is as big as some of our eastern states, its area being 100 miles long by 90 miles wide, with a population of less than 6,000. The farmers and ranchmen need to put their hay and other feed into livestock on the farm in order to make a success of their business. Banker Toole says he feels well repaid for the first season's work in the success the boys are making with their pigs and he is especially proud of young McKinnon's showing. This boy's story of his prize-winning pig follows:

"I am a pig club member because I wanted to raise a pig of my very own. I got my pig through the Craig National Bank. I named my pig Rosie because she is red. I chose a Duroc Jersey because my father's pigs are all Berkshires. Pasture is important in pig raising, because it is economical. Rose did not drink a great deal of water. She had plenty of clean water whenever she felt like drinking.

"I weighed my pig on a scale with a platform I had made especially for that purpose. I weighed Rose every week on Thursdays. She weighed 75 pounds July 8, and on August 5th 130 pounds. She weighed 170 pounds when I took her to the pig show at Craig, September 6.

"I fed my pig her milk and grain out of a pan and her pen was in an alfalfa pasture. I fed my pig the first thing in the morning, at 10 o'clock, at 2 o'clock and at 6 o'clock every day. I fed my pig corn meal, milo maize and cracked corn. She had alfalfa pasture. I gave her sour milk and water to drink. I gave my pig a bath once every week. And Rose is quite a pet.

"My club leader, Mr. Toole, came to visit me, also the county agent, Mr. Davis, and Mr. Walter Freeman. They told me how to take care of my pig. Most everybody that came to my father's ranch would ask to see Rose.

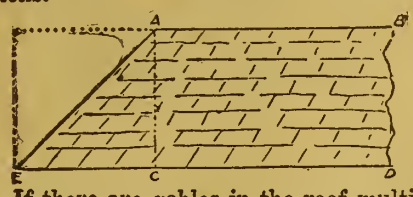
"At the pig show I learned that the other boys worked as hard as I did for the prize. Well-bred pigs are better than scrubs, because they repay you for your trouble. And next year I hope to raise, with Rose's help, some pigs for the pig clubs in our county, and raise one to take to the State fair. Pigs, when well cared for, are quiet and gentle and if run on alfalfa pasture make cheap gains. To be a good pig club member a boy must rise early in the morning."

Estimating Amount of Paint.

Farmers do a good deal of their own painting of houses, barns and other outbuildings. Few know how to measure surfaces to be painted and estimate the amount of paint needed for a given job. A few simple rules may be of service to our readers and possibly save them some money on paint.

To find the square feet in flat or nearly flat roofs, multiply the length by the width. If the roof is irregular in shape, as many are, the square feet are found by multiplying the length of the comb (A to B in accompanying diagram) by the distance between the eaves and the comb (D to B). Then measure from A to C and multiply by the distance from E to C; then divide that result by 2.

Add the results of the two calculations.



If there are gables in the roof multiply the length of the rafters by one-half the distance from the cornice to the peak; then multiply this result by the number of gables; that is if the gables are all the same size. If different, each must be calculated separately.

To get the square feet in the exterior walls, multiply the length all around the house by the height of the wall. If there are any gables add the area of each and then add one-fifth of the entire result for trimmings.

For example: Measurements are wanted for a house which is 30 feet wide by 50 feet long by 20 feet high to cornice. It has two gables 10 feet high by 30 feet wide. Answer:

2 ends 30 ft. wide equal ..... 60 ft.
2 sides 50 ft. long equal .....100 ft.

Total length of all four sides..160 ft.
Multiply this by the height of wall, or ..... 20 ft.

This will give you.....3,200 sq. ft.
Or total number of square feet in four walls of house.

Now figure the gables 10 ft. by 30 ft. wide:

Divide the height, 10 ft. by 2, which equals ..... 5 ft.
Multiply this by the width, or 30 ft.

Which equals the paint surface of one gable.....150 sq. ft.
For 2 gables multiply by.... 2

And the result is .....300 sq. ft.
Add the area of the walls..3,200 sq. ft.
To the area of the gables.. 300 sq. ft.

And you get .....3,500 sq. ft.
Now add one-fifth of this total for trimmings, or .... 700 sq. ft.

And you get .....4,200 sq. ft.

Hence you will need enough paint to cover 4,200 square feet of surface.

To estimate the quantity of paint required for any job divide the number of square feet to be covered by the covering capacity of the paint. Of course, the spread of paint will vary somewhat according to the surface on which it is applied. A rough surface will absorb more than a smooth surface, viz:

Under average conditions high grade house paint will cover 350 to 400 sq. ft. two coats. Best grades of barn and roof paint will cover 200 to 300 sq. ft. two coats.

Shingle stain will cover 125 sq: ft., two coats, brushed on, 2½ gallons will dip 1,000 shingles. Dry or old shingles require more material than smooth new ones.

Paint should not be looked upon as an expense. It prevents decay and replacements of decayed parts of buildings are more costly than "the ounce of prevention," paint.

Silage Cuts Feeding Cost.

That the addition of silage to a ration of alfalfa hay will make steers gain more rapidly in weight, shorten the feeding period, reduce the cost of making gains, increase the market value of the animals and increase the profits is shown by a cattle feeding test made last winter by the Arizona Agricultural Experiment Station, the results of which have just been made public in a bulletin by Dr. R. H. Williams, head of the animal husbandry department.

Thirty-six steers were used in the experiment, 27 of these being polled, out of native cows, mostly Holsteins, and sired by polled Shorthorn bulls. The remaining 9 were high-grade Holsteins. These animals were raised in the Salt River Valley and were in good pasture condition, averaging 889 pounds and about 30 months old. They had been maintained mostly on alfalfa pasture, but a few of them were accustomed to eating hay.

The steers fed on alfalfa hay alone gained an average of 1.40 pounds per day; those fed on alfalfa hay and silage made a gain of 2.39 pounds. The addition of silage to the alfalfa hay thus increased the daily gain at the rate of .99 pounds per steer.

The objects were, to compare alfalfa hay with a ration of alfalfa hay and silage; to compare silage and alfalfa hay with silage and cotton-seed meal, and also to compare these two rations together, forming one of silage, alfalfa hay and cotton-seed meal. Other phases of the experiment included the addition of ground milo maize to the basal ration and also the addition of cotton-seed meal.

The general summary for the main test brought out the following points:

Steers averaging 891 pounds and 30 months old will consume about 30 pounds of alfalfa hay daily the first 77 days in the feed lot.

Steers fed on alfalfa hay and silage finished more rapidly than those given alfalfa hay and were worth 50 cents per hundred more at the end of the test.

Each steer fed on alfalfa hay lost $17.27, and those given silage and alfalfa hay made a profit of 35 cents per steer.

The cost of feed was $27.55 per steer for alfalfa hay in Lot 1, and these steers gained an average of 107 pounds; while in the other lot the cost of feed was $23.18 per steer, and these steers gained an average of 184 pounds.

All the steers given silage and alfalfa hay gained more than any of the steers fed exclusively on alfalfa hay.

A margin of $1.98 per hundred pounds was necessary in the lot fed hay and only 72 cents per hundred pounds was necessary where the steers were fed silage along with hay.

The cost of producing a hundred pounds gain was $25.63 with alfalfa hay and $12.58 with silage and alfalfa hay, or less than half as much in the lot where silage was fed with alfalfa hay.

The addition of 47.14 pounds of silage per head daily decreased the consumption of alfalfa hay 19.64 pounds.

The steers receiving alfalfa hay and silage consumed less dry matter, total digestible nutrients, and therms per hundred pounds gain.

Alfalfa hay alone is not a balanced ration for fattening 2-year-old steers, and the addition of silage to a ration of alfalfa hay was beneficial in every respect.

Kanred Under Irrigation.

A comparative test between Kanred and Turkey Red wheat made in Boulder county, Colo., during the past season indicates a decidedly larger yield for the Kanred with some other advantages, that make this variety attractive for the irrigation farmer. A complete report on these tests has just been made by County Agent Yeager, from which the following facts are gleaned:

On the farm of A. D. Holt, four fields of Kanred were grown and one field of Turkey Red. They were on similar soil types and handled identically. The record of these five fields was as follows:

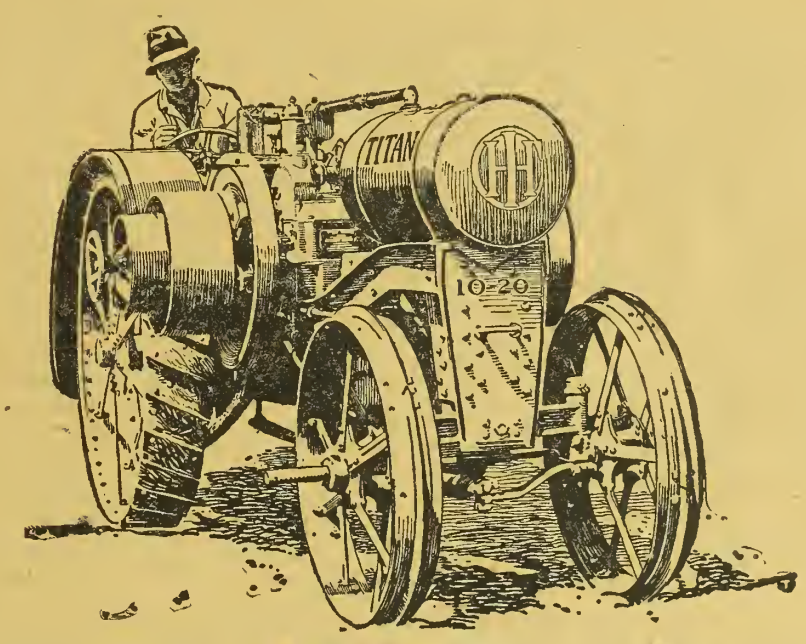
Kanred on summer fallow, 58 bushels.
Kanred on summer fallow, 60 bushels.
Kanred on beet ground, 58 bushels.
Kanred on corn ground, 67 bushels.
Turkey Red on alfalfa ground, 54 bushels.

Every field of Kanred outyielded the Turkey Red from two to thirteen bushels per acre. The Turkey Red seed had been secured from Logan county and was dry-land grown.

Other farmers reporting on tests were Will Kitely, who had Kanred that made 65 bushels per acre, while Turkey Red on his farm averaged but 51 bushels. Fred Muhme, with one acre of Kanred that yielded 60 bushels, but was badly rusted and lodged; John Butterworth, five acres of Kanred unregistered and impure, 50 bushel yield in spite of lodging damage; O. C. Harris, five acres, badly windblown, 33 bushels; Burt Hart, fraction of an acre of Kanred, 60 bushels, Turkey Red, 50 bushels; C. L. Hover, fraction of an acre, damaged by sparrows, 53 bushels.

The conclusions given by the county agent in his report are that Kanred produces a little stronger straw, stands slightly higher, stools better, and produces a longer and plumper head than Turkey Red. Apparently the wheat is as much subject to rust as any other variety and it will lodge if grown on too rich ground.

If in need of advice, ask Western Farm Life Service Bureau.



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Anti-Farmer Propaganda.

Propaganda unfavorable to the producer is already being spread broadcast by the food speculators who are planning to head off attempts of the farmers to stabilize the marketing of wheat through the formation of a cooperative marketing organization, which is one of the big projects of the American Farm Bureau Federation. Appointment of the Committee of Seventeen, which is discussing details of the wheat marketing plan, has been the signal for attack by the traders who have fattened their purses at the expense of both producer and consumer. Metropolitan newspapers are being used to further the campaign of the food speculators to bring discredit upon the farmers' movement for fair prices.

The Rocky Mountain News of Denver, in its issue of November 16, carried a dispatch from Washington, D. C., as a "Special Leased Wire" which was so intentionally biased and unfair that even an office boy officiating as news editor should have discovered its nature. "Gigantic combine," "huge combine," "new wheat trust," "monopoly," are some of the terms applied in this dispatch to the farmers' efforts at co-operative marketing of the wheat crop.

The "Special Leased Wire" service of the Rocky Mountain News is furnished by a Chicago newspaper. The farmers are entitled to know the truth about the origin of such dispatches. This one could have come in one of two ways: either this Chicago paper is interested in preserving trading in futures on the Chicago Board of Trade (food gambling), or one or its Washington correspondents has, on his own responsibility, assumed to interpret the action of the American Farm Bureau Federation as an attempt to circumvent the anti-trust law.

There has come into existence in recent weeks a "news" distributing agency in Chicago which is forwarding to Western Farm Life and other farm publications, articles on general subjects, with now and then a defense of the Chicago Board of Trade and the food speculators. It is quite evident that the grain exchanges are preparing to resist efforts of the producers to get a fair show on the market and that every available channel of publicity is to be used to stir up the general public to antagonism against the farmer.

Paid propaganda like that sent by the so-called news distributing agency is ineffective, because every editor readily recognizes it for what it is. But when influential newspapers publish as news such unfair and biased statements as that of November 16, it is time to direct public attention to it. Sources of this anti-farmer propaganda must be exposed.

The great mass of conservative farmers joined forces with the consumers of the cities in the recent election and gave radicalism its death blow in the western states. While the farmers appreciate the words of approval given them by the press for their soundness, let that press beware of falling into the error of thinking that the farmer's marketing problems were settled November 2. There were platform promises made by both parties in the recent campaign; one party only could win, but both went on record for constructive legislation that will legalize co-operative marketing on a national scale. If in that process the surplus trader whose only chance for revenue comes from repeated fictitious sales of grain and other food products is to be finally outlawed, the consumer will share in the benefits with the producer.

Let it be understood at the outset that the men who are behind the wheat marketing plan are mentally a match for the keenest of the middlemen. They recognize the folly of any scheme to exercise predatory control of a food commodity and that is the very thing they are aiming to remove through the co-operative plan. Co-operative marketing of farm products is neither a trust, a monopoly nor a combine in restraint of trade, but insurance to the producer that his crops may move toward the consumer in an orderly, even way, so as to avoid violent fluctuations that are beneficial only to a class of parasites that have been living too long on the sweat of the farmer's face and the shekels out of the consumer's pocket.

✦ ✦ ✦

Voice of the Farm Press.

Helpful suggestions are combined with a strong note of protest uttered by the farm press of the nation anent present disturbed agricultural conditions. Editorial comment clipped from leading agricultural magazines follows:

* * *

The notion that farmers can have anything to say about prices of farm products until they have first gotten a real understanding of the forces which make prices is an iridescent dream. And they cannot get such an understanding except in the way we have pointed out so many times, by setting trained men at work for them and accumulating basic information. A big gun is a formidable weapon; but unless you have shells to shoot in it, it cannot do nearly as much damage as an energetic colored man with a razor. Mark Twain once said something to the effect that he admired a rooster for two things, first, because of his crow, and second, because he had spurs to back up the crow with. —Wallace's Farmer.

* * *

Grains are an integral part of most rotation programs, but if this great and inevitable slump from war quotations for cereals shall lead some to pay more attention to good grass and livestock it may not prove to have been an unmixed evil. Even adversity sometimes has its uses. Let us study how to improve our grasslands. Let us avoid foolish speculations in stock breeding. Let us keep good animals raised from seed of moderate cost. Let us feed more of our grain and hay, as fast as we can manage it, instead of hauling so much of it, and the fertility of our land along with it, to market. We may then hope to get at least an "even break" on conservatively-valued lands. Cheaper feed will in time enable us to meet the return of stockyard market levels to a normal pre-war basis.—The Breeders Gazette.

* * *

Corn is down, hogs are down, wheat is down, cattle are down, cotton is selling for less than it cost to make it, tobacco is likely to sell the same way, the wool market is more of a memory than anything else. The most expensive crops ever made are selling at prices down in some cases to pre-war levels, while most things the farmer has to buy are still held far above that level. Oh, yes, the farmer is getting it right now "good and plenty." The burden of price reduction has been laid upon him and he feels about as sorely laden as was the proverbial camel just before the last straw was laid on. It is the exceptional farmer who is cheerful these days. Lots of them are convinced that the last straw is just waiting to drop and that their finish is the matter of only a little while. Now, without attempting to minimize the seriousness of present conditions, without trying to find sweetness in adversity, with every desire to avoid any optimistic prophecies not justified by facts, let me say that this dreaded last straw is not going to fall, that the agriculture of the country is not going to smash, that even the cotton growers and tobacco growers are mostly coming through still solvent, and that there is a better time ahead for farmers and for farming. I have three reasons for this faith. One is the fact that the country cannot well get along without a profit-producing agriculture, and a prospering and progressive country population. Another is that the country is beginning to realize this. The third is that farmers are slowly coming to realize both their own ability to work out their problems and the necessity of their doing so.—Southern Agriculturist.

* * *

When the time comes—if it ever does—that the producer is certain of a price which assures a reasonable profit, and when the market is so regulated that the middleman does not exact the pound of flesh from the consumer, thereby preventing quick disposal of the products of the farms, that time will chronicle a rush of "back-to-the-farm" which will silence predictions, often heard these days, of a possible world famine. The farmer will always be compelled to take his chances with nature. Frost, drouth, heat, cold must all be reckoned with. The farmer is willing to take those chances and to produce largely, but when in addition, he is compelled to take chances with the market which is largely under the influence of manipulators, the gamble is too great, and banking, merchandising, or other venture proves more attractive. This is simply the natural course of commonsense business and no number of preachments on the necessity of "back-to-the-land" avails.—California Cultivator.

* * *

The farmer who makes it a practice to rear his calves and raise hogs will not sustain the loss or find the difficulty in utilizing his skimmilk as the one who depends entirely upon his cows for his income. Diversified farming, taking it by and large, is the safest to follow.—Hoard's Dairyman.

* * *

Livestock is not worth as much as it ought to be. But it is worth many times over what oil stock is—and the many other worthless kinds of stock so freely sold. Better a bunch of hogs, even though raised at a loss, than a drawerful of pretty paper bought with real money.—The Dakota Farmer.

* * *

National safety demands that the farmers be permitted to secure credit with the same ease as those who deal in their products or those whose money is invested in other lines of busines. National safety demands that the farmer be encouraged and assisted in every possible way to weather the storm that is raging in the markets and threatening to devastate the agricultural industry.—Michigan Business Farmer.

Textbook on Agricultural Botany.

"Pastoral and Agricultural Botany" is the title of a textbook by Dr. John W. Harshberger, Ph. D., just issued by P. Blakiston's Son & Co., Philadelphia publishers. The author is well known as professor of botany at the University of Pennsylvania. The volume epitomizes the laboratory and research work of the writer connected with a course of botany given to the veterinary students of the University of Pennsylvania for the past twenty-five years. There is considerable on the subject of poisonous plants, which would be of particular interest to western cattle and sheep growers. The volume is intended as a handbook for farmers, stock raisers and veterinarians. It is well illustrated.

Hand Book on Farming.

"The Hand Book for Practical Farmers" is the title of a volume from the press of D. Appleton & Company, dealing with the business and scientific side of farming. The volume is a compilation of material written by experts and is edited by Hugh Findlay, B. S. A., lecturer on horticulture at Columbia University. Some twenty-five of the leading men in various phases of scientific agriculture, including soil management, crops, fertilizers, livestock, farm economics, etc., are included in the list of contributors. The volume is well illustrated and is the most comprehensive book of its character issued in recent years. The price is $5.

Colorado Stock Growers Meet.

The annual convention of the Colorado Stock Growers' Association will be held in Denver, December 21 and 22, at the Albany hotel. This meeting is called for the purpose of electing officers and for revision of the constitution and by-laws, as well as consideration of business pertaining to the growing, feeding and marketing of livestock. Particular attention will be given to national and state legislation. The Colorado legislature meets January 1, hence it is urgent that the stock growers get together on a program for that session.

All livestock associations are invited to send delegates and all livestock producers are urged to come, whether members or not. The call for the meeting is signed by W. S. Whinnery, vice president of the association.

Tips From the Bulletins

Farmers' Bulletin 1093, United States Department of Agriculture, deals with the "Influence of the Tractor on Use of Horses." The author of this bulletin is L. A. Reynoldson, Scientific Assistant.

The first questions that the prospective tractor owner asks are:

For what operations can I use the tractor?

In what operations will it displace horses in whole or in part?

How many horses will it displace on my farm?

This bulletin is designed to help the farmer answer these questions for himself. It is based on the personal experience of 191 tractor owners in seven corn belt states. It shows that on these farms the number of horses kept was two or three per farm less after the purchase of tractors, that the average size of the farms was 22 acres more, and that the horses left on the farms did 75 per cent of the tractive work, while the tractors did 25 per cent. All the reports emphasize the fact that the great advantage of the tractor lies in its ability to save time at critical seasons when time is precious and the success or failure of an entire crop hangs on the speed with which it is handled.

* * *

The Bureau of Plant Industry have recently issued a bulletin on "The Development of the Peruvian Alfalfa Industry in the United States." The author is H. L. Westover, Agronomist, Office of Forage Crop Investigations. It is Department Circular 93.

Peruvian alfalfa was first introduced into the United States from South America in 1899, but the earliest introductions were not perpetuated. Another introduction was made in 1903 under S. P. I. No. 9303, and it is the progeny of this introduction that constitutes the true Peruvian alfalfa of the United States at the present time.

Peruvian alfalfa may be readily distinguished from common alfalfa, but it is more difficult to distinguish the "smooth Peruvian" from the common, and as a result unscrupulous dealers prefer to handle "smooth Peruvian," as it gives them a better opportunity to dispose of mixed lots of seed without being readily detected.

As compared with common alfalfa, Peruvian is more upright, less branched and has fewer stems and smaller crowns. It is also characterized by rapid growth, quick recovery after cutting, and ability to grow in cooler weather than common alfalfa.

Copies of this bulletin may be had at 5 cents each on application to the Superintendent of Documents, United States Printing Office.

* * *

Farmers' Bulletin 1127 on "Peanut Growing for Profit," is a new bulletin which may be obtained from the Division of Publications, U. S. Department of Agriculture, Washington, D. C.

Peanuts have become one of the best money crops for use in rotation with cotton and other farm crops in the fight against the boll weevil. Until recently peanuts were grown in the greater part of the Gulf Coast region primarily for stock feeding, but now they are of commercial importance in no less than twelve southern states. Good seed, proper preparation of the soil, frequent cultivation of the crop, proper harvesting and curing, and grading the product according to standard grades are the main essentials to the realization of a profit from peanuts. Most failures have been due to the neglect of one or more of the above essentials. Many losses have resulted from the practice of windrowing the peanut vines for curing instead of stacking them around small poles.

Peanuts are in increasing demand for oil manufacture and for making many other peanut products. It is always safe for the southern farmer to grow peanuts, as every part of the crop can be used to advantage for feeding on the farm in case the market does not justify their sale. A closer working relation between growers and dealers is desirable, and the establishment of standard grades will do much toward stabilizing the industry.

Comment by Farmer Putnam

OUR MISSOURI FRIEND MAKES PUBLIC SOME PRIVATE CORRESPONDENCE ON SEED QUESTION.

ONCT in a while it's a good thing to show some of your private correspondence and I'm intendin' to let you folks read a letter I wrote to one of them seed store men not long ago. It all happened this way: Mr. G. W. Dickey that lives up near Willard was headin' fur Californy to spend the winter and he drops into this seed store to talk about crops, when he seen our magazine layin' on the counter and then they got to talkin' about me and Western Farm Life and each one braggin' how he enjoyed readin' Farmer Putnam. Well the seed man had to write and tell me about it and bein' a friend of mine, he put it on kind-a thick fur he knowed that's the way I like it. I'm kind-a human after all and it don't make no difference if it's true or not, we all like to have the other feller boost us ruther then knock, even if the knockin' would do us more justis and more good in the long run. I believe in honest criticism, as long as nobody tries it on me.

Now this here letter is about the seed business and I reckon while it's more or less private, most of you had ought to read it, because it is full of good advice fur farmers and seed stores. Here it is:

Dear Friend—The editor showed me your letter about Mr. Dickey and give me them ten cents in stamps which comes in handy. I said fur him to send you two copies of Nov. 1st, because you done earned 'em, not with the stamps but with the palaver. I told Josephine I was intendin' to send the stamps back, but she sez: "No you don't, Tom; it may be the only chanct you'll ever git to take something away from a seed dealer. It ain't no sin to take things from seedsmen; it's like beatin' the railroad outen a ride—considered just and right, fur if this feller never got the best of us some other seed dealer did. I reckon they're all alike."

"Josie," I sez, "you're doin' him a injustice. He's the feller that we bought our Minnesota 13 corn from and he furnishes the registration papers right with the seed, all swore to and signed and sealed. He is honest as the day is long."

"How'd he git that way, did the seed law make him so?"

You cain't argy with that woman. She thinks all seed dealers is scoundrels, which just shows how some fellers that ain't on the square hurts a hull lot of good people in the same business. Now my sentiments on the seed question is like this: the farmer in Colorado knows that we got a labelin' law and that he kin buy pure field seeds if he's amind to. The trouble is he wants something cheap—and he gits it! Over in Adams county a farmer went to the elevator last spring fur some Macaroni wheat to use in fillin' spaces in his winter wheat that blowed out. He couldn't wait to have a test made and he planted what the elevator man give him. Doc. Cook was goin' over his field one day while this feller was drillin' the Macaroni wheat and Cooke took a sample outen the drill box, about half a Mason jar full, and brung it in to the editor. The editor sends it up to the Seed Laboratory at Fort Collins and gits a report which shows 1,870 weed seeds to the pound, which shows that this farmer was plantin' about 75,000 weeds per acre.

He got some fine Macaroni wheat outen this joblot! Them Italyuns that makes Macaroni outen this batch won't need no ketchup to flavor it with. It's got wild mustard in it, besides goosefoot, Rooshan thistle, plain thistle, hedge mustard, black bindweed, gum weed and half a dozen others, besides some oats, barley, redtop and Turkey red wheat. Of course, it ain't no loss to the elevator man—the farmer stands the dockage. Yes, I nearly furgot, they was nearly 10 per cent of dirt and chaff which however don't show no germination, so it didn't hurt the quality of the crop.

If the farmers sometimes knowed the truth about what they was plantin' it would scare 'em. I reckon it's just as well that they don't. I recollekt onct when I was a travelin' I stopped off in a Kansas town and went to a dollar a day tavern to eat. Things didn't look like home cookin' and so I got to diggin' around in the stew with my fork. Purty soon I discovered that they had a red-headed cook in the kitchen. I don't like red hair—leastways not in that style—so I called the tavern keeper over and sez:

"Looky here, Captain, what I found in this here beef stew; a red hair! I don't like this."

"Oh, that's all right; glad you told me. I'll exchange that plate fur you; we got a nice brunette cook in the kitchen; I'll git you one of hern."

So I say, it don't allus pay to be too inquisitive. The farmer that gits along happiest in this world is the one that tries to git everything cheap, includin' the seed he plants. Nature made the weeds fur some puppose and they got as good a right to grow as the wheat. What's the use of us tryin' to fight weeds; they'll grow anyhow and the more we fuss and worry about 'em the bigger and thicker they grow. Of course we ought not to be docked fur weed seeds. The miller could grind 'em up and nobody'd know the difference. The weeds would give our bread a new flavor and the bakers could charge 1 cent a loaf extry fur it.

I reckon they is lots of farmers thinks it ain't no use to fight weeds and we hadn't oughter blame 'em. As long as our neighbor sows wheat with 75,000 weed seeds to the acre what's the use of us eradicatin' our weeds this year, when we'll git our share of his weed crop next season?

The trouble with us farmers is we don't think fur enough ahead. We generally wait till May to make up our minds and then we write in to you and say "Dear Sir: Send me by parcel post in a hurry three bushel of Colorado grown Minnesota 13."

Now if you're honest you'll say: "Not another ear of Colorado grown No. 13 to be had for love nor money, but if you want Northern grown I can send it to you."

The next day he phones: "For the love of Mike, rush that seed; I don't care where it was growed; just so it's No. 13."

Now some other seed dealer might git the same order and he ain't got a bushel of No. 13 left, but he don't stop to write, but he picks over a lot of yellow dent from Iowa and sends it to the farmer and it goes into the field under false pretenses. Well when frost comes in fall it ain't ripe and it never does git ripe and it makes poor feed and no grain to shuck out and somebody is loser by a coupla hundred dollars.

Now a little common honesty by the seed dealer and a little more common sense by the farmer and we would git away from such troubles. Still I think we're improvin' a little.

I kin recolleck when I was farmin' down in Missouri one year I sent a order to St. Louis fur some new kind of seed wheat they called Alaska Seven Headed Wonder. The seed catalogue said they got the original seed in one of them pyramids in Egypt, where it was buried with the body of a feller named Faro, who was king of Egypt about B. C. something or other. They charged $10 a bushel for it. Well when it come it was such scrubby lookin' stuff that I fed it to the hens and I wrote and told 'em that I wouldn't pay the bill. They sued me and I had to pay the bill and on top of it $2.50 extry fur chicken feed!

Thos Jefferson Putnam

The Last Horse-Story.

Two men thrown together at a horse show were discussing their adventures with the equine tribe.

"A horse ran away with me once, and I wasn't out for two months," remarked the man with the Trilby hat.

"That's nothing!" remarked the man with the bowler. "I ran away with a horse once, and I wasn't out for two years!"—Tit-Bits.

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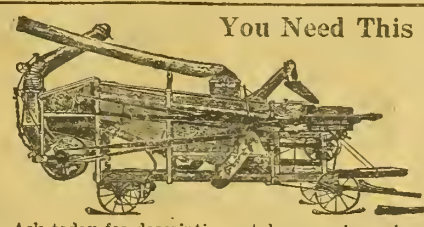

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and through the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Giant Sunflowers on Dry Land.

Can giant sunflowers be raised successfully on our dry land here? Turkey red wheat grows fairly well about 15 bushels to the acre. What tonnage of sunflowers could be expected? The rabbits here do not bother bad until about July 15. Would they bother them after that time? Any information regarding the raising of sunflowers or any books, bulletins or other references you can tell me of will be greatly appreciated. What is the feed value of sunflower silage for beef cattle, also the value of seed for sale or feed?—L. R. L., Idaho.

Tests made in feeding giant sunflowers at the Montana station show satisfactory results both in feeding beef cattle and dairy cattle. The Montana tests were mostly on irrigated land, but in 1918, 30 acres of giant sunflowers were planted in thirteen different counties under dry land conditions. In spite of a severe drouth that year there was an average yield of over 10 tons of silage per acre. The average for corn under such conditions would probably not be more than four or five tons. Tests have been made in Colorado on dry lands where the average rainfall is in the neighborhood of 16 to 20 inches per annum. The yields were satisfactory. Under such conditions an average of about 8 tons of giant sunflowers for silage per acre may be expected. We do not think rabbits would cause any considerable damage if you plant June 1 or later. Sunflowers grow rapidly and if moisture conditions are only reasonably good the plants should have made enough growth before the middle of July to prevent rabbit damage. Your question concerning value of sunflower silage for beef feeding is answered in report of Oklahoma experiment sent you. Concerning the value of the seed: Sunflower seed is a standard crop with the seed houses and there is a big demand since sunflowers are being grown for silage purposes. The seed is used also for poultry feed, although the demand in that respect is limited.

Keeping Pork in Brine.

Would you please send a recipe for keeping pork? I want one that the meat can be left in indefinitely and a few pieces taken out now and then to smoke. —I. T., Prowers County, Colo.

Rub each piece of meat with fine common salt and pack closely in a barrel. Let stand over night. The next day weigh out 10 pounds of salt and 2 ounces of saltpeter to each 100 pounds of meat and dissolve this in 4 gallons of boiling water. Pour this brine over the meat when cooled, cover and weight down to keep it under the brine. Meat will pack best if cut into pieces about 6 inches square. The pork should be kept in the brine until used This does not provide for smoking the meat, but if you want to keep it in the brine this is the proper recipe to use.

Bank Deposits Not Guaranteed.

Are the banks of Colorado guaranteed as they are in Kansas and Oklahoma? Is our local bank a Federal Reserve bank?—C. W., Mineral County, Colo.

Colorado does not have a guarantee of deposits law as is the case in Kansas and Oklahoma. Our state banks are under the supervision of the state bank commissioner, whose inspectors make periodical examinations.

No, your local bank is not a Federal Reserve bank, but probably a depository for Federal funds designated by the Federal Reserve Bank. There are twelve Federal Reserve banks located in various districts and these banks designate certain of the strong local banks as depositories for federal funds.

Loans From School Fund.

Answer to W. R., Colorado.

Yes, the Federal Farm Loan system is temporarily tied up in the U. S. Supreme Court in a case involving validity of tax free farm loan bonds. Until this case is settled no loans can be made. The Colorado State Land Board will send you information regarding loans made on land from the state school fund.

Write to the State Board of Stock Inspection, Capitol Building, Denver, for instructions on how to advertise for the owner of the animal left in your care.

Lease and Bond.

Can a man lease and bond a mining claim on a patented homestead that is mortgaged, without the consent of the parties holding the mortgage?—W. I. S., New Mexico.

You may give bond and lease subject to the mortgage and you do not need the consent of the mortgagee.—Hamlet J. Barry, 724 Equitable Bldg., Denver.

Must Be 21 Years Old.

How old must a girl be before she can take up a homestead? Can she take up 640 acres as grazing land?—G. G. L., Wyoming.

You must be 21 years of age before you can take up a homestead. Yes, you may file on a 640-acre grazing homestead.

Sheep Breeding Question.

I am intending to keep 100 breeding ewes, and as they are just grades with a goodly number of black-faces, would like to know what would be the most profitable buck to put with them? Kindly put me in touch with breeders—L. C. S., El Paso County, Colo.

Either the Corriedale or Rambouillet would be good. A Hampshire would be best for use on black-faces. Where a small number of sheep are kept under farm conditions the Hampshires will give you good heavy early maturing lambs. If you intend running your stuff on the range the Rambouillet or Corriedale would be better. The State Reformatory Farm, Buena Vista, Colo., have some good Rambouillets. Ed King, Monte Vista, Colo., has Corriedales, and Judge A. W. Rucker of Mt Morrison, Colo., has Hampshires.

Question as to Estate.

My father and mother died without leaving a will; they own some homestead land already patented. My brother died, leaving a wife without children. Can my sister-in-law claim any of my father's land as an heir? She did not have any children, and is married again. I am to buy the land and would like to obtain your advice at once, which will be very much appreciated.—Subscriber, Colo.

Assuming that one parent, namely, your father, died leaving his widow and children, the widow would get one-half and the children one-half. Then assuming that your brother outlived your mother, and your mother did not remarry, your brother would have the portion he obtained from his father, and in addition his portion as one of the children of your mother. Then if your brother died after your father and after your mother, and left him surviving a wife and no children, his widow would inherit the portion that your brother held. Your sister-in-law therefor owns the portion left her as the heir of your brother. That she married again makes no difference. You have not given me the dates of the deaths, nor the ownership of the property. It may be that my assumptions meet your situation and it may be that they do not.—Hamlet J. Barry, 724 Equitable Bldg., Denver, Colo.

Poultry Have Free Range.

Is there a law compelling the building of fences so that the chickens cannot get through?—N. A., Douglass county, Colo.

There is no law in Colorado which provides for making fences chicken tight. The law only specifies fencing that will prevent damage by cattle. Some of the towns and cities have ordinances against poultry running at large, but these, of course, do not apply in the country. The only thing that can be done is for neighbors to agree among themselves to the best means of preventing damage by poultry flocks.

Question of Heirship.

Would like to know what the law is in Colorado in regard to a single sister having land. In case of her death, if she has made no will, is her brother the legal heir?—Subscriber, Colorado.

First her estate must be probated, and the descent is first to father and mother, share and share alike; if no father to mother, if no mother to father, and if no father or mother, then to brothers and sisters, and the descendants of brothers and sisters, the descendants taking the share of their immediate ancestor.—Hamlet J. Barry, 724 Equitable Bldg., Denver, Colo.

Land is 400 Feet Short.

I bought a half section from B. B. gave a warranty deed reading "consisting of 320 acres, the half section is 400 ft., by 1 mile short." A. is paying interest on value of 320 acres. Does B. have to make the shortage good? Note runs three years yet. Can B. foreclose on A. if A. refuses to pay all interest until land is purchased?—Subscriber Colorado.

Without seeing the entire instrument I do not know what A. bought. If the land is described in the deed it may be that the half section was sold 400 ft. by 1 mile short. If that is the case that is what A bought. If the agree-

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ment was that B. was to furnish a complete half section that presents another question.—Hamlet J. Barry, 724 Equitable Bldg., Denver, Colo.

Dry Plowing in the Fall.

I want to ask you about deep plowing. I was plowing some spring wheat stubble some time ago about 6 inches deep with the Oliver two-way plaw. It seemed that it did not work good because the weeds were partly plowed under and too hard to plow so there are lots of clods. I like the clods because it will keep from blowing off. The sandstorms were bad last spring. I want to plow some land for oats and alfalfa next spring. I wish I had a Spalding tilling machine, but it costs too much. The prices on the crops are down. Do you think I had better keep on plowing?—R. E. F., Weld County, Colo.

From reading your description we should judge that your stubble ground was probably too dry for a good job of plowing. It would be advisable for you to continue plowing for the crops you expect to put out next spring, especially the alfalfa. No type of plow, however, will do a first-class job if the ground is very dry. Mr. Parsons advises, however, that even dried plowed land has some advantage. We want to call your attention to an article in an issue of Western Farm Life in which he discusses this subject.

The disadvantage of plowing very dry soil is that the trash will not be turned completely under and unless the soil is well weathered during the winter you will have trouble with weeds, because they were not put down to the bottom of the furrow. A good job of plowing will do that if the ground is in shape to plow and you use a plow of the proper capacity.

The difference in soils also must be considered. It is advisable to fall plow the heavier clay soils or medium clay loam soils, but not the light sandy soils. The latter warm more quickly in the spring and respond to culture so easily and quickly that they can be plowed late, thus escaping damage by winds in winter.

Regarding the Spalding Deep Tilling Machine: We agree with you that the cost is very high and that it hardly pays an individual farmer to buy this machine for regular use. It requires a lot of horsepower and it is really a subsoiling machine devised for special uses for stirring the soil to unusual depths. You can probably get your results by the proper selection of an ordinary plow of the right capacity for deep work.

Colorado Reclamation Projects.

Where are government reclamation projects located in Colorado?—E. M., Prowers County, Colo.

They are the Uncompahgre Project, Montrose, Colo., J. Preston, Project Manager. Grand Valley Project, Grand Junction, Colo., S. O. Harper, Project Manager.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Testing for Tuberculosis.

We live many miles from a veterinary surgeon and I would like to know if there is any way to tell, at home, if a cow has tuberculosis. I have a fine milk cow that has had a bad cough for a long time. Seems perfectly well otherwise and gives a good supply of milk. I feel a little uneasy about letting the children drink the milk.—Subscriber, Colorado.

A cough is not a special indication of tuberculosis with cattle. Tuberculosis does not appear primarily in the lungs and throat of cattle as it so frequently does in people. Cattle are disposed to cough after drinking cold water and from digestive disturbances. The only reliable way to detect tuberculosis is by means of one of the tuberculin tests. The three tests that are considered most reliable are: The subcutaneous (thermal); the ophthalmic (eye), and intradermal. In the thermal test, tuberculin is injected hypodermically, and if the cow is diseased, there will be a rise of temperature of two degrees or more, beginning usually about the tenth hour after injection. In the eye test, tuberculin is placed in the eye, and a reaction will be indicated in about two days, by swelling of the lids, and pus accumulated in the canthus of the eye. In the intradermal test, concentrated tuberculin is injected with a fine needle between the layers of the skin and the reaction will be a characteristic nodule. None of these tests are injurious to a healthy animal. Most anyone can, by following directions, apply these tests, but to correctly interpret the tests requires experience and knowledge as to what constitutes a reaction. When farmers have tried testing their own cattle they have invariably been dissatisfied with the results. Determining the presence of tuberculosis by blood tests, as well as by laboratory examination of the milk or nasal exudate, is very unsatisfactory in case of cattle. Since the cow appears perfectly healthy otherwise the chances are that she is not affected with tuberculosis.—G. H. G.

Utilizing the Big Fruit Crop of the Northwest.

(Continued from Page 6.)

that received anywhere else known to the writer. Paul's jams or fruit butters are sold in every state in the Union save two. In six months of 1919, 118,000 cases of jam were sold. This plant is a monument of success to the manager—W. H. Paulhamus.

The second plant of primary importance to the fruit industry is the preserving and canning plant of Libby, McNeil & Libby of North Yakima. Situated as it is, in the largest fruit district of the whole Northwest, this plant has turned into economic value what would otherwise have gone to waste. Burlington, Wash., has a canning plant that cans certain tree and bush fruits, turning out 400 cases per day during the canning season. Bellingham, Seattle, Vancouver, and other fruit centers in Washington have valuable by-products plants of commercial and economic importance. The state of Oregon alone has more than fifty by-product plants, all helping to conserve in some manner for table use some fruit or fruit juices. Who has not enjoyed the refreshing, exhilarating Phez, Applju and other fruit drinks of the Northwest? It is this conservation of fruit foods, in canned goods, butters, jellies and jams, evaporated or dehydrated products, juices, flavors, extracts and gums that make the great Northwest fruit districts an object lesson, to us all, of efficiency, food conservation and marketing success.

The meat packing plant, we are told, loses nothing in the converting of the hog into pork. Every part of his anatomy from his snout to his tail is put to some economic use—even his dying squeal is now caught on the phonograph record and given anew in rhythmic cadence.

In the Northwest, the pits of the stone fruits are made to yield up their potash, the pumice is forced to give a stock food or a fertilizer, and typical photos of the orchards are made into films by enterprising movie artists and, in the far east, are ground out at so much "per" to the delight and education of unnumbered thousands.

Storing Moisture in the Soil Is Not a Mere Theory.

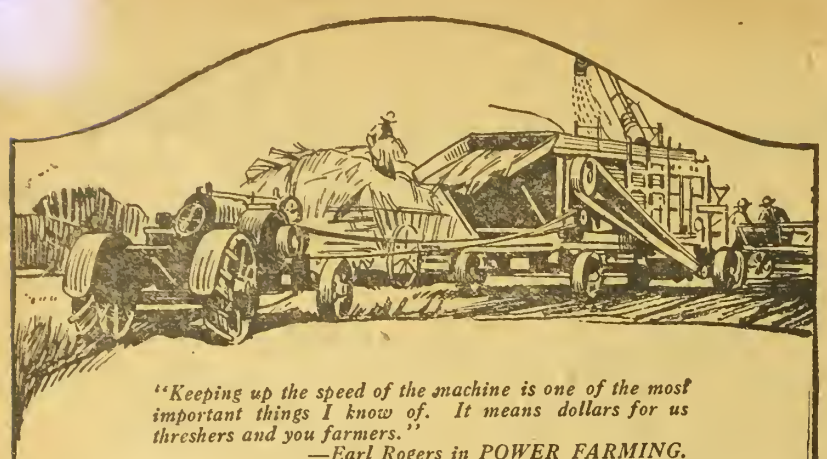
(Continued from Page 4).

who do the work right, without any rain or irrigation whatever. If less than eight inches is conserved the results are doubtful.

Now for our last question: If the farmer can secure results by these methods, why do they not all adopt them? We notice that when a new settler makes a start in a deep-plowing, fallowing community, he generally falls in line and prospers with the best of them. When he gets in with a bunch of poor farmers they always seem to be able to convince him that nothing else is worth while. The strongest factors in human life are habit and example. The boys' clubs raise better crops than some farmers because they have never become hypnotized by habit. A farmer of Alabama sent his son to the Agricultural College; when he came back to work on the farm he raised 90 bushels of corn per acre to his father's 48. When they attended the institute meetings the old man would point with pride at his son and say "See what me and him did!" This would always provoke some mirth; but nevertheless the old man was right, for if he had never sent his son to learn better methods that 90 bushel crop would never have been raised.

Western Farm Life:

I enclose P. O. order for $1.50 on my subscription for Western Farm Life and the other magazine which are included in the offer. Also Farmers' Rapid Reckoner as the free premium. Kindly see to these magazines, that I receive them all, for we feel like could not get along without reading Western Farm Life and especially Farmer Putnam, and especially since his visit to our own dear city, Salt Lake.—A. H. Smith, Salt Lake City, Utah.



"Keeping up the speed of the machine is one of the most important things I know of. It means dollars for us threshers and you farmers."
—Earl Rogers in POWER FARMING.

Whether the correct cylinder speed is 800 or 1100 revolutions per minute depends on the condition of the grain. Whichever it is, you need lots of power—steady, dependable power. It can only be had from a tractor engine that is in A-1 condition, and perfectly lubricated.

Stanolind Tractor Oil has been developed and perfected for just one purpose—to afford correct lubrication for gasoline and kerosene burning tractors. Specially bodied to stand the high operating heat, it does not thin down when full load heats the engine. In cold weather it flows into the closest-fitting bearings.

If your dealer can't supply you, write us.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)

Butte, Cheyenne, Albuquerque — DENVER — Pueblo, Great Falls, Salt Lake City

STANOLIND
TRACTOR OIL

How Long Distance Service Is Constantly Guarded

As carefully as the sentinel guards the camp of his comrades in time of war, we guard your telephone talks over the long-distance telephone lines.

Your telephone is sheltered in home or office, but the wires connecting it with telephones in other cities and towns cross bleak mountain ranges and storm-swept prairies, subject constantly to the ravages of the elements.

Day and night the wire chiefs watch the circuits, testing them, keeping them clear and preparing in cases of emergency to rush repairmen to the scene of trouble.

Every morning at 6 o'clock, before the day's business begins, tests are made with delicate apparatus, and with it the place can be determined within at least 100 feet where a loose wire, a broken cross-arm or even a broken tree branch hanging in the wires, may be causing trouble.

To insure the public against sudden breaking of poles, carrying down with them perhaps a score of wires, at regular intervals pole-to-pole inspections are made. Every pole is tested, decayed wood scraped away and a record of condition of each pole placed on file so that replacements may be made as needed.

Carefully, constantly and unceasingly the long-distance lines are guarded to provide immediate service.

The Mountain States Telephone and Telegraph Company

ARE YOU IN THE MARKET FOR BREEDING STOCK OF ANY KIND—HOGS, CATTLE, SHEEP OR HORSES?

If so, write us your wants—we have filed for your information a complete breeders' directory of Colorado—and information regarding the principal herds in neighboring states.

Our livestock field man visits dozens of herds each month and may be able to help you find just the animal or animals you are looking for. Write

BREEDERS DEPARTMENT, WESTERN FARM LIFE, DENVER, COLORADO

The Heart of Virginia Keep

· BY EDWIN BAIRD ~ COPYRIGHT ·

The Previous Chapters.

Prologue: Double murder in barroom, by chance visitor, in self-defense. He disappears. * * * Twenty-five years elapse. The story opens with a scene in the home of Banker Alfred Keep, whose daughter, Virginia, is being courted by Grant Mattock, the young state's attorney. A ragged boy brings a mysterious note for the banker. Banker Keep disappears between midnight and morning. Sleuths follow him to Canada, where he is arrested on the charge of murder, committed twenty-five years before. He is brought back for trial. Mattock chooses the path of duty and becomes a vigorous prosecutor. Virginia stands by her father. Her step-mother has not yet been informed of the details.

Enter, A. Dempster Trude, wealthy New York youth, in search of excitement. Through the death of a relative he becomes owner of the St. Louis Publicist and, hiding his identity from all but the managing editor, he secures a position as a reporter. On his first assignment—the Keep story—he encounters adventure and succumbs to the charms of Virginia Keep. He orders the managing editor to "Kill the Keep story; plenty of news without it," although rival newspapers publish it under glaring headlines.

Senior Lewis, the family lawyer, calls on Virginia. Virginia receives word that her father will arrive the next morning. She then visits her friend, Josephine Middleton; several young people call but Virginia declines invitation to dinner. She goes directly to Mrs. Schmitt star witness of the double murder, and pleads with her to drop the charge, offering her money, all to no avail. Next morning Keep is brought back from Canada and is met by Mr. Lewis and Virginia. Virginia admits that she has not yet told her stepmother. Newspaper men are held off by Trude, who sees that she is not bothered by reporters. He later returns to find her unable to start her car. He calls a taxi and sends Virginia home. Mrs. Keep learns from Phillip Sturgis, Alfred Keep's banking partner, that something is wrong, and Virginia upon being questioned, tells her the truth. Mrs. Keep swoons; later she tries to pursuade Virginia to leave town with her to escape the disgrace. Virginia refuses to go. * * * Mr. Sturgis calls on Alfred Keep in prison and is very much relieved when Keep hands him an envelope, resigning as president of the bank. Sturgis hurries away, like the others shunning the presence of the accused.

The door opening again aroused him from his apathy. He looked up to see his daughter.

Their words to each other as he placed a chair for her were such as they might have exchanged at the breakfast table. Neither alluded to what both were thinking of, and their patent anxicty to steer the bark of conversation safely past the grim shoals of his making would have been ludicrous had it not been fraught with pathos. She told him of her broken engagement, of affairs at home, of her stepmother—mentioning nothing of the scene that morning—of her horse, her music, her dogs, her French lessons. She never mentioned her visits to Mrs. Schmitt, though she worried not a little over the possible outcome to them.

He met her in kind; but always beneath their evenly flowing talk gurgled a troublous undercurrent.

It was not until she had risen to go—and he had risen, too—that the barriers were lowered between them.

"Papa, was it that note which caused you to—go away?"

He did not answer at once. She glanced at him questioningly. The grey light filtering between the bars behind him left his face in shadow so she could read nothing. He had purposely stood thus to all comers that day. It was the weak subterfuge of a strong man.

"Yes," he replied in a low voice.

She asked gently:

"Is it for your sake or mine that you are shielding its sender?"

"It is best for us both that you should not know."

"Papa, I want to help you. Can't you see I do?"

"Virginia, my girl——"

"Why do you make it so hard for me? This person—whoever he is—is responsible for your being here, is responsible for your submitting so tamely to public dishonor, is responsible for everything. And you won't even tell me his name!"

"Virginia! Virginia!"

The man's clammy hands opened and closed; his brow had grown moist.

"You must let me fight my own battle. You must go away—you and your mother."

"My place is by you," she declared, hands clenched until the nails bruised her palms. "Nobody can make me believe otherwise. You're all I have left now—the only friend I've got. Mother is angry with me, and a dozen people I know cut me in the street this morning——"

She checked her racing tongue, realizing it was saying things she never intended to utter.

Happily at this critical juncture the arrival of Mr. Lewis stilled the emotional tempest. She soon departed, having asked if his son Harvey were at the office and received an affirmative answer.

Returning to the law offices of Lewis & Lewis, she was shown into the presence of the junior member of the firm—a suave, profound young man with a long nose and neck, thick eye-glasses and subdued dress, who received her with the rubber-heeled deference commonly associated with undertakers. She declined a chair, saying she could remain but a minute and preferred to stand.

"Can you tell me, Mr. Lewis, if any person has ever been convicted of manslaughter on the evidence of his fingerprints?"

Not at all upset by the abruptness of the question, the serious young Blackstone got a law-tome from the bookshelves, and, opening it on his desk, began quoting from criminal court annals with solemn precision. He was very well pleased with himself. The nearness of pretty women always put him in a pleasurable glow, and the youthful loveliness of Virginia affected him somewhat as the early summer sun affects a morning-glory. He wished, however, she would sit down and not seem so impatient to leave. He droned on and on from the records, until finally she broke in:

"Thank you, Mr. Lewis; that will be quite sufficient. You've shown it has been done."

She opened the door to go. He sprang to assist her—but too late, and had to content himself with treading softly and ingratiatingly beside her through the outer office.

"Now mayn't I do something else for you, Miss Keep? Only command. I shall be most happy to obey."

She shook her head, scarcely able to repress a smile at the unctuous courtliness which so oddly belied his grave expression; but when they reached the outside door she paused as he held it open.

"Now I think of it, there is something else—though I hadn't intended telling you."

Perceiving her hesitation, he said reassuringly:

"Anything you entrust to my discretion, Miss Keep, will be held inviolable."

She smiled.

"It's not a secret exactly; merely this: One morning last week two strange men forced their way into our home, and when I came upon them unexpectedly I thought I detected one of them in the act of hiding something in his pocket. He was standing at the time near a desk used by my father."

"Ah!" observed the junior Lewis in a learned manner, and scratched his long nose very gently with a lean forefinger.

"This morning I saw that man again. He was one of the two who returned with papa."

"Um!" remarked young Lewis, puffing out his lean cheeks after the manner of his sire and holding his long head wisely on one side. If he was puzzled he did not show it.

"I've been wondering," pursued Virginia, "if that man didn't steal a letter or something that papa had handled so that the fingerprints——"

"By Jupiter!" exploded Lewis, awakening with a crash. "Then that explains it! Father and I were discussing it today, and—I—I beg your pardon, Miss Keep. I interrupted you."

But he had gone too far.

"Tell me, Mr. Lewis, please."

"Tell you what, Miss Keep?"

"Please, Mr. Lewis!"

He could not deny her bluntly. He never could resist fascinating girls.

"It was passed upon by experts," he said; "but experts, I assure you, are very often mistaken."

"Yes," she said quietly, turning away.

He accompanied her to the elevator, outwardly bland, inwardly perplexed to know how she had wormed the truth from him.

"You really shouldn't take this greatly to heart, Miss Keep. After all, it is flimsy evidence. Very flimsy, even if true."

She smiled wanly as she pressed the elevator signal.

"You cited quite a number of cases from your book," she reminded him.

"True. But after twenty-five years there should be a hypothetical element."

The elevator stopped at the floor. She got on.

"Good day, Mr. Lewis."

"Good day, Miss Keep. And—good luck!"

Not until she reached the street did she recognize that he had been endeavoring to hearten her.

CHAPTER XII.

To the Rescue!

Virginia had gone only a short way along Olive street when the revolving doors of an office building ejected Arnold Trude into her path.

His blue eyes sparkled as he fell in beside her.

"This is luck!" he avowed, catching her step. "Got something I want to show you," zestfully unpocketing a copy of that morning's Publicist.

"I have something for you, too," she replied, opening her purse. "I didn't now you had paid the cabman until we got home."

"Honest cabby!"

She handed him a two-dollar bill.

"I'm indebted to you for your kindness last night. And my car is safely home—the garage returning it this morning."

He pocketed the two dollars carelessly. (He had given the cabman five.)

"Now see what I've got!" He rustled through his paper, found what he searched for, folded it and held it toward her.

Disregarding the paper, she met his eyes steadily.

"Does it concern my father, Mr. Trude?"

Trude's guardian angel was surely asleep that day. At this crucial instant a newsboy darted past, yelling shrilly: "Extry! Banker Keep resigns——"

Her mouth quivered.

"I—I don't believe I care to see it."

She started on hurriedly.

Keeping pace with her, he held the first page of the newspaper open before her eyes.

"Miss Keep, I challenge you to find a single allusion to your father there, or in any other part of this paper. The Publicist is not printing a word about him. Because you stopped your subscription I had a boy deliver a copy at your house this morning. Too bad you didn't read it."

Again she realized she had misjudged this man; and oddly she felt resentful toward him rather than apologetic.

"What is it you wish to show me?" she asked, a trifle distantly.

"Suppose we step in somewhere out of the crowd?" he suggested. "There's a drug store at the next corner."

Her dark eyes darted him a sidelong glance of speculation.

"It's so crowded here!" he said.

They had reached the drug store. She stopped.

"Then we'd better go inside," she decided, as if to imply it was she who had first offered the suggestion.

He followed her in, and, opening his newspaper on the perfumery showcase, pointed out an item in the classified advertising section. It was a response to her "personal ad," stating that any afternoon between three and four o'clock the information she desired might be obtained from "Mr. McClanahan," at the designated address, which was in an unsavory part of North St. Louis.

He watched her while she read it, and so faithfully that when her eye reached the specified hour he looked at his dollar watch.

"It's only a quarter to three," he smiled, "so we've plenty of time.'

She straightened up. Perhaps it might even be said that she stiffened. The friendly familiarity of his voice, as well as his words, were somehow an unpleasant reminder of the unconventionality of their acquaintanceship.

"Thank you, Mr. Trude, but I've decided not to search for the little boy."

"Still in a tantrum!" thought he, and crumpled the paper into a wad and chucked it at the negro porter.

"I'm sorry," he said.

But she was gone. He overtook her at the door.

"Won't you have a little something?" he invited cordially, motioning toward the soda fountain. "Some chocolate or——"

"No, thank you."

He walked with her to the street.

"Miss Keep," he deplored with a whimsical smile, "you and I don't seem to get along together at all."

"Oh! My car!"

He stopped the car, helped her on. And this time she left him without even a "Thank you."

Virginia started for Mrs. Schmitt's—for she was worried not a little about last night's visit — but interwoven through her psychic fabric was the insistent thread of "Who sent that note?" And as she stood on Broadway, awaiting a southbound car, her keenness to know surmounted all else.

She recalled the address in the advertisement—a mean one it was, in the north part of town. If it were only on the south side now——

But it wasn't, so there was an end to that. And anyhow her father's wishes must be obeyed, no matter how unreasonable they seemed to her.

Two street cars clanged into the block—one going south, the other north. The one she took was the northbound. And lo! by some rapid and remarkable process of reasoning she had quite justified the action; nay, had even convinced herself it was the only thing to do!

The address led her to a drab-colored frame house, with the architectural symmetry of a cigar box and the frank hospitality of a police station. She ascended the decaying steps, which ended high above the street, in some trepidation to knock timidly at a door shedding its paint as a reptile its skin. The place suggested bleakness, poverty, and attendant immorality. Despite the spring sunshine, she shivered a bit when the door was opened by a sinister looking woman as sallow and as unhealthy as some dank, poisonous weed grown in a cellar. Deriding her fears as childish imaginings, she stated her errand.

"The party you mention is a lodger here. Wait a minute and I'll see if he's in."

The door was unceremoniously closed. Resolving every second to flee the next, Virginia waited until it was opened again by a pimply-skinned, hatchet-faced, bony youth of about her own age.

"Howdy. Wanta see me?"

"Are you Mr. McClanahan?"

"Dat's me tag. And you're old man Keep's daughter. Don't tell me. I know. Guessed it de minute I piped dem doll props."

"I've called about the advertisement," she said.

"I know. Come on in and we'll talk t'ings over."

Virginia hesitated. She did not like the sensual expression in the youth's eyes as they rested upon her. Then:

"Fiddlesticks!" she thought. "He won't eat me." She stepped inside.

From the hall he led her into a moldy room, bare of carpet, wallpaper, and, here and there, plaster, where two unshaven and flannel-shirted men sat playing with a pack of greasy cards. They had the grace to rise. One of them placed a chair for her, but she remained standing.

"Dese guys," said Mr. McClanahan, motioning with two fingers and a cigarette, "is me side-kicks. We won't need no interductions, I don't t'ink."

Virginia began to wish herself outside in the sunshine again.

"Have you the little boy here?" she asked.

"Well, no," he hesitated. "Not exactly."

He looked over his shoulders and exchanged glances with his companions, one of whom edged nearer the hall door.

"I am rather pressed for time today."

"Sure t'ing," agreed Mr. McClanahan. "Er—lemme see; didn't you say some'in' about a hunerd beans?" He scratched one ear reminiscently.

"Beans?" she puzzled.

"Cush, y' know, kale, dough, chink—money!"

She nodded, a little amazed by his vocabulary—a little annoyed, too.

"I am willing to give you a hundred dollars."

"Well, me and me pals here been talkin' it over, and we can't dope out how we kin split a hunerd even wit' de t'ree of us, so if you could stretch it to a hunerd and fifty, dat 'd be fifty apiece, and be mighty white in you." Mr. McClanahan scratched the other ear.

"Very well."

She opened her purse and took out a roll of banknotes. "I haven't that much with me, but——"

Suddenly she paused, put the money back, and shut the purse with a snap."

"First," she said firmly, "you will have to tell me where the boy is."

"Sure t'ing!" grinned McClanahan, and gave her an address.

"We will finish our transaction there," she decided, turning toward the hall door.

And then a number of things happened very quickly. First of all, the gentleman who had taken a position in the doorway snatched her purse. Being seized from behind in a muscular grip, he threw it to McClanahan, who tossed it to the third, who in his turn started from the room by another door.

While this was occurring Virginia discovered that the man getting the best of a furious fistfight in the hall was Trude. Smashing his opponent on the chin, Trude rushed him, tripped him neatly, picked him up, and slung him down against the stairway.

"Run, Virginia!"

"Why did you follow me?" she cried, her cheeks scarlet.

"Run!" he commanded, urging her toward the front door.

"I told you I wasn't coming——"

"Never mind now. Cab at the corner. Wait there."

He all but pushed her out upon the steps, closed the door upon her, and raced back to the room. There was nobody in sight save the unhappy purse-snatcher, who sat on the stairs nursing a purpling eye. In an adjoining room, however, he came upon McClanahan. As he entered he saw a door at one side of the room very quietly and swiftly close. McClanahan—unwise youth—attempted to guard that door.

"Git outn dis room! What call you got ter——"

The rash McClanahan never finished his sentence. At what should have been the logical moment for its termination he was sitting on the floor, legs outstretched before him, back against the wall, hands flat on either side; and on his countenance was an expression at once pained and surprised.

In the next room, of course, was the one with the booty. He was forced to disgorge, but not roughly handled, because his yellow face and emaciated body proclaimed his physical poverty.

Meantime Virginia waited in the cab, thoughts awhirl. Everything had happened so bewilderingly that she could remember nothing coherently. She was trying to piece together the occurrences point by point; trying to account for Trude's presence there; trying to decide whether she was angry or pleased with him, when she saw him swing down from the ladder-like steps and come hurrying toward her, waving aloft her purse.

And at that instant something flashed forth very brilliantly in her mind—something which gave her a warm, vague, puzzled, thrilling, frightened sense of happiness.

He had called her Virginia.

CHAPTER XIII.

The Foot Put Down.

"One learns something every day," mused Virginia. "Now, I never imagined young newspaper reporters were accustomed to gather news in cabs."

They were blithely bowling along Lindell boulevard—having visited Mrs. Schmitt's only to learn from the flaxen-haired boy that "Mamma's by Mr. Mattock"—and Virginia's remark was prompted by Trude's suggestion that they should spin through the park while the afternoon was fresh.

He glanced at her quickly, fearful for a second. But her innocent countenance assured him that her observation was double-pointed purely by chance.

"They don't," he smiled. "I wasn't gathering news."

"Sophistry. The principle remains the same. Candidly, Mr. Trude, I don't believe you can afford this cab, and I insist upon paying half the bill. "Or even all of it," she offered, "since by your own admission you engaged it for me."

He avowed he could easily stand the expense and wanted to do so; and, having finally gained her reluctant consent to a drive in Forest Park, he turned the talk into more comfortable grooves commenting afresh on the day's vernal quickening, which was a pleasurable topic, for the air was intoxicating with the wine of spring. Ordinarily two persons cannot chat long about any sort of weather without boring one another; but to them the dullest theme was a thing of joy.

Like all persons of opposite sex who have met unconventionally and grown interested in each other, there was an impersonal constraint to what they said, due to a conscious shrinking from the subjective; yet it was a thin barrier often lowered.

"You haven't told me," said she with the tentative reserve one adopts toward strangers, "why your paper has omitted mentioning—what has happened."

"Suppose we ascribe it to Moffett's impressionable nature."

"Moffett?"

"Managing editor. Of course, I'm not supposed to know what happens in his sanctum, being only a cub reporter, but I'm not blind, and occasionally I hear a thing or two. I think somebody has been talking to him."

"And this person—do you know who he is?"

"I—— He wants his identity kept dark."

"I am sure he has a very noble and generous nature," she said.

A warm glow settled around Trude's heart.

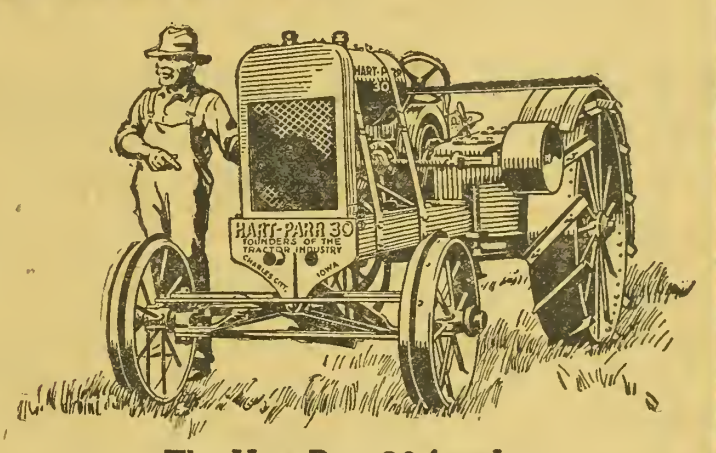
"It's good of you to say that," he breathed.

But she scarcely heard. She was gazing straight ahead of her, seeing nothing of the budding trees and leafing foliage flying past on either side; and in her dark eyes was the same helpless expression he had noticed the first time he saw her. He divined sympathetically

(Turn to Page 16.)

Thorobreds

The $50,000 Hog from Mississippi



The Hart-Parr 30 from Iowa

"SCISSORS" the Grand Champion Duroc herd boar, didn't just happen to be a good hog. He is owned by Pinecrest Farm, Charleston, Mississippi, and was purchased from Mr. Ira Jackson of Ohio, who states that "Scissors" is the cumulative results of twenty-five years hog breeding experience. It takes years of study and careful mating to produce a grand champion hog.

The same principle holds good in building a tractor. Hart-Parr Company have been building tractors longer than anybody else, hence our tractor should be nearer perfection. Our Hart-Parr 30 is the logical result of twenty years experience in one line—it is a thorobred.

SPECIALIZING

Some tractor manufacturers refer to previous engineering experience in other lines as an indication of their skill in tractor building. It proves nothing. A good ration for hogs will not make a cow give more milk, and engineering principles that worked out well in an automobile or some other machine, will not necessarily work out in tractor building.

The Great Gran'daddy of All Tractors

Old Hart-Parr No. 1, built in 1901 worked successfully for ten years on a farm near Clear Lake, Iowa, and its last owner did not dismantle it until 1917. That's surely a wonderful record. Other Hart-Parrs have done as well and you may expect big things of the Hart-Parr 30 of today.

We produced the first successful oil tractor and have been building tractors continuously ever since. We are specialists. We have learned one thing and learned it well.

Our catalogue will be a source of valuable information for the tractor buyer. Copy mailed on request.

HART-PARR COMPANY
Founders of the Tractor Industry
452 Lawler St., Charles City, Iowa

Long-Life Features of the Hart-Parr 30

One piece cast steel frame, making an engine bed solid as concrete—no bend, no twist.

A two-cylinder twin motor—fewer parts to wear out.

A slow-speed motor—750 revolutions per minute.

Force feed fresh oil lubrication, that keeps fresh oil on bearings at all times.

All working parts easily accessible, making it easy to keep the tractor in adjustment and repair. The Hart-Parr 30 is obviously simple.

The Hart-Parr Aftersale Service that teaches the farmer to take good care of the tractor.

Sturdy construction that dates back to the old Hart-Parr 60's with a record for long life.

Many of the old Hart-Parrs that plowed the virgin prairies of the Northwest are still in use today. The great grand-daddy of all Tractors was old Hart-Parr No. 1, built in 1901.

A POWERFUL STURDY THREE-PLOW KEROSENE TRACTOR
HART-PARR 30
BUILT BY THE FOUNDERS OF TRACTOR INDUSTRY

Good Hogs Made Better

All hogs that grow fast and produce pork at a profit are good hogs. And the difference between good hogs and poor hogs—*between profit and loss*—is largely the difference in their health and vigor. You can hurry your hogs to market weight in shorter time—cash-in on them quicker—make good hogs better—make poor hogs profitable, by adding to their ration a small amount of

Pratts Hog Tonic

Not a food—does not actually grow bone and flesh—but a tonic and regulator, that tones up the system and puts hogs in tip-top condition. Helps keep disease away, makes hogs healthy and hearty. Then they stand up under the strain of heavy feeding and turn *all* their feed into pork. If you've never used Pratts Hog Tonic you don't realize how fast a hog can grow if given a fair chance.

Here's what we know about Pratts Hog Tonic—and our money-back guarantee backs this statement: It makes hogs healthy—it keeps hogs healthy—its use brings more pounds of pork from each bushel of feed—it brings hogs to full market weight 30 days quicker—it improves breeding stock so big litters of strong pigs are the rule.

"Your Money Back if YOU Are Not Satisfied"

Make the test *at our risk*. Every day you delay means a loss to you—so start today.

There's a Pratt Dealer near you

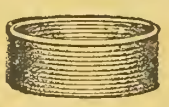
PRATT FOOD CO. Philadelphia Chicago Toronto

Makers of Pratts Poultry Regulator, Animal Regulator, Cow Tonic, Dip and Disinfectant, Stock and Poultry Remedies H-87

Pratts

COLUMBIAN SANITARY FARM PRODUCTS

SMOKE HOUSE



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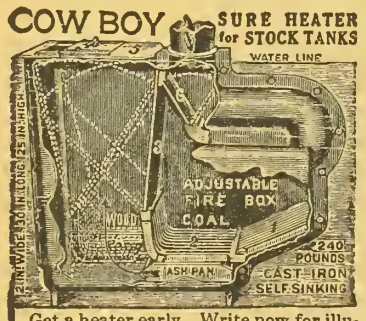

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DON'T WASTE FEED

SAVE IT this winter by heating the water for your stock with Coal, Wood or Cobs in a

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Quickest to heat; strongest draft; adjustable grates; ashes removed without disturbing fire; keeps fire 24 hrs., **Absolutely Safe;** pays for itself in 2 months with 4 cows; **Self-Sinking;** can be used in Wood, Steel or Concrete Tanks of any size. Most reliable, practical, efficient and durable Tank Heater manufactured. Thousands used everywhere.

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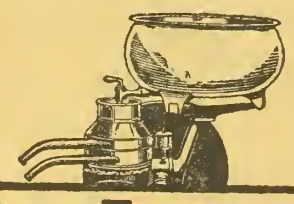

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Add a half-teaspoonful to each gallon of winter cream and out of your churn comes butter of golden June shade to bring you top prices.

All stores sell 35-cent bottles of Dandelion Butter Color, each sufficient to keep that rich, "Golden Shade" in your butter all the year round. Standard Butter Color for fifty years. Purely vegetable. Meets all food laws, State and National. Used by all large creameries. Will not color the buttermilk. Tasteless. Wells & Richardson Co., Burlington, Vt.

Dairying and Hog Raising

H. A. LINDGREN

All letters regarding commercial and technical features of dairy farming and hog production promptly answered. Address all communications to Dairy Department, Western Farm Life, Denver, Colorado.

Developing New Dual Purpose.

Dairy breeders in the Rocky Mountain region will be interested in getting details concerning an experiment in cross-breeding that is being made in Alaska under supervision of the Department of Agriculture. The climate in the far north is too severe for any of the special dairy breeds, consequently an effort is being made to develop a dual purpose animal on a foundation of Holsteins and Galloways. The aim is to produce a hardy, thrifty type of animal that will withstand the rigors of the climate and at the same time retain some of the milking qualities of Holsteins. The report of the work of the Alaska Agricultural Experiment Station covering the year 1918 has just been made public.

It is stated that no opinion can yet be expressed concerning results of the cross-breeding experiments, but that five cross-bred calves were dropped, four of them the offspring of Galloway cows bred to the Holstein bull, and one the offspring of a Holstein bred to a Galloway bull. These calves are all black like the Galloways and are polled like the Galloways, but are of more rangey build and have a sleek, short coat of hair like the Holsteins. A pure-bred Galloway calf has a fuzzy, curly coat. This is entirely absent from the cross-breds.

The Galloways seem to be well adapted to the climate of the Alaska coast region, but the Holsteins are visibly affected by the cold and show a very perceptible drop in the flow of milk when unusual weather conditions prevail. They have to be housed earlier than the Galloways in the fall and kept under shelter later in the spring.

After every cold rain their milk yield decreases from 25 to 50 per cent and usually by the time they are back to normal, another cold rain sets in, so that they are not doing well under the present conditions prevailing at the Kodiak station. Their winter feeding period is from five to six weeks longer than that of the Galloways.

The cross-bred calves resemble the Holstein more than the Galloways. The aim is to secure an animal that will be intermediate in milk and beef production. While securing this type it is hoped to learn something of the law of inheritance, and to develop other facts concerning breeding that will be of value and interest to the livestock industry generally and especially to breeders in the higher altitudes of the Rocky Mountain region.

There has developed in the Alaska experiment an off-shoot from the main work through the accidental occurrence of tuberculosis in the herd of Galloways. More than half of the herd imported from the United States for the experiment proved to be infected. The reacting cattle were isolated at Kalsin, about fifteen miles from the Kodiak station, where the sound animals are kept. These cattle were, however, continued in the breeding experiment, their offspring being removed immediately on birth and fed on pasteurized milk furnished by the tubercular mother. Sound, healthy calves have thus been raised from tubercular parents through isolation from the affected cattle and the feeding with pasteurized milk. This indicates that it is unwise to kill valuable breeding stock infected with tuberculosis when offspring from such stock can be thus isolated and handled.

Another Pahgre Valley Record.

A remarkable record for milk and butterfat has just been announced by Loesch Brothers of the Pahgre Valley Ranch at Montrose, for their cow Atlanta Rag, an animal of their own breeding. The record is 32.79 pounds of butter and 607 pounds of milk. Atlanta Rag is just past six years of age and is of very good size. Before freshening she weighed 1810 pounds. As a senior 2-year-old she made just under 20 pounds of butter. Her dam died before the owners could get a record on her, but would have made a very creditable showing had she ever been tested. Atlanta Rag's sire, Sir Rigtje of Pinehurst, was the first herd sire used on the Pahgre Valley Ranch. He has only 16 A. R. O. daughters, but they are a really wonderful string. Of the sixteen four have over 32 pound seven days' records, these four having an average of 30.26 pounds. The whole sixteen averaged 25.71 pounds. This is a wonderful production record for the daughters of one bull when it is remembered that he was bred to cows of no known or special merit.

Atlanta Rag calved October 13 and was put on test nine days later. She received 20 pounds of sugar beets, about 20 pounds of hay and at first only 16 pounds of grain. This was increased slowly until the end of the first week, when she was getting 20 pounds of grain. There was no silage ready for feeding at the time. She is not a big eater and her caretaker had some difficulty in getting her to eat the ration assigned to her. In spite of this she made a record that puts her high among the Holsteins of Colorado.

Sire and Dam Ratios.

Developments in the "Better Sires—Better Stock" campaign have resulted in figures showing the relative number of males and females kept for breeding purposes. Following are the ratios based on more than 200,000 head of stock of all kinds listed with the United States Department of Agriculture:

Cattle—1 bull to 18.9 cows.
Horses—1 stallion to 16.9 mares.
Swine—1 boar to 11.5 sows.
Sheep—1 ram to 37 ewes.
Goats—1 buck to 26.6 does.
Poultry—1 rooster to 23.3 hens.

Other poultry, geese, ducks, turkeys, etc. (average)—1 male to 8.5 females.

These figures represent conditions on more than 2,000 farms in various parts of the country and are believed to be typical of other farms. They show the importance of placing stress on quality in sires, since in practically all cases a sire is the parent of a very much larger number of offspring than the average female animal.

Meat Curing Season.

Did you ever stop to think of that good old home-cured ham and bacon, home-made sausage, headcheese and lard that used to grace the farmer's table? Too many of our farmers have discontinued the practice of availing themselves of these dainties. Instead we find many are selling all of their hogs and going to the grocery store and buying the expensive product wrapped in paper. On account of the high price they no longer buy a whole side of bacon or ham but take a pound or two. This naturally reduces the consumption of pork products quite an extent. If this supply of meat were cured at home it would be available at a much less cost and more satisfaction all around.

Mr. A. A. Loss at Montrose cured about 300 hogs last year for his neighbors at $1.25 per cwt. They had their own meat at a very reasonable charge and they naturally ate more of it. Any man who has a good recipe for curing pork could do well during the winter months at this kind of thing. Folks living in the cities find it advantageous to go to the farmer and buy a live hog at good old home-cured ham and bacon, 15 cents a pound and have it cured. A hog will dress out 75 per cent meat, less than 25 cents a pound straight through for hams, bacon, lard, sausage, spare ribs and all. How many of these products can you buy for 25 cents a pound at the market or grocery store?—H. A. L.

Feeding the Young Calf.

I would like your advice on raising calves. We have a nice heifer calf 12 days old, Holstein and roan Durham. Am giving it all the good milk it wants now, but please advise me as to how long it should have the whole milk and what to change to so as to have it healthy, as it is a fine calf so far.—Anxious, New Mex.

There is no better feed for the calf than whole milk, but it is too expensive to continue this beyond the time when the calf will be able to change to skim milk. On farms where skim milk is available it may be substituted for whole milk in the ration of a healthy calf when the animal is 3 to 4 weeks old. A few days will be necessary to complete the change. If the skim milk is fed in a warm, sweet condition ordinarily no difficulty will be experienced. The amount of skim milk should be increased as the calf increases in size, but about 15 pounds daily should be sufficient, provided the calf is started on grain and alfalfa or some other good

hay. Where the supply of skim milk is sufficient the calf should have it until it is 5 to 6 months of age. It is one of the most economical feeds known and is unequalled for producing growth of calves. The calf may be encouraged to eat grain at an early age if a small amount is sifted in the pail after the milk has been drunk, or if a fresh supply is kept in a box easily accessible. Most calves will begin to nibble at grain when they are 2 or 3 weeks old, and it has been observed that the young calf having access to several different kinds of grain at first prefers the soft feeds, such as wheat bran and oil meal. After it becomes older it will eat some of the coarser feeds, such as oats and cracked corn. A mixture of ground corn 10 parts by weight, wheat bran 30 parts, and oil meal 10 parts, is suitable for the young calf.

Colorado a Duroc State.

That Colorado has come into her own in the business of breeding an exceedingly high class of the most approved type of Duroc hog, is very evident to any one who has watched the trend of swine events in this state during the last few years. One does not have to be a swine expert to discover this if he will spend a few hours around the hog barns of any of the leading Colorado fairs or stock shows.

Farmers and stock breeders from many different sections of the country have been watching with more than ordinary interest the unusual development of this breed of hogs in this state, and have remarked on the great size, the enormous bone, the quality and the pleasing appearance of the Duroc Jersey hog.

To the ordinary observer all this seems phenomenal, but a little investigation brings out the fact that the success of the Duroc in Colorado is largely due to the united efforts of the advocates of this breed to make this state headquarters for the highest class of Durocs that can be found. They started with what they believed to be "the best hog on earth" and proceeded to make him better, and the unquestioned popularity of the Duroc is attested by the fact that in our leading fairs and stock shows the Duroc frequently outnumbers any other breed three to one.

Breeders and farmers from other states are buying in Colorado, seed stock to improve their farm herds, and also high-class show Durocs to improve their show herds. Seven different states were represented among the buyers at the Colorado Duroc Breeders' Association sale at the Stock Show last January.

The best Duroc authorities in the world are making frequent trips to Colorado and our breeders are getting the benefit of their advice and the inspiration of their presence. The noted Duroc authority, F. F. DeVore, in his "National Duroc Directory and Year Book" for 1919 and 1920, says:

"It is highly important and significant to note what Colorado breeders are doing for the advancement of the Duroc business in their state. It is just as important to the man in Ohio or Texas as it is to the Colorado breeder. I cannot refrain from mentioning that some of the best Durocs of the year were produced in Colorado—bred, raised and developed there. I say to these enterprising Duroc promoters of Colorado: You have done a remarkable work in a surprisingly short time. Your methods have been constructive and highly intelligent. You have contributed largely to the betterment of Durocs and to the propagation of Duroc influence. You have my best wishes and my earnest support."

At the recent State Fair at Pueblo, there were nearly as many Durocs on exhibition as at the National Swine Show at Des Moines. Secretary G. R. Pfander of the National Record Association, and Secretary R. J. Evans of the American Records, were both on hand and attended the breeders' meeting and the banquet and gave the breeders some valuable pointers. Mr. Evans in his report of the show in the Duroc Bulletin says: "In a seemingly short number of years the Pueblo show has grown from a weak infant to an almost full grown display of high-class animals. The first prize animals in each class placed by Judge L. A. Weaver, Monday, September 20, could well have been placed at the head in big eastern shows."

The Colorado Duroc Breeders' Association is making great preparations for its coming annual sale at the National Western Stock Show, January 15 to 22, 1921. The animals now being selected for this sale will include some of the choicest females from the best herds in Colorado, and these will be offered bred to the best Duroc boars in the west. The best blood lines of the Duroc breed will be represented in this sale, and nearly every animal offered will be either a prize winner, sired by a prize winner, or bred to a prize winner.

This will no doubt be the opportunity of the year for prospective buyers of registered Durocs to add to their herds, and at their own prices, some of the best Duroc blood ever offered at a public sale. —C. F. Burke, Secretary Colorado Duroc Breeders' Association.

Dents Mean Short Measure.

Many farmers who ship milk for market insist on measuring their product by a stick shoved into the can from the top. This measure is regarded as accurate in spite of the fact that cans are often of irregular shape, due to hard usage. The U. S. Department of Agriculture recently tested over a thousand cans of milk by stick measure and then by weight. The measuring stick said 6,185 gallons, but the scales only 6,068 gallons, a difference of nearly 2 per cent. This difference was due primarily to the condition of the cans, which were fairly representative of the containers usually found on the way between the farms and the creameries.

San Luis Valley Growers Study Their Potatoes.

(Continued from Page 3.)

were eligible to compete in this class. All potatoes in the certified class had to be of U. S. Grade No. 1; thus they could be only of one size and a bushel showing was required. The winning seed exhibits go to the college for experimental purposes.

Judge Locklin complimented the growers on the excellent showing made in every class, but also cautioned them about diseases. Rhizoctonia was frequently pointed out to those who followed the judging and there was also considerable fusarium. Dipping the seed in corrosive sublimate solution before planting is the preventive for rhizoc. and rotation the only way to eliminate fusarium.

Students' Judging Contest.

On the second day of the show the young people got a chance to demonstrate their knowledge of potatoes. Student teams from the consolidated schools of Monte Vista, Sargent and Center took part, there being one girl in the group—Miss Alice Gardner of Center. For this contest ten potatoes of each class in the market and seed exhibits were arranged on a separate table. These had previously been placed by Judge Locklin.

Three premiums were offered in this class, first being 50 pounds of the best Russet Burbanks which could be found in Idaho, these being donated by W. H. Olin, Supervisor of Agriculture for the Denver & Rio Grande railway. Second prize was $5, and third prize $3. There was an exciting contest. When the final check was made on the score cards the winners were found to be Arthur Deitrich of Center first, his score differing only 49 points from that of Judge Locklin; Joe Gardner, second, with 41 points difference, and Leo Maxon third, with 46 points difference from the correct placings.

Prof. Olin gave the winner of first prize his choice between the Idaho certified seed and the winning exhibit of Brown Beauty seed potatoes. Young Dietrich chose the Idaho Burbanks. Prof. Olin purchased the sweepstakes Brown Beauty seed grown by Corbin Wright, in the auction sale of seed potatoes which followed the judging contest. He paid $10 for the 15 pounds, which was top sale of the auction, and left the potatoes with the two county agents to be disposed of to the best advantage in furthering potato club work. Prices ranged from $2.50 to $10 per 15-pound sample and bidding was lively.

"King Spud" dinners were served at noon on November 11, 12 and 13, the first day being the annual meeting day of the Saguache County Farm Bureau. These dinners, which were served at the Methodist church, included besides roast Shorthorn, Hereford meat loaf and stewed Rhode Island Reds, such delicacies as baked Russet Burbanks, browned Early Ohios, mashed Brown Beauties, escalloped Irish Cobblers, creamed Red McClures and Rural potato chips, besides biscuits containing a considerable percentage of potato flour, made by the potato flour factory at Monte Vista.

The speaking program included a stereopticon lecture on potatoes by Prof. Olin, presentation of trophy cup and address by Dr. Charles A. Lory of Colorado Agricultural College, and brief talks by E. D. Smith, Assistant State County Agent Leader; Fred T. Bryan of Denver, in charge of inspection work for the Colorado Potato Shippers' Association; W. F. Heppe, of the United States Bureau of Markets; Mayor C. W. Ickes of Center; W. E. Gardner of Center, and Farmer Putnam.

Committees in charge of the Potato Show were the following:

Premiums—J. F. Robinson, Center; C. E. Beck, Center.

Program—A. Roedel, Center; J. Roberts, Center.

Finance—H. T. Blood, Center; W. E. Gardner, Center; G. E. Newmyer, Center; C. W. Brandborg, Monte Vista.

Entry—C. D. Hyatt, Monte Vista; E. S. Jordan, Monte Vista; H. E. Darrah, Monte Vista; R. A. Chisholm, Del Norte; I. E. Francis, Jarosa; C. W. Brandborg, Monte Vista; Roy Shahan, Alamosa; R. L. Hughes, Hooper; J. E. Moore, Mirage; J. F. Goff, Bowen; Chris Selters, Monte Vista.

Chairman of Committees—William A. Sauder.

Following is a list of the awards:

Individual Group Displays.

Number of varieties, 10%; arrangement of display, 15%; uniformity of exhibits, 25%; quality of exhibits, 25%; trueness to type, 25%.

Corbin Wright, Monte Vista, first; Howard Macey, Monte Vista, second; R. L. Hughes, Hooper, third.

Market Potatoes.

Brown Beauties—Sauder & Wilson, Center, first; Corbin Wright, Monte Vista, second; Charles Durr, Center, third.

Russet Burbanks—Corbin Wright, first; Isaac Waters, Monte Vista, second; R. A. Chisholm, Del Norte, third.

Red McClure—Claussen Bros., Center, first; Glen Johnston (club boy), Center, second; C. R. Robinson, Del Norte, third.

Irish Cobbler—Joe Clark, Monte Vista, first; I. F. Rockey, Saguache, second; W. W. Johnston, Hooper, third.

Early Ohio—Elmer Kernen, Del Norte, first; J. E. Kernen, Del Norte, second; Omar Underwood, Del Norte, third.

Seed Potatoes.

Brown Beauties—Corbin Wright, first; Floyd Robinson (club boy), Center, second; W. A. Hood, Monte Vista, third.

Burbanks—Corbin Wright, first; Isaac Waters, Monte Vista, second; Claussen Bros., Center, third.

Red McClure—Claussen Bros., first; Everett Neumyer, Center, second; R. J. and C. B. Robinson, Del Norte, third.

Irish Cobbler—I. F. Rockey, Saguache, first; W. W. Johnston, Hooper, second.

Early Ohio—G. B. Klauman, Center, first; J. E. Kernen, Del Norte, second; Omar Underwood, Del Norte, third.

Sweepstakes—Best market exhibit regardless of variety—Corbin Wright on Russet Burbanks.

Sweepstakes—Best seed exhibit regardless of variety—Corbin Wright on Brown Beauties.

Certified Seed.

Brown Beauties—Sauder & Wilson, Center, first; I. F. Robinson, Center, second; R. E. Barber, Hooper, third.

Russet Burbanks—R. L. Hughes, Hooper, first; Sauder & Wilson, second; Isaac Waters, Monte Vista, third.

Red McClure—Claussen Bros., Center, first; O. F. Diller, Center, second; R. E. Barber, Hooper, third.

Sweepstakes—Best exhibit of certified seed regardless of variety—$75 silver loving cup given by Horticultural Department of Colorado Agricultural College, Sauder & Wilson, on Brown Beauties.

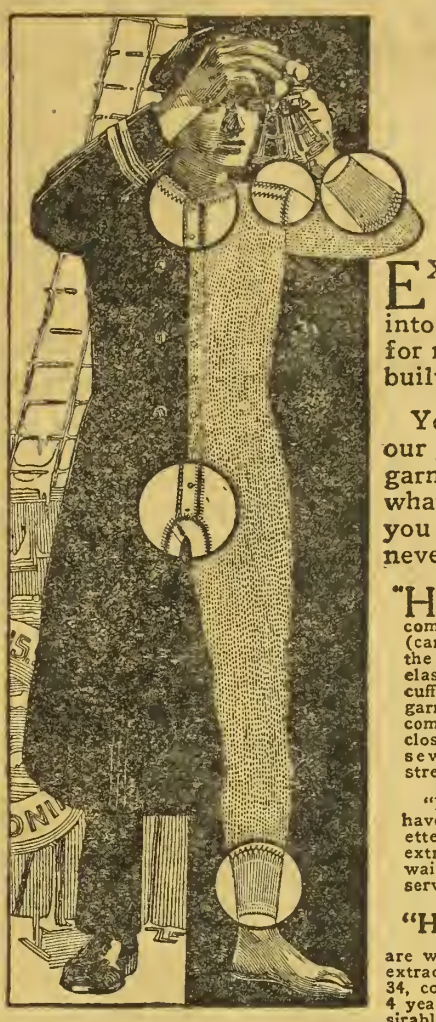
Potato Clubs.

Market Potatoes—Ben Johnston, Red McClure, first; Theo. Gardner, Center, second, on Brown Beauties.

Seed Potatoes—Lloyd Robinson, Center, first, on Brown Beauties; Merlin Stewart, Center, second, on Brown Beauties; Loyal Johnson, Center, third, on Brown Beauties; Glen Johnston, Center, fourth.

European corn borer has been discovered in Canada, the United States Department of Agriculture finds, and warns against this new source of infection.

"HANES" is nationally standard underwear—*it will make good to you!*



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"HANES" heavy winter weight union suits and the new silk trimmed, full combed yarn medium weight union suits (carrying the yellow Hanes label) have the non-gaping tailored collarette and elastic knit, shape holding arm and leg cuffs; buttonholes last the life of the garment; an extra gusset assures extra comfort across the thighs; the "Hanes" closed crotch *stays closed;* pearl buttons sewed on to stay; reinforcements strengthen every strain point.

"Hanes" heavy winter weight Shirts have the snug-setting elastic knit collarette and arm cuffs. Drawers have an extra wide, durable 3-button sateen waist band that assures comfort and service.

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are wonderful value because they give such extraordinary service! Made in sizes 20 to 34, covering ages from 2 to 16 years. 2 to 4 year old sizes have drop seat. Four desirable colors.

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AGRICULTURE

cat — rig — rag — lure — real — rural — tar

A brand-new ten-dollar bill as a prize to the one who can make the most correctly spelled words from the letters in the word AGRICULTURE. Nothing difficult about it. Try it—rig, cat, rag, lag, real, lure—see how easy it is. Get the whole family around the table tonight and make a game out of it. You will not only spend a pleasant evening, but you can win the new ten-dollar bill.

Each list of words must be accompanied by a two-year subscription at one dollar, either your own subscription or some one elses.

This contest is open to those who are not subscribers as well as those who are subscribers.

No employe of WESTERN FARM LIFE will be allowed to participate in this contest.

Do not use more letters than there are in the word AGRICULTURE to make any one word. For instance, you could not use the word "reel," as there is only one "E" in the word AGRICULTURE.

Your list must reach this office not later than December 15th, 1920.

All words used must be defined by Webster's International Dictionary, and this authority will be used by the Judges.

You may send in as many lists as you wish, but each list must be accompanied by a two-year, one-dollar subscription to WESTERN FARM LIFE.

Each person who sends in a list of words together with one dollar for a two-year subscription will receive a prize, whether you win the ten-dollar bill or not.

Be Sure and Use This Coupon

WESTERN FARM LIFE, Denver, Colo.:

Enclosed find list of words I have made from the letters in the word AGRICULTURE and a remittance of one dollar to pay for a two years' subscription to WESTERN FARM LIFE.

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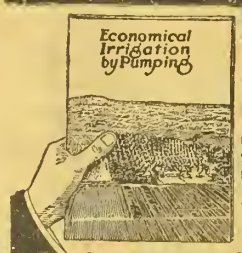

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Albany Hotel
DENVER
Where Sam and Frank Dutton are always glad to greet their friends.

The Heart of Virginia Keep.

(Continued from Page 13.)

that her mind dwelt on the shock which had befallen her like a thunderbolt from June heavens; and, as on that first occasion, he felt an uprushing desire to comfort and shield her.

He was thinking what he would say to her if he only dared, when he perceived that the jolting of the cab had shaken the silver-mesh purse from her lap onto the floor. At the same moment she awoke from her abstraction and saw the purse lying at her feet. Simultaneously both reached for it. Their hands met.

Impulsively, as if to express something of the gushing sympathy pulsating in his veins, his fingers closed upon her soft, slim hand and pressed it to his palm in a crushing embrace. She caught her breath and tugged frantically. But the contact was electrical, with her warm flesh burning, throbbing, against his.

He came to his senses, releasing her hand as one would free a fluttering bird. When he looked at her, he saw her face was scarlet.

He laughed uneasily as he handed her the purse.

"A few more rescues of that, and I'll claim salvage."

"We will turn back now. Tell the driver, please."

"Surely not yet! Why, we've only started."

"I cannot go farther." She opened her watch.

He had it on his tongue to offer additional persuasion, but her attitude warned him how unwise this would be. He gave the cabman her address.

Neither spoke as the cab turned and started back the way it had come; but as they neared Clayton avenue a hurdy-gurdy, wheezing the "Miserere" from "Il Trovatore," suggested a conversational topic at once neutral and apt.

"A sweet harbinger of spring," he said, tossing a coin to the Italian.

She ignored him.

"Adio, Leonora, adio!" grew faint in the distance behind them.

"Always had a weakness for that old air. Even an organ-grinder can't make me dislike it."

She made no answer.

He essayed further amenities, but perceived the futility of striking a responsive spark, and finally gave up.

Staring calmly ahead at the broad, cool, onrushing driveway, lips tranquilly together, slim body erect, she sat waiting patiently for the journey to end. When at last the cab trundled under the archway of Westmoreland place and stopped before her home, she alighted with no loss of serenity.

As he helped her out a chocolate-colored touring-car with yellow running-gear chuffed oilily toward them, sidled to the curb, and came to a cushioned stop. A man in the tonneau stepped stiff-leggedly to the pavement, assisting himself with a bamboo cane, though so jauntily that one was in doubt whether a fop's affectation or a cripple's infirmity necessitated its use.

Under the average in height, his deficiency of stature was accentuated with a goodly excess of girth. His age was indeterminate, though certainly not under forty. His face was cherubic, his freshly bathed babe's. He was as spotlessly, as irreproachably dressed in the eyes infantile, and his skin as pink as a prevailing style as a clothing dummy. He wore no jewelry save a black pearl scarfpin.

As he hobbled towards them like a rotund poodle walking airily on three legs, Virginia gave her cavalier a studiously hasty good-bye, and turned to greet the newcomer warmly. A sudden odor of heliotrope permeated the air. Trude tarried but a moment, hat in hand, obviously the undesired third who forms a crowd.

It occurred to him before his cab reached King's highway that his mood should be sour, and he was surprised to know it was not. Chiefly he was conscious of trying to remember something. That babylike face, that debonair limp—where had he seen this man before? He knitted his brows, pressing his brain for the answer. He seldom forgot a face.

Presently, while his conscious mind, having given its order, was busying itself with other things, his subconscious mind flashed the memory: a "grizzly-bear" dance hall on the Barbary Coast in San Francisco, a shrieking "orchestra," a cosmopolitan crowd gathered round a table on which a chubby-faced man flushed with alcohol, and a painted woman in spangled skirts clearing her knees, were performing in a manner eminently entertaining to their audience; the man by reason of his limp resembling a duck on a hot stove, the woman because of her intoxication being only disgusting.

Trude sat back grimly. He remembered that some one near him had pointed out the man as Roy Fraser, of St. Louis, a bachelor whose principal occupation was the squandering of a fortune acquired by his father, who had been a gentleman; remembered also that his informant had said the man's limp was received in a domestic scrimmage at the hands of an angry husband.

That such a man should be an evident friend of the girl who had come to occupy so important a place in his mind was disquieting, but the feeling was not tinctured with jealousy. He could not conceive of a man of that type receiving a serious thought from her. Her somewhat effusive greeting he attributed to piqué, and—such is the curious resiliency of masculine egoism—he was elated, not cast down by the assumption. She must be interested in him, else she would not have been vexed with him.

Thus he reasoned. And by the time he reached the Publicist building he was recalling many things she had said, dressing them in complimentary guise and enjoying rather a sizeable slice of mental buoyancy.

Moffett, leaving the business office, caught sight of the cab and crossed the pavement with his short, decisive stride.

"Fine business for a twelve-dollar-a-week reporter!"

"Unusual circumstances arose, Mr. Moffett."

"Well, pay the man and get out—unless you want to give yourself away."

Trude, alighting, smiled apologetically.

"Have to call upon you, Mr. Moffett. I'm broke."

From behind his steel-rimmed spectacles, Moffett regarded Trude frowningly. Then he paid and dismissed the cabman, and jotted a notation in a small, paper-backed memorandum book—a ready-made clothier's advertisement.

"Thanks! Now, will you lunch with me?"

Moffett carefully replaced the memorandum-book in a vest pocket, portentously calm.

"Mr. Trude, I distinctly don't like this sort of thing. It smacks of a shoolboy's prank. You're too old for such capers. A great daily like the Publicist is not a child's plaything."

"Oh, I know I'm a regular young fool."

"Do you know you are four hours late upstairs?"

"Yes; I know that, too. Are we going to lunch?"

Moffett relieved his mind freely of further candid disapproval as they started toward McTague's cafe.

"I hope," he ended, "you're beginning to see the folly of killing the biggest piece of news of the day."

"Now that shows," commented Trude, feeling absently for a monogrammed cigarette case renounced the day before, "what an enormous lack of mental telepathy there is between you and me."

"You don't intend to stop?"

"Stop? Why, I'm just commencing—but here we are. I'll tell you downstairs."

At a secluded table, with consommé between them, Trude elucidated:

"Boss, I want you to get the best special writer, or writers, you know—no matter what he or they cost—to do a serious of slashing, brilliant, pungent, fiery editorials, showing the fallacy of indicting a man of Alfred Keep's standing for a crime committed twenty-five years ago by some bar-room loafer. Have them study the case thoroughly. Make 'em hammer its weak spots for all they're worth. Run the articles from day to day in big black type. That'll be all for the present."

Half a dozen thoughts rushed to Moffett's mind at once. One jumped off:

"You'd make the paper yellow."

"A little saffron streak won't hurt it."

"And you in the game one day!"

"Three days tomorrow," Trude pleasantly amended.

But when he went on his voice acquired the resolute firmness which was an index to the strength of character always lurking unsuspected beneath his seeming irresponsibility.

"Don't forget, Mr. Moffett that I am the doctor, and what I say, right or wrong, must be obeyed."

Moffett could not forget that. It had become a bugbear. It had given him many bad moments since yesterday; had made him bitterly regret the fact that the Publicist was not owned by a stock company; had made him almost write his resignation; had caused him to wonder if the elder Trude, always a man of sound judgment, had gone demented at the last to leave his erratic nephew absolute master of the most conservative newspaper in Missouri.

The waiter, arriving with some baked trout, prevented his replying immediately. But, having dispatched the menial for the ale which he always drank with his fish, he said:

"I appreciate my position. After all I am only an employe. If I dislike my orders I can quit. But it goes hard," he complained, violently dousing the trout with tomato catsup, "to see the thing I have lived with and fostered for half a lifetime seized in inexperienced hands, grievously misused, perhaps irreparably injured."

"You really think it's as bad as all that?"

"It's worse!" declared the Scotchman, adding some Worcester sauce to the catchup.

The waiter returned with the ale and a chafing-dish delicacy for Trude, who, ladling the hot food onto his plate, said argumentatively:

"Now look here, Mr. Moffett. You're waging a stiff fight against a gang of alleged grafters in the city hall, utilizing both the news and ediorial columns of the Publicist. Notwithstanding these men may be innocent for all I know, I have made no protest, and shall make none against your battle. Why then should you object when I start mine?"

Moffett, in the act of sipping his ale, put down the glass.

"The cases are not at all similar. I am fighting for a cause."

"I, too," said Trude quietly, "am fighting for a cause."

"But what is it?"

Trude hesitated, buttering his slice of French bread. Then, looking up, he met the skeptical, practical, unemotional eyes of the bewhiskered Scot coldly entrenched behind the steel-rimmed spectacles.

"I'll tell you later," he said.

Moffett did not press the issue.

They began to talk of other things—of the day's developments in the Keep case, of St. Louis journalism, in which the younger man received some pithy instruction; but more particularly of matters lying nearer home.

Trude sketched his project in detail. Moffett was doggedly determined to make him abandon it, go back to New York and behave like a good little boy, and to that end the Scot argued himself red in the face. Futile effort! When Trude, consulting his dollar watch, rose hastily from the table, his plan remained unchanged and his opponent had promised to carry it out.

CHAPTER XIV.

The Mockery of a Dream.

Virginia's pleasure at meeting Roy Fraser was wholly assumed. Scarcely had Trude's cab passed from sight before her interest in the newcomer waned and she began to show an inclination to enter the house—alone. She felt suddenly tired, listless. Also—for she hated sham—she was irritated with herself.

Puzzled by her sudden indifference, Fraser said:

"I wish I had language, Miss Keep, to tell you how deeply grieved I am over this terrible thing that has happened to your father."

"You are very kind," she murmured, wondering why a man should use heliotrope perfume.

She had no reason to doubt his sincerity, yet she knew her words rang hollow.

"And you are very noble to stay by him so loyally," he went on in his falsetto voice. "I just now read of it. I mean about your meeting him at the train and visiting him in the—er jail, and all that. It is really very splendid of you."

She nodded absently, recalling something she had said to Trude and wondering what construction he had put upon it.

Fraser, resting his weight on his sound leg, waved his walking-stick at the chocolate-colored touring car.

"Won't you come for a drive? The air is delicious." His effeminate voice was soft, even purring.

"Thank you, no. I am expecting someone at home."

The hint was unmistakable. Unable to reconcile her present coolness with her prior warmth—which had surprised as well as delighted him—he regarded her with a polite and innocent inquiry in his round baby-like eyes, his tongue pressed wonderingly against his bursting upper lip. After a little silence he said in a buttered tone:

"I'm awfully sorry. Some other time, perhaps?"

"Perhaps," she assented, formally unconcerned.

"Well, I mustn't detain you any longer," he said as if about to go. Please remember that if I can be of aid it will be a pleasure to help you."

"We will remember, Mr. Fraser," emphasizing the pronoun.

Then abruptly she looked at him with a faint reawakening of interest.

"It's singular," she remarked, thinking how pink his plump cheeks were, "that the men my father scarcely knew have been the most generous, while others he regarded as friends have behaved quite differently."

Fraser looked down, tracing the point of his bamboo cane along a fissure in the asphalt pavement. "I am sorry your father has not regarded me as a friend." He moved his fat shoulders. When he lifted his infantile eyes she saw reflected therein such wounded helplessness as a persecuted child might suffer. "I'm a dog badly named, Miss Keep. Mrs. Grundy says I'm a hard sort."

"Mrs. Grundy is often mistaken," she said, "and I wish we had known each other better. Good-bye."

He touched her hand respectfully with his short, dimpled fingers, and the wronged, childish virtue in his eyes grew even more piteous.

"Good-bye," he murmured with something like gentle pathos. "And thank you most warmly."

He watched her covertly from his motor car until the vestibuled door of the Georgian brickhouse shut her from view. Then he spoke to his chauffeur. The place to which he directed the man was one of the most notorious dives in the Chestnut street tenderloin.

Entering the hall, Virginia came face to face with her stepmother, who for some mysterious reason wore a faded black dress and hat at least five seasons behind the style.

"May I have a word with you, Virginia?"

"Certainly, mother."

"Let us go in here."

They entered the library. Mrs. Keep sat down, but Virginia remained standing near the door, drawing the hatpins from her hat.

"I would rather you were seated, Virginia."

The girl complied quietly, removing her hat and loosening the rich, thick hair about her temples.

Mrs. Keep, thin lips forming a sharp, straight line, vertical furrows between her brows, was gravely silent a moment.

"Virginia, I have something excessively painful to say to you. My lawyer was here this afternoon. I have instructed him to file a petition for absolute divorce. Furthermore—and this is what I particularly wish to tell you—I have made preparations to leave."

Virginia was thrusting the hatpins in the hat lying on her lap.

"May I know what charges you intend bringing against papa?"

"It is both painful and distasteful to me, child, to discuss such things with you."

"You need have no fear of shocking me."

"What was it you asked?"

"On what ground will you base your divorce suit?"

Mrs. Keep rose agitatedly.

"We shall have to await developments in your father's c-case," she faltered, unable for the first time to meet her stepdaughter's steady, dark gaze.

"That will mean some delay."

"Naturally."

"And meanwhile?"

"I shall leave here."

"But you are not going soon?"

"I am going today."

"Mother! No! You won't go before he comes? You will at least wait and talk things over with him? Oh, mother! You must—you must! It's only fair."

Virginia, who had started impetuously across the room, stopped beside a leather chair, on which she rested now with one knee, white face appealing to her stepmother.

As an excuse for not meeting her eyes, Mrs. Keep fumbled with trembling fingers in her handbag.

"I——. It is too late now, my child. An expressman will call presently for my things, which are packed and in my room. You might tell your father that I have taken with me only such possessions as were mine when I came to him. All he has given me I am leaving behind." She looked up and held out a thin arm, gloved in rusty black silk. "Shall we say good-bye, dear?"

Vaguely the reason for the out-of-date apparel crossed Virginia's mind.

"Mother, you are making a grave mistake. So far as you, or I, or perhaps any one else, know, father never committed a wrong in his life. Say you will give him a hearing. The worst criminal alive is entitled to that."

"I cannot—will not—discuss this thing with you, Virginia. I can only say I am deeply sorry for you. I pity you from the bottom of my heart——"

"Keep your pity!" Virginia, hotly tempestuous, stood erect so suddenly that her leg, in slipping from the chair, brought her foot smartly against the floor as if stamping in anger.

Mrs. Keep smothered a horrified gasp, then turned and fled.

Breathing quickly, eyes smarting, Virginia stood beside the chair, touched to the raw quick by her stepmother's action, so heartless, so cruel, so shattering to her preconceived belief in womankind did it seem to her. Later as she groped her way upstairs, winking back the blinding tears, she felt that the stigma of disgrace had smirched her skin for the first time.

She gained her bedroom, locked the door, and flung herself face down on the bed. And the scalding tears, damping face and arms and lacey white pillow, seemed to well up from her soul, so deep were the sobs that shook her slender body.

Lizbeth knocked gently on the locked door.

"Generman down-staihs wanter see you, honey."

No answer came save the hushed, broken sound of weeping. Lizbeth knocked again, turning the knob in tentative appeal.

"Ain't you gwine lemme in, chile?"

Virginia raised herself on an elbow, black tresses tumbling about her shoulders, long eyelashes dewy.

"No—no. Go away."

"Honey, ain't you gwine open de do' fo' ol' Beth?"

"No!"

Lizbeth hesitated, her withered hand trembling on the knob. Then, mumbling to herself, she moved sorrowfully away.

Long afterwards Virginia arose, dashed cold water over her face and arms, and arranged her disordered hair. She was sitting in the twilight at her latticed window when Lizbeth returned with a large envelope.

"De generman done gone, chile."

"Who was he?"

"Mr. Lewis, de lawyah man. Yere's de deespatch he gib me."

Virginia took the epistle in a listless hand. Opening the long envelope, she found within two smaller ones, both addressed in her father's handwriting—one to Mrs. Keep, the other to herself. She laid the first aside, and read her own twice:

"I have just finished a letter to your Aunt Harriet in Seattle, enclosing a check to cover her railroad fare to St Louis. I should prefer having you go to her, but since it seems this is not to your liking, she shall come to you. It will be nearly a week before she can get here."

The evening became a dull, unceasing ache to her. She dined alone in the great dining-room, waited upon by the melancholy Bartley—Mrs. Dolan, the housekeeper, had resigned without notice because of her reputation—and afterward the long hours stretched ahead in unrelieved gloom. A telephone call at Lewis's residence elicited the information that nobody was in but a housemaid; nor was the family expected home before midnight.

Always near was Lizbeth, eyes big and tragic, black, withered old face seeming more aged than ever, shoulders stooped, lips constantly muttering, offering counsel that was never heeded. At last Virginia gave way to a hasty rush of resentment at the whining tone.

"Beth, for heaven's sake! Leave me alone! Shut up and go to bed!"

Lizbeth recoiled as if struck, and lifting a corner of her apron to her eyes, began to whimper.

"Yo' ma never speak to me like dat in all her bo'n days. You gwine bust ole Beth's sperit s-sho."

The girl's eyes softened in quick contrition. Having soothed the hurt with the verbal ointment she knew so well how to apply:

"There now, it's all over. Wait till I get some books, and we'll go upstairs and I'll read to you."

"Honey chile, yo' voice sho do soun' sweet."

Putting aside "The Deemster," Virginia selected a recent novel from the heap on the table and endeavored to submerge her mind in its contents. The effort was hopeless. Her own story, the one she was living at that moment, was so much more vital to her than any between book-covers that the theme of the fictitious narrative became puerile, the thread lost, the characters puppets. She awakened Lizbeth and ordered her bath.

Some forty minutes later, sleepy-eyed and glowing from her warm, scented bath, her hair loosely plaited in two thick strands, Virginia curled up between the cool sheets of her bed, snuggled her shoulders under the light blanket, clasped her arms around the lacey pillow, buried her cheek in its eider-down softness—and expected to be asleep in less than two minutes.

In less than thirty she was at the latticed windows, wide awake. She had slipped on a Turkish bathrobe. There was no moon; no stars. Instead, it was misty, raw, black. As she sat huddled up like a small Eskimo her eyes never wavered from the patch of light shed by the corner arc lamp.

"How silly! I'm sure I don't know what I'm sitting here for."

She sneezed.

"Unless it's to catch cold."

She wrapped the robe closer about her body and settled back to wait, living over the realistic dream which had awakened and brought her from a warm bed to watch here at a cold window. In the dark recesses of the room behind her a clock ticked off the seconds. Niobe crawled from under the bed and padded softly to her side, tail fanning the darkness; else there was no sound.

Suddenly her heart stood still, then bounded on tumultously. Some one was coming down the street. She could hear the heavy footfalls echoing in the still night. His!

She leaned forward from the hips, her lips slightly parted, dark eyes sparkling as they rested on the circle of white light glistening on the wet pavement. Another moment, and her dream—

She sprang up, and pulled down the shade violently, her cheeks flaming. The uniformed night watchman, making his nocturnal round, had passed below. She threw off the bathrobe, popped back into bed, drew her knees up nearly to her chin, tucking her nightdress around her cold feet.

"Fool!"

And she didn't mean the watchman.

(To be Continued.)

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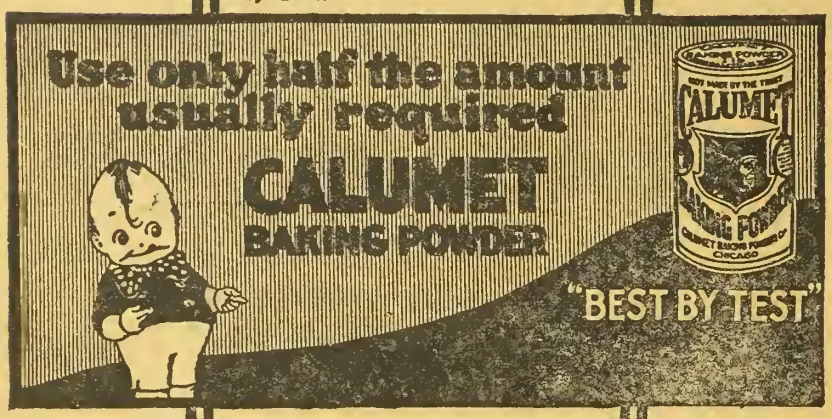

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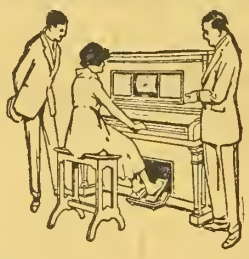

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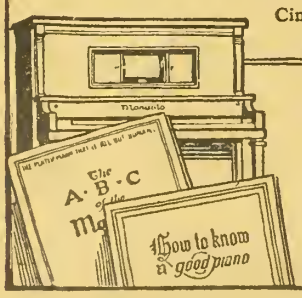

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The Farm Home

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Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

"Who Waits at Home."

After you said good-bye I stood and watched till the shoulder
Of the hill had come between, and there was no more of you;
Then I went back to the tasks, the round of homely duties,
Waiting—and well forgot—till our wonder-hour was through.

There was sweeping that must be done, and hours of work in the kitchen,
To bake, to make and to mend is the woman's formal part.
But the sordid noise of the household was turned into purest music,
Lifted into a song, by the voice that sang in my heart.

And now it is dusk again, and I forget to be lonely,
I have set the light in the window to guide you down the lane,
And everything else is lost, for the long, long day is only
The hours between your going and the time you come home again.
—Katherine Atherton Grimes, in The Southern Agriculturist.

Christmas Taffy.

No Christmas candy plan could be complete without taffy and yet the difficulty is that it seems to have to be made just the last thing to keep it fresh. Here are some hints which will let you make it from one to three days earlier and have it out of the way.

A good recipe is the old one—two cups of sugar and one of syrup, white syrup for white taffy, good sorghum or molasses for dark taffy. Variations and changes in flavor are made by adding either one tablespoonful of vinegar or one-quarter teaspoon of salt. A teaspoon of butter or five drops of glycerine added just before removing from the fire will aid in keeping qualities. In order to keep it a day or two longer it must be cooked hard. One expert taffy maker in our old neighborhood used to use this test: She took an ordinary tumbler, filled it half full of cold water and held it so that the bottom of the tumbler rested on the palm of the hand. Then she dropped a teaspoonful of the boiling candy in the glass. If the taffy had reached the right stage it "snapped" away from the bottom of the glass, which she could plainly feel. There is no danger of breaking the glass, as the water cools the syrup before it touches the glass itself.

Now for the pulling. There is an art in pulling taffy which many people never learn. Taffy should never be twisted in pulling, but pulled straight and folded straight, grasping each end lightly with the tips of the fingers. In folding it straight you keep the long air cells which make it porous and deliciously brittle.

Then keep it very cold and covered with paraffin paper to exclude moisture. It will be as fresh three days after making as it was immediately on making. Taffy canes can be kept if you keep them cold and covered.—E. D.

Results of Nutrition Studies.

Women who recently reported the results of their study of food problems in a class conducted by the Bonner County (Idaho) Farm Bureau said that some of their accomplishments were as follows:

One woman's husband gained enough weight to bring him up to normal in three months.

One boy gained eight pounds in two months and another five, as results of proper feeding.

The planning of meals was found to be much easier for a third woman.

"I can feed my family with some intelligence," said a fourth.

A fifth reported that she had not made so many pickles as usual this fall.

Others had learned the value of whole milk, had learned to how great an extent health depended on food, had found out that minerals came from vegetables and had obtained "a glimpse into a new world and an appetite for more knowledge."

At the final meeting of this class the change in starch which is caused by cooking was demonstrated through the use of microscope.

Keeping Egg Records.

From the Jefferson County Farm Bureau Reporter comes a report of an egg production record covering a period of four months from a flock of seventeen mixed hens that will interest farm women. There are two lessons in this report: First, that good farm hens can be made to pay, and second, that this particular flock can be further improved by culling, as it is quite evident from the report that some of the hens are not doing their share. The record was kept by Mrs. George W. McKean of Wheatridge, and is as follows:

	Jan.	Feb.	Mar.	Apr.	May.
Total production.	139	161	218	228	227
Average per day.	4.5	5.5	7.0	7.6	7.3
Average per hen.	8.0	9.5	13.0	13.5	14.0

Comment of the Farm Bureau Reporter is as follows:

"Note that there was never over an average of 7 or 8 hens laying per day at the best. The daily records show that about every four to six days more hens laid, and about every four days for two months the daily production ran up to 11 eggs and as high as 13, but this was only at three to six day intervals, showing that there were in the flock several hens that laid the same day, but it was usually three to six day intervals. The 17 hens laid in 156 days, and with 60 days in the height of the laying season, 986 eggs, or an average of 58 eggs. Figuring feed and other costs at one cent per day per hen, which is somewhere near right, this flock of hens cost $25.52 to keep and they laid 82 dozen eggs, which, figured at 60 cents per dozen, show $49.20, or a profit of $23.78. Does not this flock look a little better than the average flock, and do not the records show that there is a probability that there are in the flock three to five hens that should have come out as culls? Would not careful culling increase profits?"

How to Make Fruit Sponge.

Here is a recipe for fruit sponge vouched for by the New York home economics workers: 2 tablespoons granulated gelatin, one-third cup cold water, 2 cups clabbered milk, half cup sugar, 1 tablespoonful lemon juice, 1 teaspoon vanilla, 1 cup crushed fruit, 2 egg whites.

Soak the gelatin in the cold water. Dissolve it by setting the cup in a pan of boiling water. Mix the gelatin thoroughly with the clabbered milk, add the sirup and set the mixture in a pan of ice water. When it begins to thicken around the edges, beat it well with a Dover egg-beater, add the vanilla and the fruit, fold in the well-beaten whites of eggs, and turn the mixture at once into a mold. Serve the sponge with whipped cream. Strawberries, rhubarb, pineapple or raspberries may be used for the fruit.—The County Agent.

Kansas Milk Campaign.

Kansas is having a state-wide drink-more-milk campaign. In one county where children were weighed and measured 69 per cent were found to be under weight. In a large number of cases these children were brought up to normal weight by drinking, for a period of 3½ months, one pint of milk a day in addition to their regular diet.

Now, Kansas children don't seem to look any worse than Colorado or Idaho children. Do you think we need to be more careful of the amount of milk in children's diet?—E. D.

Wants Sparrow Information.

An English agriculturist is desirous of information regarding the Sage Sparrow, Bairds' Sparrow and the white-winged Junco. We have a letter from this gentleman who asks that readers of Western Farm Life, familiar with these species of birds, communicate with him. The letter follows:

"I wonder if you can spare room in your valuable columns for this letter from an English agriculturist whose spare time hobby is the story of birds and eggs and who wishes to get in touch with any of your readers who have the same taste.

"We are having a very wet summer here and are getting out hay with great difficulty, but as it is worth about £20 (say $100) per ton we are doing our best.

"The government, through the wage boards, fixes a minimum rate of wages for farm laborers in each county. This is for a 48-hour week and anything over that is to be paid as overtime. But any farmer not located miles away from town cannot hope to get his labor at anything like the minimum. So on many

farms all but the absolutely necessary work gets the go-by.

"Have any of your readers a first-hand acquaintance with the Sage Sparrow and its eggs? Also of Baird's Sparrows and the white-winged Junco? —Kenneth L. Skinner, Brooklands Estate Office, Weybridge, Surrey, England."

Our Fashion Service.

All patterns 12 cents each. Address Western Farm Life, Pattern Department, 1518 Court Place, Denver, Colo.

Read This Before Ordering: Patterns ordered through this magazine are mailed promptly from the factory at Brooklyn, N. Y., and arrive in 10 to 12 days from time order reaches Western Farm Life. Be sure to specify size and number of patterns. Write your name and postoffice address plainly to avoid delay. These patterns are handled at cost, as a service to our women readers. The price of 12 cents includes postage.

3333—Attractive Gown for Slender Figures. Cut in sizes 16, 18 and 20 years. An 18-year size will require 6½ yards of 44-inch material. The width of the skirt at its lower edge is about 1½ yard. The pattern provides a body lining for the waist, over which the outer portions are draped. This style is good for silk cloth or woolen. As here illustrated, figured crepe was used.

3311—Skirt. 3316—Waist. Stylish Afternoon Gown. Cut in sizes, waist 34, 36, 38, 40, 42 and 44 inches bust measure. The skirt is cut in sizes 24, 26, 28, 30, 32 and 34 inches waist measure. Figured crepe and satin are here portrayed. Linen and gingham, taffeta and organdy would also be attractive. Braiding or embroidery on plain material would make a very

effective gown. It will require 6¼ yards of one material, 36 inches wide, for medium size. The skirt measures 1⅞ yard at the foot with plaits extended. This illustration calls for TWO separate patterns.

2932—Dainty Frock for Party. Cut in sizes 6, 8, 10 and 12 years. Size 10 requires 3⅛ yards of 38-inch material. You could make this of dimity, dotted Swiss, voile, handkerchief linen, soft silk, challie or gabardine. Lace or embroidery or hemstitching will form a suitable finish. The sleeve may be in wrist length, finished with a band cuff, or short and loose.

3334—A Simple, Dainty Dress. Cut in sizes 1, 2, 3, 4 and 5 years. A 4-year size will require 2⅝ yards of 27-inch material. Gingham, chambrey, calico, poplin, voile, linen, silk, batiste, and gabardine are good for this style.

2752—Dainty Model for "Party" or "Best" Wear. Cut in sizes 6, 8, 10 and 12 years. It requires 1 yard of lining 27 inches wide for the underwaist, and 3 yards of material for the dress, for an 8-year size. Sleeve may be long or short. Lawn, batiste, crepe, challie, taffeta, messaline, gabardine, nun's veiling, linen and other wash fabrics are nice for this style. Braid, bands of embroidery and lace are suitable for trimming.

3326—A Popular Style. Cut in sizes 1, 2, 3, 4 and 5 years. A 4-year size will require 3¾ yards of 27-inch material. As here illustrated blue repp was used, embroidered in white. One could have this design developed in unbleached muslin with a finish of blanket stitching in brown or red.

3323—A Good Apron. Cut in sizes small, 32—34; medium, 36—38; large, 40—42; extra large, 44—46 inches, bust measure. Figured percale in white and black is here illustrated. One could have gingham, seersucker, lawn, alpaca, drill, or sateen. A medium size will require 4½ yards of 36-inch material.

3178—A Simple House Dress. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38-inch size will require 6 yards of 36-inch material. Striped seersucker, chambrey, gingham, percale, linen, and drill, sateen and flannellette could be used for this style. This sleeve may be finished in close-fitting wrist length or with cuff at elbow length. Width of skirt at lower edge is 2 yards.

$2673 Savings on Clothing.

Savings through clothing work done under auspices of the Lincoln County (Idaho) Farm Bureau this year are reported to have amounted to $2,673. Since January 5, 123 dress forms have been made, of which all but the first 19 have been constructed under direction of volunteer demonstrators. The work was started through a class conducted by Miss Nina Huyck, home demonstration agent, now in Minidoka county. These dress forms represent a saving of $1,476. Since March, six millinery classes have been held, through which savings of $1,197 on millinery have been effected.

Willful Waste.

"Judge," wailed Mrs. Speed, "I simply must have a divorce. My husband is a perfect brute."

"What's he done now?" inquired his Honor.

"Why, the other morning he went and paid the rent, and there's another installment due to the c-c-car next week," wept the betrayed wife.—The American Legion Weekly.

The Farm Bureau

By PROF. T. S. PARSONS,
Laramie, Wyo.

—::—

(Apologies to Walt Mason.)

Last night we had a meetin' down to Henry Jones's home, the county agent called it, and told us all to come. He sed we'd organize our forces an' git in line to grow, by havin' in our district a workin' Farm Bureau. When we got all together, the agent made a talk an' interduced a college Prof., who made a chart with chalk. He diagramed our district, to show where we were at, an' asked us what our problems were, an' if our hogs were fat. Hank Jones spoke up and sed his cows would give scarce any milk, they did not like his poor dry hay an' feeds of that same ilk. The Prof. sed, "Build a silo an' can some juicy corn"; but old Bill Bath sed 'twouldn't do, they'd git the holler horn; an' Bascom sed they'd lose their teeth, but Jones sed, "it's a go, I'll jump right in next season an' build a pit silo." Then Mrs. Brown told how her hens would not lay any eggs, but only eat an' stood around like a lot of wooden pegs. Mrs. Smith then made a speech, an' told how down at home they sent up to the college, an' had a poultry specialist come. He culled her flock an' thinned them out, by ousting boarder hens, so now they git a lot of eggs from smaller poultry pens. So we are goin' to have the man to cull our poultry flocks; our goal will be some purebred fowls, an' better poultry stocks. So one by one the Prof. filled up his chart with our work; we even thought of boys an' girls, for them we cannot shirk. Hank Jones was made a leader, an' Silas Jenkins too; the agent sed he'd come around an' tell us what to do. We've got our program all made up, for work the coming year; we're starting out with clutch held tight, an' runnin' in high gear. We'll all be better farmers as down the line we go, because we've got together with a workin' Farm Bureau.—T. S. Parsons, Extension Agronomist, University of Wyoming.

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of rarest medicinal cod-liver oil, should be given liberally to the boy or girl who may be a source of worry.

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Plan Your Stock Show Advertising

For the **December 15**

—AND—

January 1

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These issues will be in the hands of the Breeders and Livestock Farmers of Colorado and adjacent states immediately preceding the National Western Stock Show — just when they are thinking nothing but purebred stock—the ideal time for getting your story across.

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Our advertising staff will be glad to help you in the preparation of your copy, and to give suggestions about your Stock Show advertising. Just drop them a card today, stating briefly what you have to advertise, and they will write you at once. Address,

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Poultry Book Latest and best yet; 144 pages, 215 beautiful pictures, hatching, rearing, feeding and disease information. Describes busy Poultry Farm handling 63 pure-bred varieties and BABY CHICKS. Tells how to choose fowls, eggs, incubators, sprouters. Mailed for 10 cents. Berry's Poultry Farm, Box 66 Clarinda, Iowa

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PLANS for Poultry Houses. All Styles. 150 Illustrations. Also copy of "The Full Egg Basket." These will surely please you—send 25c. Inland Poultry Journal, Dept. 41. Indianapolis, Ind.

Utility Versus "Points."

One man claims that the hen bred for good looks, for size and shape, a five-point comb or yellow legs, bay eye or mahogany color, cannot lay enough eggs to pay her board bill; he says that no attention being given to fecundity, such a hen cannot form the habit of laying eggs. Another man claims that the mongrel hen, one produced by crossing a number of breeds and varieties, one given no particular attention or bred for no particular purpose, can do nothing toward lifting the mortgage. Neither side has an argument to present, nor proof of his belief or assertion.

So far as we know, no egg laying contest between hens of such opposite characteristics has ever been held, and perhaps if it could be done, the results would show up somewhat similar to a report published by the New Jersey Agricultural Experiment Station.

The station conducted a contest for three years following November 1, 1916. Each entry consisted of ten purebred pullets, hatched between the dates on January 1, 1916, and July 1, 1916. There were one hundred pens, therefore one thousand pullets entered. Only marketable eggs were considered. Eggs weighing less than 1½ ounce each, soft shelled or malformed eggs were not counted.

Of course, the best of care was given, good houses and ample yard room were furnished. The final results we will give in a later article; the thing that we are worrying about and trying to get off our mind just now is the quality of these pullets, as considered from a fancier's standpoint.

Most of the pullets would have been pronounced unworthy of a prize in a poultry show. Only one pen averaged a score of 90 points; one scored 89.48, and one 89.1, while one pen scored only 8.28 points, due to the fact that nine of the ten were disqualified.

The three highest scoring pens were White Leghorns, a variety generally scoring high, having a big handicap over parti-colored birds, or even fowls of the larger breeds. Most of the disqualifications were for stubs on the legs. There were eighty such, while nineteen were disqualified for side sprigs.

The average score was 75.92 points. To win a first prize in a show, a bird must score 90 or better, and if any bird in a pen scores less than 85 no prize may be given. According to such a ruling the average of the thousand pullets entered in this laying contest would not have gone very far. Eleven per cent of the entire number were disqualified and the lighter breeds scored higher than the heavier.

Here is the kernel of the nut we have to offer from this report. An equal number of high and low producing pullets were disqualified; there seems to be no definite correlation between egg production and standard scores; high-scoring birds may produce well or poorly, or low-scoring birds may produce well or poorly; or, birds laying a large number of eggs or only a small number of eggs may score high or low.

There was one pen in which four were disqualified. Of those disqualified, three laid over 200 eggs, while only one of the qualified birds in the pen laid over 200. Of the disqualified birds, 17.7 per cent laid over 200 eggs, while of the birds not qualified 16.4 per cent laid over 200 eggs.

What a loss to the fancier, one who could not tolerate on his place a side sprig, or a stub, or a lopped comb or a pale eye, to have sent to market these twenty birds laying well over 200 eggs each! Meanwhile keeping in his yards twenty others because of their standard qualities, but laying from two hundred down to a dozen or so of eggs. Apparently stubs, side sprigs, etc., do not hurt the egg basket, everything else being equal.

The fancier wants good looks first, but the farmer wants performance first. There is absolutely no good reason why, to a large extent, the two may not be combined, just as it is being done with cows and hogs.—W. E. V.

The Busy County Agent.

Based on figures taken from the reports of the agricultural extension work, the states relations service, United States Department of Agriculture, calculates that the average week's work done by a county agent in the thirty-three northern and western states is about as follows: 24 office calls by farmers; 9 farm visits; 150 miles traveled by auto; 2 addresses at public meetings; 3 agricultural articles prepared for rural papers; 30 individual letters to farmers; 120 circular letters mailed.

From Corral and Pasture

By H. W. HAILEY

Ury of Pine Valley, one of the many big, growthy outstanding cows in the herd of "Shorthorns that Milk" at Pine Valley Dairy & Farms Company's beautiful ranch near Colorado Springs, has just recently finished her year test for the record of merit. She produced in twelve months 12,293.9 pounds of milk and 471.52 pounds of butterfat. Only five Shorthorn cows in the United States completing their year test in 1920 have exceeded this record. She is the daughter of Overbrook Ury 3rd, a famous producing cow who was first in the milking contest at the National Western Stock Show in 1919. According to Seeley G. Rose, manager of the farms, another year will see all of the sixty or more matrons in the herd members of the Record of Merit. Master Sam, the recently imported herd sire, has become well acclimated and is gaining in size and condition every month. Mr. Rose will show a large herd at the National Western Stock Show in January.

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"Business is always good and we are always busy around here," says James J. Gauld, the genial superintendent of the Myron Stratton Home Farms at Colorado Springs, where he raises Herefords, Durocs, Holsteins, Percherons, and mules, on a 10,000-acre ranch at the foot of Cheyenne mountain. The registered Hereford herd comprises thirty-two mature cows and thirteen heifers, with Beau Carlos 133rd, and Donald Fairfax as herd sires. The latter is a grandson of the late Perfection Fairfax. In the range herd there are over 400 females. The Holstein herd which furnishes all the milk, cream and butter for the Stratton Home, is comprised of sixty-seven females with Woodcroft Pontiac Segis Lyons as herd sire. Then there are over 200 purebred Durocs of strong families with Golddust Pathfinder, by I-AM-A-Pathfinder, as senior herd sire. Then there is General B, the Percheron stallion and a group of twenty-eight mares, and last but not least a bunch of big mules—sired by Lord Randolph Jr.—than which there is none better in Missouri. Stratton Farms expect to make their first showing of purebred herds at the National Western Stock Show in January.

o o o

J. W. Brauer of Colorado Springs, one of the pioneer Duroc breeders of the state, will be at the National Western this year with a string of outstanding animals that no doubt will be well in the money. Mr. Brauer has adopted a new plan this year for the raising of Durocs and has "farmed out" on shares a part of his herd to several progressive young farmers who are doing well with their herds. This plan is being followed by a number of breeders with limited pasture facilities and is making purebred men of a large number of progressive young farmers, who for various reasons had hesitated about launching out in the business. Mr. Brauer has a herd of sixty mature sows, and 100 gilts. His herd sires are Colorado's Chief Sensation, Golden Chief, and Grand Pathfinder Jr., a line bred Pathfinder, and a young pig by Orion Cherry King 2nd, which is expected to make an outstanding sire.

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A worthy record for a 3-year-old has just been hung up by Miss Ormsby Pauline Johanna, one of the young matrons in the Columbine herd of Holsteins at the Turkey Creek Farm of Spencer Penrose, Colorado Springs, according to Chas. C. Wilson, the manager there. In seven days she produced 546 pounds of milk and 24.25 pounds of butter. Mr. Wilson believes this to be very close if not a state record for a cow of this age with her second calf. She was sired by Sir Ormsby Banostine Champion, only son of Duchess Skylark Ormsby, who holds the present world's record of 1,500 pounds of butter in one year. Her dam, Pauline Queen Johanna, has a year record of 1,062 pounds of butter and 25,600 pounds of milk. Miss Ormsby is on a year test and in the third month of lactation is producing at over a 1,000 pound rate and barring bad luck or accidents will finish in the class with her dam. The herd of sixty-eight producing females owned by Mr. Penrose is second to none in the state and comprises some of the best known individuals in the west. The plan of the new manager, Mr. Wilson, is to have every female in the herd complete a year test during the next two years, for he believes that he has the blood lines and the individuals to make a wonderful lot of records. A great show bull, Sir Pietertje Ormsby Fobes, will be used in the herd rather extensively this year, as Mr. Penrose has purchased from Sam Carpenter of Oswego, Kan., a half interest in this wonderful animal. He will be shown at the National Western Stock Show and then go from Denver to the Kansas National Show at Wichita. After this trip he will return to Oswego, Kan., for a six months' sojourn. Columbine Piebe Changeling is being used as a junior sire in accordance with their plan of line breeding. The two sires which have been used in the herd during the past three or four years are now offered for sale. They are Winderne Johanna Rue Valdessa and Woodcroft Changeling.

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In the sale of imported Shorthorn cattle held by Wm. Hartnett in Chicago, October 27th, 71 head averaged $1,661.00. Jay & Allan of Boulder, Colo., secured a cow and calf in this sale. They have arrived in Colorado and are very much at home in their new environment. The cow is dark roan, large, deep bodied with remarkable quality and is of the best blood lines to be found. She is a full sister to the grand champion bull at the 1915 Royal show. She has a white bull calf at side 4 months old. He is a straight lined growthy calf with plenty of quality and a very good type that promises to develop into a good herd bull. His sire was bred by Wm. Duthie. Also the sires of both his dam and granddam were bred by that great breed-

er, known as the "king of Shorthorn breeders" throughout Great Britain. Neither Mr. Jay nor Mr. Allan were able to attend the sale, but trusted the judgment of F. W. Harding, secretary of the American Shorthorn Breeders' Association, to select a cow with a bull calf that could be developed into a herd bull to succeed Broadhooks Dale. The addition of this new blood assures advancement in the Shorthorn industry in this state.

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Fully 800 farmers attended the sale on Prewitt Hog Farms at Red Lion, Colo., November 15, and witnessed one of the liveliest hog auctions ever held in northeast Colorado. As evidence of the quality of Poland Chinas kept on the Prewitt Farms it may be mentioned that 1,000 head sold at 3c a pound more than market prices. Buyers came from all parts of Colorado and in addition from western Kansas and Nebraska, and at least one from Iowa. The average for the sale was $85 to $90. The registered sows averaged $65 to $125, while pigs went around $40 on the average, and registered boars at around $100. The great bulk of the offering went to farmers who are starting new herds in the Platte Valley and adjoining dry farming sections of northeastern Colorado. Snook & Leachman were the auctioneers and they handled the sale in their usual lively and effective fashion.

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The rapidly increasing number of good herds of Herefords in the state point toward a not far distant day when Colorado will take her place as one of the foremost states in Herefordom. That the owner of the Ken Caryl ranch near Littleton has started in to raise a topping bunch of the popular white-faces will mean much for the future of the breed in this state. With a foundation stock of about 100 cows from the herds of Warren T. McCray and Painter & Son, and three good bulls, LeRoy Fairfax, a son of the famous Perfection Fairfax; Carlos 146th, and Beau Gay by Gay Lad, they have a nice start, and another year will see them in the show ring with a complete herd. This year a few outstanding calves will be shown at the National Western. • F. J. Smith, the manager, is a young man who knows his cattle and hopes to develop some extra good ones. The ranch with its 12,000 acres of foothill land is well adapted as a breeding ground and a new barn to be built next year will add much to the facilities for fitting show stock. Lakeside, a light gray Percheron stallion, is head of the stud at Ken Caryl.

o o o

George W. Baker, owner of Rolling Acres near Littleton, is one of the many Hereford breeders in the vicinity of Denver who are doing much for western Herefordom. Mr. Baker has for several years been buying a breeding herd with great care and now has as good a string of well-bred cows as one will find in the state. His herd bull, Mischief Mixer, is one of the great sons of Mousel's Beau Mischief and a worthy individual who should get for Mr. Baker some prize-winning calves. Several of the great cows at the ranch are of Gudgell-Simpson breeding, while others are of Perfection Fairfax and Domino families. He is also using in the herd Bonnie Lad 19th, out of a Beau Carlos dam. Several choice young calves from the herd will be shown at the National Western this year and a few will be consigned to the Hereford sale.

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On a very raw cold day with only a small attendance of buyers, the first sale of the Eastern El Paso County Purebred Livestock Association, held at Calhan, Colo., November 4, brought very low prices for the animals offered, but the consignors were regular fellows and said "sell 'em." A lot of Durocs and Poland Chinas, most of them young pigs, brought an average of $30. They were consigned by John R. Miller, Yoder; Roy E. and O. F. Dickson, J. A. Lair, William Drennan, and Mrs. Lorena Spangler, all of Calhan. B. E. Gibson of Peyton sold four Hereford heifers at $81 a head, and C. A. Hillman sold a couple of Shorthorn males. Edward Jennings sold several head of Holsteins. While the first sale could not be called a success, the members of the association are determined to carry on during the year and put on next fall a larger and better offering of stock. The association was organized about a year ago to foster the interest in purebred livestock in the county and it is gratifying to note the energy that the members are putting into their work.

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With the recent purchase of a carload of Milking Shorthorns from the Pine Valley Dairy & Farms Co., of Colorado Springs, Mesa County, Colo., has been listed as one of the sections where dual purpose cattle are making good—so good in fact that the breeders want more of them. The carload consisted of nine mature cows, two young bulls, and a number of heifers, all from the Pine Valley herd, which has been making a wonderful record in milk production. The two young bulls were from Record of Merit dams with strong milk pedigrees and will be of great benefit to the improvement of the cattle in Mesa County. The animals were selected from the herd by L. P. McCann, county agent of Mesa County, and Seeley G. Rose, the manager at Pine Valley. The breeders who will receive animals from this shipment are Adam Swartz & Son, Roy Kisor, Edward Kohls and J. W. Goss, of Fruita; A. O. Schoff & Son and H. L. Rooks, Grand Junction and Fred S. Burns, Cedaredge.

Holmes Sale Makes Record.

Colorado Shorthorns again established a record when J. K. Holmes at his second annual sale, November 22, in Center, beat the top price of the recent Royal sale with a bull calf that brought $1,500. This was an outstanding youngster, Village Knight 919610, sold to Joseph Brunelli & Son, Walsenburg, Colo. The top on females was $1,050, for Roan Victoria 873912, sold to Jay & Allan of Boulder, Colo. Buyers were present from all parts of the state. Mr. Holmes has built up one of the finest herds of the breed in this western country and his sales have an attraction for the breeder as well as the rangeman and farmer, because of the exceptional quality of the offerings.

FARMERS' AND STOCKMEN'S EXCHANGE

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

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BARRED ROCKS—BIG-BONED HUSKY COCKerels, "Thompson Strain," out of grand champion cock at Yuma Poultry Show; clear, distinct barring to the skin; $4 and $5 each, a few extra choice at $7. Also a limited number of choice pullets, $2.50 each. A. N. Waechter & Son, Yuma, Colo.

RHODE ISLAND REDS

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EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

WYANDOTTES.

WHITE WYANDOTTE COCKERELS—TRAPnested stock, $3 and $5. Mrs. Mary M. Wright, Rte. 2, Box 314, Boulder, Colo.

WHITE WYANDOTTE COCKERELS FOR SALE, from $3 to $8 each; a few pullets at $8 each. Mrs. Geo. Wheeler, Otis, Colo.

LANGSHANS.

IMPROVE YOUR FLOCK WITH MY STANDARD bred Black Langshan cockerels, $5 up. O. I. Moon, Fort Morgan, Colo.

SEVERAL VARIETIES.

CHAMPNEY'S POULTRY YARDS—IF IT WEARS feathers we have it, or will get it for you. Write us your wants. 2057 S. Broadway, Denver, Colo.

COLUMBIA HATCHERY—WE CAN SUPPLY you with cockerels and breeding stock, turkeys, ducks and geese; 14 varieties. Prepare now for spring mating and get the best. P. O. Box 1102, Denver, Colo.

ORDALAC STRAIN RED COCKERELS—NONE better; Pearl and White Guineas; Pekin ducks. Champney, 2057 S. Broadway, Denver, Colo.

TURKEYS.

LARGE BOURBON RED TURKEYS; HENS $7, toms $10. Jas. Holman, Granada, Colo.

MAMMOTH BRONZE TURKEYS, CHAMPION strain, vigorous free range stock; toms $10, hens $6. Harry Heath, R. 1, Box 74, Lamar, Colo.

PET STOCK

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BEAUTIFUL PEDIGREED COLLIE PUPS, MALES $25, females $20. Other collie and shepherd pups, males $15, females $7.50; natural heelers. Pictures 10c. R. Ellis, Beaver Crossing, Nebr.

LIVE STOCK

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HOGS

BIG TYPE POLAND CHINA BOARS AND GILTS for sale. Ben F. Sawhill, Seibert, Colo.

FOR SALE — PUREBRED POLAND CHINA spring pigs. W. B. Patrick, Route 6, Denver.

BIG TYPE POLANDS, YOUNG BOARS AND gilts for sale. Write for breeding and particulars. Gad Barney, Haswell, Colo.

FOR SALE—A FEW YOUNG BOARS AND GILTS from registered Big Type Poland China stock; prices reasonable. F. L. Toliver, Ft. Collins, Colo.

BLUE HOGS—LARGE, GROWTHY AND PROlific; everybody likes them. Write for booklet. Mention this paper. The Blue Hog Breeding Co., Wilmington, Mass.

BIG TYPE POLAND CHINAS, CHOICE PIGS, both sexes, three to five months old, best of breeding, priced right; pedigrees furnished. Pinehurst Ranch, C. W. Miller, Prop., Rye, Colo.

FOR SALE—BIG TYPE POLAND CHINA BOARS and gilts; can furnish both sexes for mating, or bred gilts for desired month for farrowing. Correspondence solicited. W. J Peterson, Seibert, Colo.

A FINE DUROC BOAR CHEAP, FOR $75; WILL sell you a registered March boar, sired by 1919 Colo. State Champion, an Orion, whose sire is one of the hundred leading boars of the country. You should not miss this chance. J. N. Caldwell, Littleton, Colo.

DUROC BOARS AND GILTS OF SEPTEMBER farrow, sired by Edgemoor Principal 2nd, litter mate to junior champion at Colorado State Fair. Will ship on approval to all points in Colorado, Wyoming and New Mexico. Real Duroc type at farmer's prices. Joseph Janner, Elbert, Colo.

DUROC JERSEYS, BERKSHIRES—A SPLENdid lot of Duroc Jersey boars for sale, sired by Colo. State Fair grand champion 1919, and out of granddaughters of Great Sensation; also Berkshires from prize-winning stock. C. W. Henry, Greeley, Colo.

REGISTERED BERKSHIRE BOARS, READY FOR service; prices lower for quick sale. Also a few weaned gilts and boars, sired by Epochal Repeater, Junior Champion at National Western Show, 1920. D. S. Davis, 25 S. Grant st., Denver, Colo.

WHY TAKE CHANCES, WHEN WE SHIP YOU our registered Duroc boars, open and bred gilts to your barn yard, before you pay. We sell the big kind that will get the right type of feeders. Orion Cherry King and Defender blood lines. J. O. D. Ranch, Aroya, Colo.

CATTLE.

REGISTERED HEREFORD BULLS—AN EXTRA good load of Anxiety bred yearlings at prices that will make a speculator money; well marked and big-boned out of my big cows. J. O. D. Ranch, Aroya, Colo.

WANTED—DAIRY HERDS, TO CONSUME OUR alfalfa hay; dairy opportunities unexcelled on the Newlands Irrigation Project. Never-failing water supply, great variety of crops; 1920 alfalfa crop, 100,000 tons; ideal climate, good dairy markets; leasing opportunities or feeding contracts available. Address, Newlands Project Alfalfa Association, Fallon, Nevada.

FOR SALE—REGISTERED HOLSTEIN BULL calf, 8 months old; grand champion bull of the Western Slope Fair; his dam made 15.25 lbs. butter in seven days at the age of 2 years and 2 months; his sire is the great Colorado and Minnesota bull, Sir Johanna Bess Segis, whose dam made 1,059 lbs. butter in one year. This calf is well marked and a dandy; price f. o. b. Montrose, $200; first check takes the bull. B. P. Patterson, Montrose, Colo.

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100 REGISTERED SHROPSHIRE EWES. A. M. Plumb Estate, R. F. D. No. 4, Box 47, Greeley, Colo. Phone Red 27R2.

REGISTERED HAMPSHIRE RAMS — THREE yearlings and eight lambs of superior quality; have won at Pueblo and all county fairs where shown; prices reasonable. J. O. D. Ranch, Aroya, Colo.

HORSES.

TWO AND THREE YEAR OLD REGISTERED Percheron stallions for sale at attractive prices. Splendid individuals; satisfaction guaranteed. R. R. Lucore & Sons, Arriba, Colo.

GOATS.

BREEDER OF HEAVY MILKING SAANEN goats. Geo. T. Cramton, 4912 Hooker, Denver, Colo.

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AMBITIOUS MEN—WOMEN, OVER 17 WANTED. U. S. Government positions, $135—$195 month. List positions free. Franklin Institute, Dept. E 134, Rochester, N. Y.

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SUDAN, $7 CWT.; ALFALFA, $10; TIMOTHY, $3.50; other seeds at 50% less than wholesale. Reliable Seed Co., Salina, Kans.

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IF YOU WANT TO SELL OR EXCHANGE YOUR property, write me. John J. Black, 33rd st., Chippewa Falls, Wis.

OKLAHOMA FARMS—WRITE FOR FREE AGRIcultural booklet. Board of Commerce, Shawnee, Oklahoma.

SELL YOUR PROPERTY QUICKLY FOR CASH, no matter where located. Particulars free. Real Estate Salesman Co., Dept. 11, Lincoln, Neb.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale; state cash price, full particulars. D. F. Bush, Minneapolis, Minn.

160 ACRES, 35 MILES EAST OF DENVER, next to irrigation; all fenced, 80 acres broken; good brown loam wheat land; near railroad and school; $45 acre. Ed L. Knight, Owner, 531 S. Pearl st., Denver, Colo.

320 ACRES CANADIAN WHEAT LAND; YIELDS 50 bushels acre; all under cultivation; $4,000 of improvements; only $40 acre; 1921 crop should pay for it; $8,000 cash, balance easy payments. Write for full particulars. Earl Grant, Barons, Alta., Canada.

640 ACRES CANADIAN WHEAT LAND; YIELDS 50 bushels acre; all under cultivation; fenced, some improvements; only $40 acre; 1921 crop should pay for it; $18,600 cash, balance easy payments. Write for full particulars. Gilbert Moir, Barons, Alta., Canada.

HEREFORD AND OTHER FINE CATTLE LANDS or farms that offer best opportunities; eight months' pasturage annually; silage crops; improved or unimproved lands; wonderful mild winter climate. Write for our listings and terms. Railroad Farm Bureau, San Antonio, Texas.

DAIRY FARMS AND LANDS, WHICH OFFER splendid opportunities for dairying, with creamery and market right at your door; also excellent for diversified and other farming; ideal mild, healthful climate, schools, churches, railroads and other advantages. Write for listings, terms, etc. Railroad Land Bureau, San Antonio, Texas.

REAL FARM OPPORTUNITIES IN TEXAS, where farming pays best; best markets, schools, railroads and roads; ideal mild winter climate. Would you like to know of these opportunities? Write us crops you are interested in, livestock you want to raise, acreage you want, whether improved or unimproved, and terms wanted; we can then locate you ideally, where markets are guaranteed. Railroad Co-Operative Farm Bureau, San Antonio, Texas.

IRRIGATED COLORADO FRUIT AND DAIRY farm; 50 acres; 7 acres orchard, balance alfalfa, corn, grain; new modern 6-room brick bungalow; good well; 2 silos; all outbuildings, 20 cows, registered bull, 13 heifers, 6 horses, chickens, bees; complete line farm machinery; 7½ miles from Denver; $25,000; terms. For information write owner, Wm. G. Faulhaber, Route 4, Englewood Station, Denver, Colo.

SAN LUIS VALLEY IRRIGATED FARMS—THE best land in the valley, under a first-class irrigation district; 125 acres, improved, adjoining Federal Aid Highway; 40 acres, improved, adjoining Federal Aid Highway; 40 acres, unimproved, ½ mile from Federal Aid Highway; 80 acres, unimproved, 1 mile from Federal Aid Highway; 20 acres, unimproved, 1 mile from Federal Aid Highway. Every foot can be irrigated and will raise a crop. Look at the crops on the above and adjoining lands and be your own judge. For prices and terms write or see owners. A. A. Salazar & Son, San Luis, Colo.

AGED OWNER SACRIFICES 120 ACRES $3,500, with equipment; delightful location near large town, five minutes to school; fertile lime soil tillage, spring-watered pasturage; estimated 500 cords wood, timber, variety fruit; good house built 1915, new barn; owner to sell quickly includes 3 mules, 6 cattle, 9 hogs, machinery, blacksmith tools, quantity crops, for $3,500, part cash, balance easy terms. Details this and farm in oil section for $3,000, page 89 Strout's Big Illustrated Catalog Farm Bargains 33 States. Copy free. Strout Farm Agency, 831BA, New York Life Bldg., Kansas City, Mo.

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LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

FIR LUMBER, DOORS, MILLWORK, RED CEdar shingles, fence posts, from mills straight to you; send bill for money-saving delivered price. Lansdown, Box 909 M, Everett, Wash.

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OLD HATS MADE NEW. S. M. BELWOOD, 1542 Court place, Denver.

INVENTIONS.

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

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25 CENTS CASH BRINGS YOU SAMPLES, prices, of our Xmas Candies. Western Sales Co., P. O. Box 811, Pocatello, Idaho.

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CHOICE APPLES, FROM PRODUCER TO CONsumers; Jonathan, Ben Davis, Grimes Golden, Mo. Pippin, Keiffer Pears, $2 box, f. o. b. cash with order. F. M. Weaver, R. D. 2, Fruita, Colo.

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VIOLINS WITH COMPLETE OUTFITS FOR SALE on easy monthly payments; five days free trial. Write Miss Bertha Mardiss, Shawnee, Kans.

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PATENTS—BOOKLET FREE. HIGHEST REFERences. Best results. Promptness assured. Send model or drawing for examination and opinion. Watson E. Coleman, Patent Attorney, 624 F st., Washington, D. C.

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WANT THE CHEAPEST, HANDIEST BELT power? Then ask me about my Little Twister Power Transmitter for Ford and Dodge cars. Frank R. Weisgerber, Salina, Kans.

WOOD CUTTING CONTRACTS WANTED.

WILL TAKE CONTRACT TO CUT WOOD— Want big jobs; power saw used. Address E. Gatewood, corner S. Madison and E. Evans, Denver, Colo.

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KODAK FINISHING BY MAIL—ROLL FILMS developed, 10c; one-day service; no delays. Mile High Photo Co., Established 1905, 318 17th st., Denver, Colo.

KODAK PICTURES WELL PRINTED DOUBLE the pleasure you get from them. Mail your Kodak finishing to us. Write for price list and sample prints. Haanstad's Camera Shop, 404 Sixteenth street, Denver, Colo.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

HONEY.

HIGH ALTITUDE HONEY, PURE, THICK, white, finest flavor; 60-lb. can cased $12; two in case $23, f. o. b. Hooper, H. F. Smith, Hooper, Colo.

DELICIOUS NEW HONEY, 10-POUND PAILS $2.50; 60-pound cans, $13.00. You will find this honey pure, clean and nice. A. A. Lyons, Fort Collins, Colo.

"THEBESTO" ROCKY MOUNTAIN HONEY, light colored, thick, fine flavored; per can, five pounds net, postpaid, anywhere west of Ohio river, $1.50. Send remittance with order. The Colorado Honey Producers' Association, Denver, Colo.

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LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

LEATHER TANNING RECIPES—ONE FREE guaranteed. Cheap way, proof furnished. Agents wanted. R. N. Gilley, Carlton, Tex.

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FOR SALE OR TRADE, 12-25 AVERY TRACTOR, Guide & Sanders 5 disk plow, good condition. Crop payments to responsible party. Write to F. J. Shindler, Deer Trail, Colo.

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YOUR CHANCE FOR ADVANCEMENT—WANTed, mechanics and truck drivers. How many times have you seen this kind of an advertisement in the daily papers? Why not let us train you to take one of these highly paid positions? We train you in the practical way on regular automobiles, trucks and tractors, give you the benefit of the most experienced instructors. We have day and night classes, in other words, we do all that other schools do and a little bit more, as we are the oldest and operate the world's largest chain of practical motor schools. Bring us your problems and we will help you. Write or call 1733 Champa st. for free catalogue and information. Do this now. Special rates for short time. Hemphill Bros., State Auto and Tractor School. Denver branch office at 1733 Champa st. Other branches at Portland, Ore.; Tacoma, Wash.; Vancouver, B. C.; Victoria, B. C.; Calgary, Alta.; Winnipeg, Man.; Edmonton, Alta.; Saskatoon, Sask.; Regina, Sask.; Salt Lake City, Utah.

Western Farm Life:

Am enclosing check for $1. We have been subscribers for your paper for some years now and feel that we could not get along without it. Please send the shears as premium.—Mrs. Victor Thompson, Divide, Wyoming.

A Bull Calf

Out of one of our finest cows, and a splendid individual for the low price of

$100.00

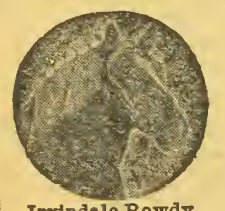
I am not running the herd and he will be sold.

A few blemished cows, choicely bred, and good individuals, are for sale at a very low figure.

M. E. PENROSE,

2050 Humboldt,
DENVER, COLO.

Glendale Stock Farm



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Grand Champion
Belgian Stallion
Chicago, 1917,
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and 1919

Breeders of
BELGIAN HORSES
and
POLLED HEREFORD CATTLE

Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.

CHERRYLAWN FARM
SHORTHORNS — PERCHERONS

See our Percheron entries at the National Western. We will offer a few choice young Mares in the sale.
For Shorthorn Bulls, write
W. A. SERGEANT & SON,
FT. MORGAN, COLO.

WEANLING PIGS in pairs and trios. Unrelated. Sired by our herd boars, 150 to choose from. DALY'S DUROCS. Everything lovely and we have the best lot of fall pigs it has ever been our good fortune to raise, and it is our opinion that the man that stays by the hog in the next few perilous months is the man that will weather the storm that is brewing better than in any line of business.
F. T. DALY, CAMBRIDGE, NEB.

BIG TYPE Poland China HOGS

Of most fashionable breeding. A few choice boars and bred gilts from the first-prize-winning herd of Colorado are for sale.
A. D. McGILLVRAY,
R. F. D. 1. BOULDER, COLO.

OUR 1920 WINNINGS

At six fairs were more than satisfactory.
You'll like the type and quality of our
DUROCS
For breeding stock write
Burt Hart & Sons, Longmont, Colo.

EL PASO HERD OF DUROCS

We have for sale about 70 young boars and gilts sired by Colorado's Chief Sensation, the largest junior yearling boar of any breed ever owner or raised in the west. These choice pigs at three months old are selling for $35 to $50. Write me your wants.
J. W. BRAUER,
22 Lorraine St. Colorado Springs, Colo.

FOR SALE
Reg. Hampshire Rams

from the Allis Herd—
Home of the $700 Blastock Ewe.
Chas. H. Allis, Greenland, Colo.

SCOTCH-TOPPED Shorthorns

OF THE BETTER KIND.

A few good bull calves for sale, from the herd that produced the grand champion female at the Morgan County Fair.
Stewart & Shaw, Wiggins, Colo.

WILLIAM UPP
Livestock Auctioneer

Purebred Hogs a Specialty.
DEER TRAIL, COLO.

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

BEAU ASTER

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.
FULSCHER & KEPLER
Holyoke, Colo.

MILKING SHORTHORNS.

All Cows Officially Tested. 125 in Herd.
Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.
THE BONVUE FARMS CO.,
Stockyards, Denver, Colo.

Straight and Polled Shorthorn Cattle

Valentine's Last X12316 452005 at head of beef herd. Claywood White 427350at head of milk type.
STATE INDUSTRIAL SCHOOL
Golden, Colorado

REGISTERED JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.
Come and inspect, or write me.
H. J. VAUGHN, KIRK, COLO.

FOR SALE—ENTIRE HERD OF
Registered Holsteins

Bred right. Many of them closely related to the cow "Western Ascalon" that sold at the National Sale for $5,500. These cattle will be priced right. Must sell because of failing health. Call or write. W. B. & E. M. DOWNS, ROUTE 1, YUMA, COLO.

FOR SALE.
Sons of Sir Johanna Bess Segis

who combines in the closest degree the blood of **King Segis Pontiac Count** and **Piebe Laura Ollie Homestead King.** Send for their story.
PAHGRE VALLEY RANCH,
MONTROSE, COLO.

We Have Them---Good Ones

Some bred to Royal Type 916924, a first-prize Futurity winner at the National Western Stock Show, Denver, 1920. They are
Shorthorn Cows and Heifers
Also a few Barred Rock Cockerels for sale.
H. F. HARMON, Boulder, Colo.

SCOTCH AND SCOTCH-TOPPED
SHORTHORNS

We now have ready for sale a few yearling and 2-year old bulls and heifers—grandsons and granddaughters of Imported Villager—at prices ranging from $175 to $300.
I. J. NOE & SON, Greenland, Colo.

GREAT BARGAINS—REGISTERED HEREFORDS; DURHAMS (called Shorthorns), and ABERDEEN ANGUS; ages 1, 2, 3 and 4 years old. Prices $125 per head and up. Also Percheron and Belgian Horses from 1 to 6 years old. Prices $125 and up. Write for circular. One head or car lots. Breeding Guarantees with each.
ILLINOIS HORSE & CATTLE CO.,
Good Block, Des Moines, Iowa.

COL. H. C. JENNINGS.
Purebred Livestock
AUCTIONEER

Also conduct Sales of Real Estate.
534 17th St., Kenmark Hotel.
Phone M. 6870 Denver, Colo.

D. S. Polled Herefords

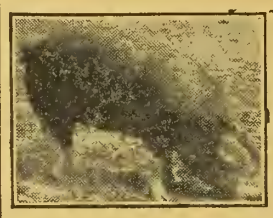
Cows from Polled Plato, herd headed by POLLED SUCCESS A 3rd. Young bulls and heifers for sale.
Smith Livestock Co.
CHIVINGTON, COLO.

A Carload of "Shorthorns That Milk"

Were shipped to Mesa County, Colo., from our herd last month. They were choice ones too, and included two young herd bulls from Record of Merit cows.
We still have a few choice young bulls and heifers for sale—better come see them right away.
Write for 1920 Catalog, giving complete story of the herd.
The Pine Valley Dairy & Farms Co.
Seeley G. Rose, Mgr. Colorado Springs, Colo.

REGISTERED HOLSTEIN SALE

Of a complete high producing herd, many of the animals carrying advance registry. I have sold my ranch and this is a bona-fide Dispersal Sale.
DECEMBER 6th:
DRAFT HORSES, FARM IMPLEMENTS, MACHINERY.
DECEMBER 7th:
65 HEAD OF COLORADO'S BEST HOLSTEINS.
WM. A. PURVIS, Owner, Johnstown, Colo.
Snook & Leachman, Auctioneers.



IF YOU WANT TO MAKE MONEY
Raise Poland China Hogs

and buy your start of C. J. Mather, Longmont, Colo., who always has a few to sell. Sows, gilts, young pigs, that are now weaned and ready to ship. The kind the neighbors buy.
C. J. MATHER, LONGMONT, COLO.

Cloverdale Ranch Hampshire Hogs

Ten Choice Boars sired by ARRIBA BOY 70705, a prize winner at Colorado State Fair, out of Lookout dams. Choicest breeding. Priced worth the money; will please you. The quick-growth, early-maturing kind. Best hog for the farmer and what packers want. Hampshire book free. Write
N. E. Mosher & Son, Hugo, Colo.
Won nine premiums on Hampshires, Colo. State Fair, 1920.

AN OUTSTANDING DAIRY HERD SIRE FOR SALE

Columbine Segis Changeling 303398, calved Jan. 23, 1919, is more white than black, is a first-class individual, being first in his class at the State Fair last year, and second at the Western Stock Show. He was sired by Woodcroft Changeling, a son of Changeling Tidy Abbekerk Wayne, a 44-lb. cow. His dam is Ora Segis De Kol, an A.R.O. daughter of Maplecrest Pontiac Hartog, who has 26 A.R.O. daughters and is a 30-lb. son of Pontiac Aaggie Korndyke, with 61 A.R.O. daughters—13 with records from 30 to 35 lbs.; six above 1,000 lbs. and 21 A.R.O. sons. Price $250. Complete breeding and further information furnished on request.
SPENCER PENROSE, Owner. Box 442, Colorado Springs, Colo. CHAS. WILSON, Mgr.

SENSATION DUROCS

We sold Mountair Sensation at the Colorado State Fair for $1,000. This is the highest price ever paid to a Colorado breeder by another Colorado breeder, for a boar.
We have June, July and September pigs by this great breeding son of Great Sensation and we prefer to sell them young at reasonable prices.
G. E. MORTON & SONS, R. 5, Box 84, Fort Collins, Colorado

BAKER'S HEREFORDS

MISCHIEF MIXER

One of the great sons of Mousel's Beau Mischief, at the head of the herd.
ROLLING ACRES
LITTLETON, COLO.
Geo. W. Baker, Propr.

The Divide Herd
Young Bulls

We are now offering at very reasonable prices some good Shorthorn bulls suitable for small herds. Fall calves and a few yearlings priced for quick sale. Full particulars on application.
THE ALLEN CATTLE CO.,
SHORTHORN BREEDERS,
Colorado Springs, Colorado

ANNOUNCING

Change in name of our herd sire, formerly "King Johanna Cedarside Pontiac," to
"Colorado Count"

One of the finest individual sons of King Segis Pontiac Count, whose 29 tested daughters have broken over 100 world's records. COLORADO COUNT was JUNIOR CHAMPION at the 1920 State Fair and GRAND CHAMPION at the Douglas County Fair. We believe him to be one of the greatest prospects of the breed.
Wallie Registered Holsteins,
4800 SOUTH PENN, DENVER, COLO.
W. G. Foster, Owner.
Home of 23 fine A. R. O. heifers. Bulls from these 2-year-olds for sale. BUY NOW.

MILK RECORDS
Do Not Replace Straight Bates Shorthorn Blood
FOR

Straight Bates Shorthorns are the "foundation source' of the Milking Shorthorns of England and America. The "Old Red Durham Cow" needed no record of merit. Her Bates blood constituted her excellence. We are engaged in reconstructive breeding of the "old red Durham farm cow" by raising Straight Bates Bulls to head farm herds.
THE CARPENTER CATTLE COMPANY
GREELEY, COLO.

Phone Greeley 868 Denver Main 815 Champa 4506

Snook & Leachman
AUCTIONEERS

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WIRE US FOR DATES.
C. W. SNOOK, Greeley, Colo.
ORD L. LEACHMAN, 205 Livestock Exchange, Stock Yards, Denver

FOR SALE
Registered Big Type Poland China Hogs

Have a few good Spring Boars and Gilts at the right price.
J. F. WILSON
Montrose, Colorado.

Campion's Majestic Sunbeam and Beau Mischief Herefords

MAJESTIC SUNBEAM No. 364681. Calved February 25, 1911. Sire—Majestic the 24th No. 293221. Dam—Armour Sunbeam No. 85081. Majestic Sunbeam, grandson Imp. Majestic, one of the best and biggest boned Hereford bulls ever imported to this country.

BRUMMEL MAJESTIC No. 628435. Calved March 20, 1917. Sire—Majestic Sunbeam No. 364681. Dam—Don Amelia 2nd No. 135871. 56¼ per cent Anxiety, 31¼ per cent Imp. North Pole, Lord Wilton Grove the Third. 12½ per cent Imp Majestic.

AMELIA'S BEAU MISCHIEF No. 557094. Calved April 27, 1916. Sire—Beau Mischief the 15th. Dam—Don Amelia 2nd No. 135871. Ninety per cent Anxiety blood. Secretary Kinzer says its almost impossible to write a better pedigree.

Sunbeam Farm,

8 Miles East of Wellington, Colo.

"They're Bred in the Purple"

The best types of Majestic Sunbeam and Beau Mischief Heifers and Bulls for sale.

The Big Bone Registered Poland China Sows and Gilts and Boars for sale at all times, also fullblooded bred gilts. Come and see them. Visitors welcome at "Sunbeam Farm" any time.

A. J. Campion

DENVER, COLORADO.

SHIP TO THE OLD RELIABLE COMMISSION FIRM

The Sigel-Campion Live Stock Commission Co.

And we will get you the High Dollar for your stock. Experienced salesmen in every department.

A. J. CAMPION

Pres. and Gen. Mgr.

EXCHANGE BUILDING
DENVER UNION STOCK YARDS.
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JERSEYS

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I have a number of splendid

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some of them out of Register of Merit dams, some of them extra fine, from babies up to 18 months old, and they have got to go—I need the room. Also some

HEIFERS

and two and three year old heifers, some of them fresh this fall, that are GOING. I simply must have the room. I have 75 head, and I want to cut down to 50, or less.

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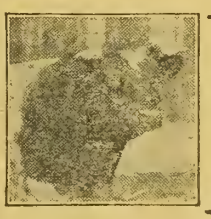

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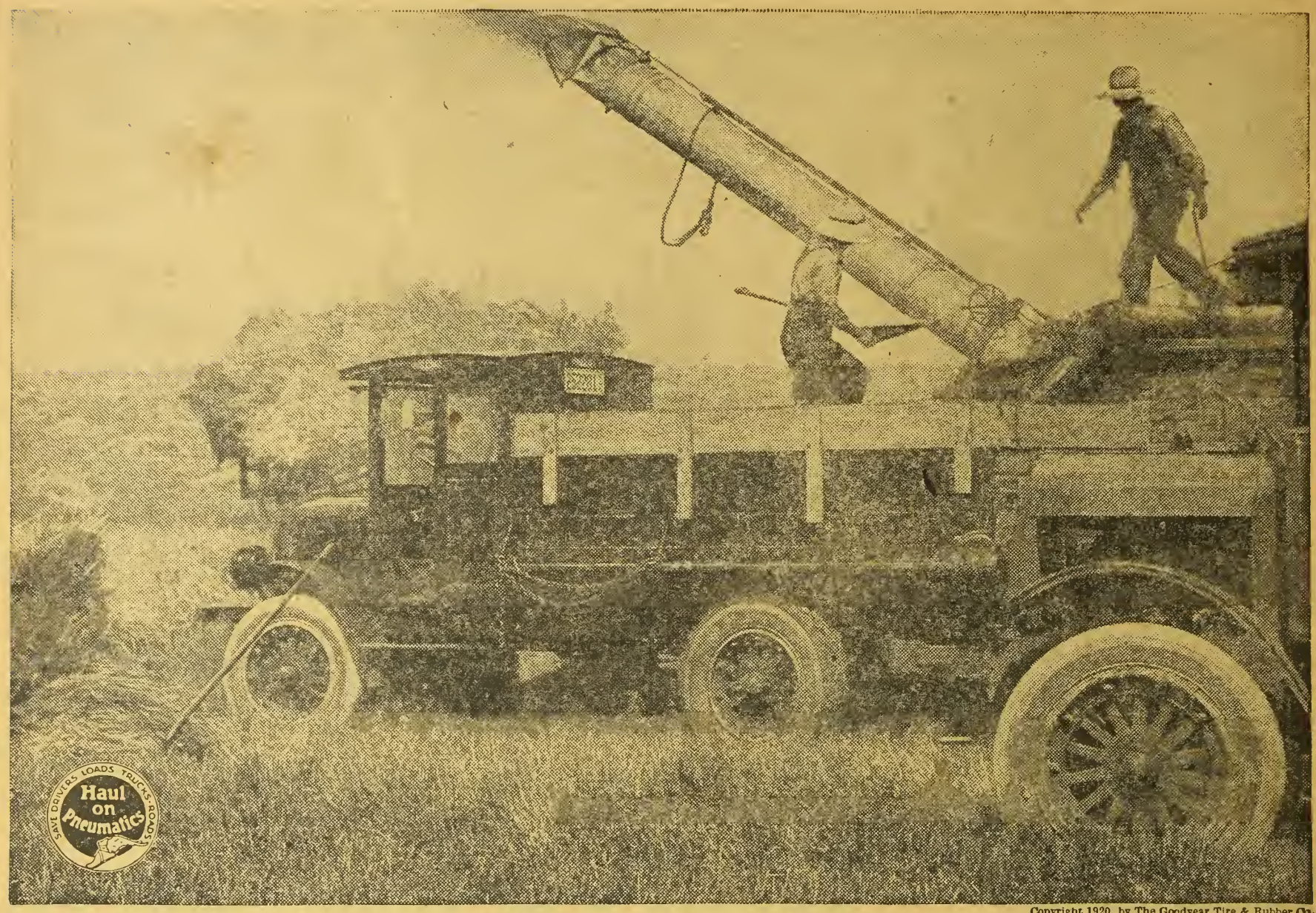

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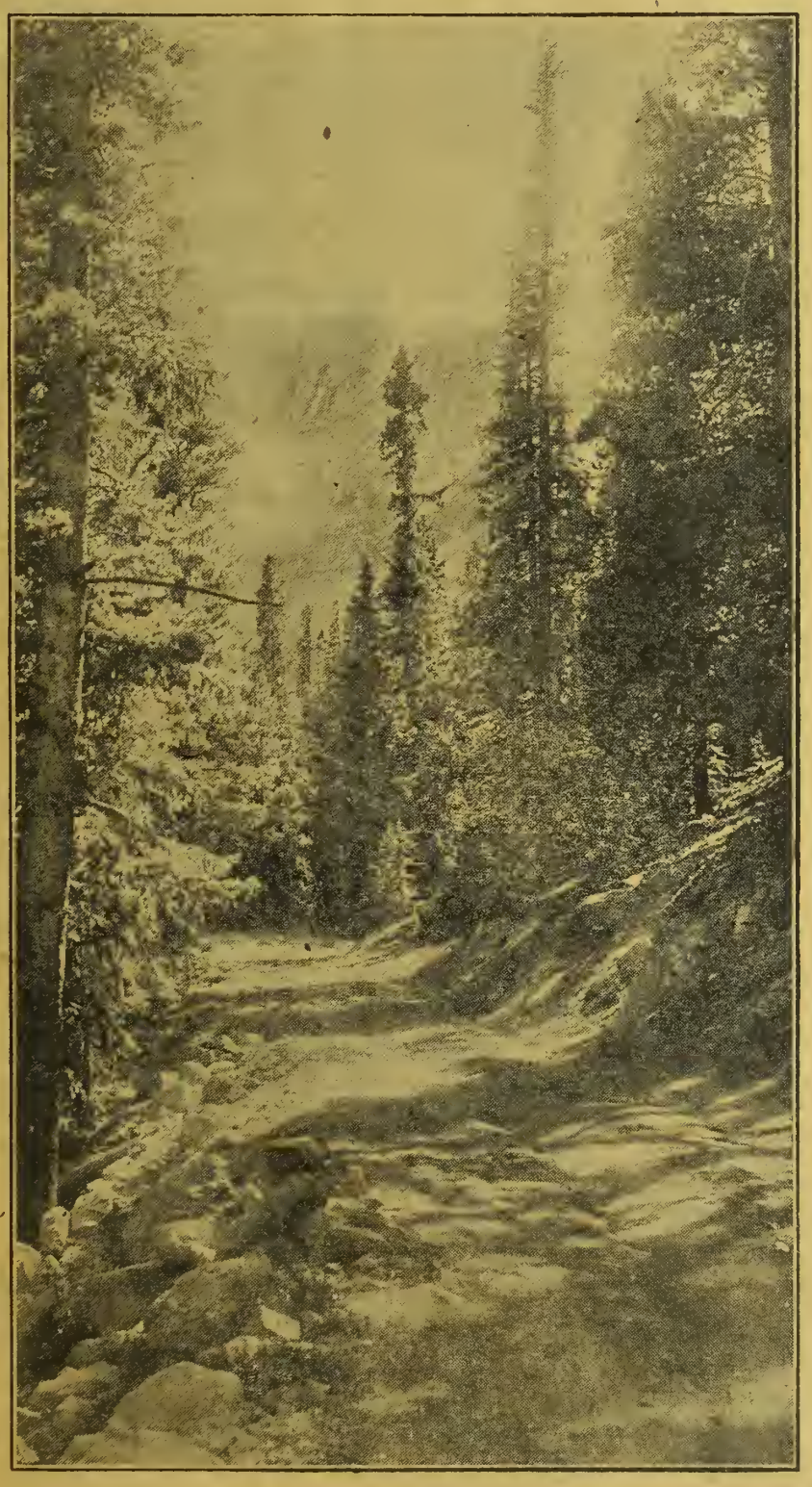
WESTERN Farm Life

Vol. XXII. *Denver, Colorado, December 15, 1920.* *Semi-Monthly*



Greetings:

I send to you no useless gift,
This holy Christmas Day,
But something you may keep awhile
Then gladly give away;
There's Love wrapped up in
tenderness,
And folded all about
Are ribbons of Good Wishes,
That nothing may fall out;
'Tis stamped with Hope and
sealed with Faith
That Friendship will abide,
As long as memories remain
Of Christ and Christmastide!

And They Worshipped Him

And he sent them to Bethlehem, and said, Go and search diligently for the young child; and when ye have found him, bring me word again that I may come and worship him also.

When they had heard the King, they departed; and, lo, the star, which they saw in the East, went before them, till it came and stood over where the young child was.

When they saw the star, they rejoiced with exceeding great joy.

And when they were come into the house, they saw the young child with Mary his mother and fell down and worshipped him; and when they had opened their treasures they presented unto him gifts; gold, and frankincense and myrrh.

And being warned of God in a dream that they should not return to Herod, they departed unto their own country another way.—Matthew 2: 8 to 12.

The Great Western Sugar Company and the Livestock Industry

THE by-products from the beets grown for this Company in 1920 were sufficient, if properly fed in a balanced ration, to finish for market 200,000 head of cattle or 2,000,000 sheep.

THESE by-products are the beet tops, wet pulp, dried pulp and molasses.

BEET tops from one acre, properly handled, are equivalent to one ton alfalfa. Approximately 250,000 tons of alfalfa was the beet-top equivalent of the Company's beet crop in 1920.

THE wet pulp sells for only $1.25 per ton at the Company's factories, although 2½ tons of pulp gives the same gain as one ton of corn silage. The feed value of the pulp by-product was equivalent to 265,000 tons of corn silage.

THE dried pulp, a concentrated feed resembling corn in composition and almost as valuable as a cattle feed, is now available to all livestock men, dairy men and farmers, at a price cheaper than corn.

BEET molasses, rich in carbohydrates, is generally fed in mixture with pulp, alfalfa, cottonseed, bran and oats. It is a fine cold-weather feed, improves the appetite of feeding stock and increases milk production. All classes of animals can be made to eat large amounts of straw if molasses is mixed with it.

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GREATER development of the beet sugar industry, larger acreage of beets and more beets per acre, are therefore important to the livestock industry.

The Great Western Sugar Co.

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SUGAR BUILDING
DENVER, COLO.

Colorado Breeders at the Pacific International Show.

H. A. LINDGREN.

The various livestock expositions held throughout the country during the year are of vital importance to the industry. In reality they are the climax, so to speak, of the animal husbandry development for the year. The leading breeders are coming more and more to look upon them as such. They carefully select their outstanding individuals as to type and groom them to compete with the best individuals in other herds. The value of these animals is based to a certain degree on the winnings they are able to take in competition before qualified judges in the show ring.

There are many of these shows held each fall and winter, all of which carry a great deal of importance to their respective localities.

Among the more recent shows that have become noted, was the tenth annual Pacific International Livestock Exposition held in Portland, Oregon. This show, though still in its infancy, means a great deal to the livestock development in the west. In Colorado we have come to appreciate the fact that we have in the National Western Show at Denver one of the most important shows of its kind in the world. However, we must not fool ourselves into believing that it is the only western show, because the people out at Portland have this year surprised the world with a show which is hard to duplicate in any man's country. There were 800 dairy cattle, 700 beef cattle, 500 hogs, 400 sheep and goats and 150 horses entered in the show.

It is hard to say which division was the strongest, as all of it was good. One division where the Denver show is better is in the Hereford cattle section, although the competition was keen at Portland between such herds as A. B. Cook of Montana, Herbert Chandler of Baker, Ore., and Henry Thiessen of Stillwater, Idaho. The Shorthorn show, on the other hand, was exceptional in every way. The animals in the beef division carried the blocky conformation, were low set and were well covered with flesh. It was here that Colorado and Utah breeders were represented by Maxwell Miller of Steamboat Springs, Allen Cattle Company of Colorado Springs, and the Seeley herd of Mt. Pleasant, Utah.

Princely Stamp, the Colorado bull owned by Maxwell-Miller, was first in his class and was a keen contender for the senior championship against Gainford Guardian, owned by Frank Brown of Carlton, Ore., the breeder who will be remembered as the Shorthorn judge at Denver about the year 1916. Other winnings made by Maxwell-Miller were as follows:

Ninth on senior yearling bull; eighth on junior yearling bull; fourth on senior bull calf; seventh and twelfth on junior bull calf; first on aged cow, Sultan's Graceful; fourth on junior yearling heifer; first on senior heifer calf with Maxmill Susan; twelfth in a class of 35 junior heifer calves; fourth on young herd; fifth on calf herd; second on cow with calf at side, with Cloverleaf Lovely 2nd. She was shown in this class against Little Sweetheart, owned by T. S. Glide of California. This cow was grand champion of the show at Portland and also at the 1919 International at Chicago.

The Allen Cattle Company won sixth on junior yearling bull; seventh and thirteenth on senor bull calf; twelfth on junior bull calf; fourth on aged cow; sixth and eighth on senior yearling heifer and second and fifth on senior heifer calf; fifth on young herd and third on calf herd.

John Seeley & Son of Mt. Pleasant, Utah, had a wonderful herd and were strong in winnings. They captured a first on junior yearling bull, Augustus Champion; second on senior bull calf; second and third on junior bull calf; second on aged cow; second on 2-year-old heifer; fourth on senior yearling heifer; eighth on junior yearling heifer; third and seventh on junior heifer calf; fourth on aged herd; second on young herd; fourth on calf herd; first on two animals either sex, produce of one cow; second on get of sire, and third on cow with calf at side.

In the Hereford division, Henry Thiessen of Idaho was in the money regularly. However, the Cook herd of Montana carried away most of the first honors and all the championships.

The grand champion Hereford bull was Panama 81st and the grand champion female was Lady Joy, both from Cook's herd.

In the Milking Shorthorn show the competition was keen and the ribbons were tied by C. H. Hinman of Denver.

The dairy show was probably second to none ever held in the country. The conformation of the individuals shown was all that could be hoped for. In one class there were 134 animals shown. When ribbons were tied there was great applause from the spectators, which goes to show the keen interest in the industry. In the Holstein grand championship, Matador Segis Walker 6th was the winner, owned by L. J. Simpson, North Bend, Ore. The grand champion Holstein cow was Mutual Clothilde Segis Walker, owned by Carnation Farms.

Just a word about the management of the show is now in order. The exposition is owned and operated by the livestock men of the Northwest. Practically every stockman has a share in it. The state of Oregon appropriates $30,000 yearly toward its support. O. M. Plummer of Portland is the secretary and manager, and its great success is due in a large way to his personal and undivided attention to the details.

The present quarters of the show were built last year and although the idea was to build large enough to take care of several years to come, it was necessary this year to house a large part of the stock in tents. Upon entering the main arena one has easy access to the entire show without leaving the building. This makes it pleasant and comfortable as well as extremely convenient in handling the crowd and showing the stock. When the judging is completed a new catalog is issued showing the official awards. This is a very commendable feature and is worth a great deal to the exhibitor and student of livestock development.

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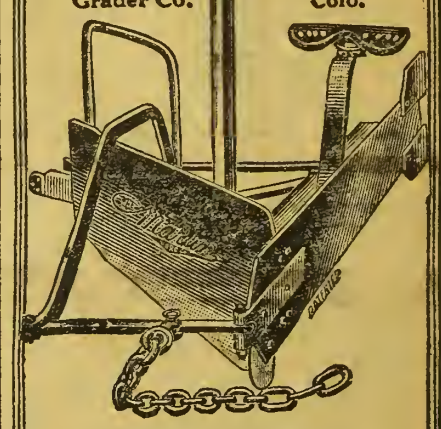

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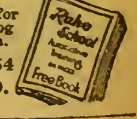

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Western Farm Life

A Western Magazine for Western Farmers and Stockmen

VOLUME XXII. DENVER, COLORADO, DECEMBER 15, 1920. No. 24.

Cows Lift Mortgage, Build Home, Barn and Silo

RAILROADER FINDS HEALTH AND PROSPERITY ON PLAINS FARM

H. E. VANDERLIP

This is Sherman Dye in his patch of giant sunflowers grown for silage.

HOW much capital does the homesteader on the Eastern Colorado plains need in order to start with some chance of success?"

If someone had asked Sherman Dye that question when he was railroading on the D. & R. G. out of Salida ten years ago, his answer undoubtedly would have been, "Oh, a couple of thousand dollars or so." As he did not have that much capital he hesitated about taking the step that the demands of his health made necesary. But the time came when he had to make the choice and he decided to go ahead without capital. He was just $4.50 this side of being "broke" when he went to farming four miles from Strasburg, in Arapahoe county. Necessity forced him to go against his own judgment. It was either a complete breakdown in health at his old job on the railroad, or pioneering on a homestead with a mortgage to start on.

Desirable homesteads had all been taken up in that section, but he found a man who was willing to relinquish his right on a good 160 for $350. That's a mighty small sum when you stack it up against a quarter section of level plains land, ready for the plow, but it loomed as big as a millionaire's bank roll to the man who didn't have it. Four dollars and fifty cents isn't much to jingle in your jeans when you want to make up your mind to buy a farm. Would somebody advance him the money on a homestead? There was a friend in Denver who might stake him, so Mr. Dye talked it over with his wife and they decided to ask for the loan. They got it, and executed a mortgage with the land as security for the debt.

The first thing was to provide a place to live. In town that would have meant a four or five room cottage with all modern improvements, but on the homestead it had to be only a sufficient shelter to provide against extremes of heat and cold. An eight by ten shack built with Dye's own hands became the dwelling place which still stands today adjoining and in contrast to the neat cottage illustrated on this page. Making a home on the plains may be hard work, but when one sees the fruits of his labor multiplying each season, the task becomes worth while. The little shack housed a contented family, but not that type of contentment that seeks only to get by. It was contentment mixed with energy and ambition.

Sherman Dye had come west from Linn county, Iowa, in the fall of 1907, on the advice of a physician. Outdoor labor was the tonic prescribed; that and Colorado's health-giving ozone. There was ample opportunity to imbibe fresh air and no end of hard outdoor labor, but the prescription did not pall, because Dye was working with a definite end in view. First there was that mortgage which seemed big the first season, but has long since been wiped out. Then there was the old dream of a well stocked, prosperous farm—the kind Dye was familiar with in Iowa, and the kind that he saw being built up on the surrounding prairie. Wheat looked like a bountiful crop that made some men rich—some years—but somehow Mr. Dye couldn't get away from the thought that it was more economical to devote the principal acreage to forage crops, keep back some of the land in prairie pasture and feed his crops to milk stock. Then he would have milk or cream to sell and that money, coming in regularly, plus the crops that he would grow for the family food—that is garden, chickens and pigs—would see them through.

His first investment in livestock amounted to $62 of borrowed money with which he bought Beauty, a grade Shorthorn of milking strain. Mr. Dye dates his success on the homestead to this purchase. It was, so he says, the luckiest stroke of his experience. As a matter of fact it was not luck at all, but the result of logically figuring out the best program for the plains country, where the farmer relies on a rather scant natural rainfall and he must make every move count. True, some believe they can get there more quickly by the wheat route, but they fail to consider what is best for the land in the long run and best for the farmer who wants to stay with the game.

Beauty began to do business for Sherman Dye from the first day on the farm. She proved to have good milking qualities. Her first calf sold as beef as a 2-year-old for $72, which was ten dollars more than the mother cost, and Beauty had been paying for herself right along in milk. Gradually the herd was enlarged until the cream money became a considerable item. In the meantime crops were fairly good; there was plenty of feed for the milk stock and for the young stuff growing into beef.

There seemed to be considerable barn room, lots of feed stacks, but the little shack for a home was still there. So in 1914 the milk money having become a considerable item and other cash crops doing well, a modern cottage supplanted the old cabin. Two years later a new barn took the place of the small buildings that had housed the stock, and to top it all off and make dairying more economical, a 75-ton silo was built in 1916. Today Mr. Dye has one of the best improved farms in the Strasburg community.

He is a firm believer in dairy farming for the dry land sections. At the time this was written he was milking 14 cows which were bringing in nearly $200 a month. Last August at the Strasburg fair he won a $5 cash prize offered by the Capitol Hill Creamery of Denver to the Strasburg farmer selling the greatest number of pounds of butterfat in one month.

Beauty, the foundation cow, is still on the job. In 1919 at the Strasburg fair she won first prize in the milking class and the prize was a yearling Holstein heifer, which is now part of the producing herd. Today Mr. Dye has 41 head of stock, 7 head of horses, one purebred Mammoth jack, two purebred Poland China sows with 14 purebred pigs and a good start in purebred cattle. He is active in community life, takes part in the fairs and farm meetings and in getting back his health has become a prosperous farmer.

Sherman Dye's barn and 75-ton stave silo.

The new home of Homesteader Dye and the old cabin adjoining.

Can dairy farming be carried on successfully on the dry lands, without the purchase of concentrated feedstuffs, like cottonseed cake, linseed meal, or bran? In other words, can the plains farmer keep up a milking herd on home-grown feeds? Mr. Dye says he is doing it. His crops the past season were corn, cane, giant sunflowers and wheat. Corn and cane are used for silage and roughage. He feeds about 60 pounds of ensilage a day per cow and all the cane and corn fodder the cows can eat. Dry land grown corn does not yield as heavily in stalk and leaves as it does under irrigation, but the plant is heavy in grain if the right variety is selected, and that makes a rich ensilage.

Supplementing these crops there is rye pasture which Mr. Dye says he considers the best that a dry land farmer can have. He also reserves twelve acres in prairie grass for summer use of his milk stock.

Wheat follows corn in the rotation and the ground is plowed as deeply as four horses can go with a 14-inch sulky plow—usually 7 to 8 inches.

How do the yields run? In answer to that question he said corn will make from 15 to 30 bushels; wheat has gone as low as three and up to 18 bushels for him, and cane makes 3 to 5 tons of forage to the acre. He says it pays to summer fallow for wheat, but he is not fixed to do it; it would take more land. Having tackled farming under plains conditions without previous experience and coming to the job from railroad work, Mr. Dye ought to be a good judge of the drawbacks and the limiting factors. He says the only drawback is scant moisture and that can be overcome by good farming.

His story is one of a thousand that could be told of men who have built up good farms out of the grass on the plains, and he isn't the type that can be discouraged by temporary depression in prices, because his operations are based on livestock, which utilizes most of the crops grown, and gives the farmer a chance to maintain fertility through the application of manure. His farmstead is visible evidence that the cow is the foundation of prosperity on the plains.

Potato production is more evenly distributed in the United States than generally supposed. In the average of four years 1916-1919, the North Atlantic states produced 28 per cent of the crop, the North Central states east of the Mississippi river 22 per cent, those west of that river 18½ per cent, the Rocky Mountain and Pacific States 16 per cent, the South Atlantic states 10 per cent, and the South Central states 6 per cent.

Death of Lambs Not Due to Silage Fed to Ewes

GLOVER'S OPINION IS THAT LOSSES WERE CAUSED BY PNEUMONIA

LOSSES of lambs running as high as 30 to 40 a day on the ranch of R. W. Walker at Mancos, Colo., last spring aroused a considerable discussion in that section concerning the use of silage for feeding the ewes. These losses were at first attributed to silage fed to the mothers, but full investigation indicates that they were due to other causes, probably pneumonia. A report from G. P Newsom, county agent of Montezuma county, states that Mr. Walker tried silage for his sheep two seasons and then abandoned it on account of lamb losses. He has 2,600 acres of land under the Summit reservoir system and the most extensive improvements in the way of hay and sheep sheds in Montezuma county. During his second season with ensilage his son, who is a student at the Oregon Agricultural College, was at home for the year and he applied his agricultural training in an effort to get good results from silage for lambs.

The county agent also was called in frequently. Losses, however, continued to be heavy and on one occasion when the lambs were dying at the rate of 30 to 40 a day, a veterinarian accompanied the county agent and pronounced the trouble due to silage poisoning.

Samples were thereupon taken from the top, bottom and middle of the vertical layer that was exposed when feeding from the end of a trench silo and sent to the Agricultural College at Ft. Collins. The report made was to the effect that no evidence of poison could be found in the silage.

The silage was fed from a trench 56 feet long and 16 feet wide. This is covered by a shed for its entire length. The cut corn was put in to a depth of 20 feet and the silage was apparently of good quality. While this type of silo is not recommended by the county agent, there are six in Montezuma county and feeders report satisfactory results as to quality of the ensilage. During Mr. Walker's second year he covered his silage with roofing paper to prevent spoiling from surface exposure.

Following is a copy of the county agent's record concerning the Walker sheep:

"Trip to R. E. Walker's ranch in response to a call relative to losses of lambs, whose mothers were being fed silage, hay and grain, revealed that the ewes had been fed from the bottom and top of a layer from a trench silo when the losses occurred. Almost immediately on the quitting of the feeding of silage the deaths stopped. Dr. Pruner accompanied the county agent and decided from post mortem examinations that the death of the lambs was due to a toxic poisoning and attributed the losses to the silage. This silage had not developed a proper fermentation as it was cold. The silage from the same silo was hot or rather warm last year but did not give the desired results. Neither has this been true before the losses occurred this year. No other losses or dissatisfaction have been reported this year or last. Fully one-third of the silage in Walker's silo was lost last year from a lack of sufficient tramping. This was done in the present case. The county agent took a sample of this silage from the top and bottom of the silage wall. These samples were sent to C. A. C. for analysis."

Mr. Newsom further states that most of the grain ration was fed to ewes whose lambs did not die. Mr. Walker put in the silo to save the feeding of grain, but rather than add grain to the silage he went back to the grain and hay ration. He had always been successful with that, but was looking for a cheaper feed.

Dr. Glover's Statement.

The report of Dr. Geo. H. Glover, head of veterinary department at Colorado Agricultural College, on this case is as follows:

"A mere coincidence has been responsible for many mistakes. That ensilage under conditions of quality or quantity may at times be injurious, there can be no question, but as for ensilage causing pneumonia I am obliged to take issue. Ensilage when not normally cured may develop bacteriol poisons, and under any condition the top layer may become moldy and be injurious. Graham in his work in Kentucky isolated the bacillus botulinus from two samples of ensilage, but in botulism the lungs are not involved. These sheep were apparently affected with infectious pneumonia and the micro-organisms responsible for the same are not developed in, nor transmitted through the medium of ensilage.

"Infectious pneumonia is quite common in sheep and is especially liable to be associated with hemorrhagic septicemia. Among the post mortem findings, in case of hemorrhagic septicemia, pneumonia and hemorrhages throughout the body, are most conspicuous and most uniformly present. Infections like this are liable to stay over from year to year in the feed yards.

"From the report it appears that the ewes were not affected, but that their lambs died. This is a most unusual circumstance when we undertake to attribute the death of lambs to the feeding of ensilage to their mothers. It is not presumed that pneumonia can be transmitted in this way. The probabilities are that the lambs died of what Hutyra and Marek describe as 'Infectious Pneumonia of Young Animals.' If it had been hemorrhagic septicemia we should have expected to see some of the older animals affected.

"Ensilage is splendid feed, but it should not constitute too large a proportion of the ration. When it fails to cure properly it does not necessarily become poisonous and there is no evidence that it ever does. Moldy or decayed food is always injurious to animals that eat it, and some of the injurious qualities might be transmitted through the milk, but would not cause pneumonia. The mold that grows on the top layer of ensilage is liable to be very fatal especially to horses. Pneumonia is not one of the conditions ordinarily of mold poisoning. The lambs dying of pneumonia, and feeding ensilage, is I presume a mere coincidence. I certainly would not discontinue feeding ensilage to sheep because of this incident. Further investigation might of course throw more light on the subject, but in face of the facts as given, the conclusions reached, it seems to me, are inevitable."

An Indiana Experiment.

A three-year experiment was conducted at Purdue University, Indiana, with two lots of ewes, one lot being fed silage along with hay and grain and the other lot hay and more grain, but no silage. The silage ration was limited the first year, increased to 4 pounds the second year, and the third year the ewes were given all they could clean up, which was practically 4.6 pounds. Even with this amount no harmful results were observed either in the ewes or the lambs.

The experiment showed that the general thrift and appetite of the silage ewes was superior to that of the lots fed hay and grain alone. The former made each year a larger gain over winter than did those on dry feed. The latter averaged for the three years a gain of 6 pounds, while the silage ewes gained 13.75 pounds, or more than twice as much. Yet the Station Bulletin states definitely that this gain was not mere fat like corn feeding will produce, but that the ewes were in good condition to produce strong, vigorous lambs. It was a noticeable fact that "right straight through the whole three years the lambs from the ewes having the succulent feed, i. e., silage, averaged nearly 10 per cent larger at birth. As to the cost of feed, the ration including silage proved the more economical, while more satisfactory results were obtained. The lambs from these two lots of ewes were all fed out for an early market, and those from each lot did equally well, gaining nearly half a pound per day until they were sold."

Prof. King says that the same station has also "tested the value of corn silage for fattening lambs and found that the lambs were very easily kept on feed, made as rapid gains and finished as well as lambs fed rations not containing silage. The average of three trials at that station showed that there was an average reduction in cost of gain of 61 cents a hundred pounds."

William Foy, of Foy & Townsend, Sycamore, Ill., probably the most extensive silage feeders in the world, formerly fed 20,000 sheep and lambs a year on his 1,400-acre farm. He made silage his principal feed and used thousands of tons. Even during the winter of 1910-11, so disastrous in mutton feeding operations, his stock actually paid out. Foy said: "The use of silage that winter averted a loss of approximately $1 per head on the entire output of our plant; in other words, it earned us that much money. * * * You cannot feed hay to sheep or cattle at $15 to $17 a ton. Even if it were possible, that policy would be questionable when a ton of silage produces as many pounds of gain as a ton of hay and costs us $3 to $4. Weight for weight I prefer silage, as it is more palatable."

Codling Moth Threatens Ruin of Apple Orchards

SITUATION IN THE GRAND VALLEY DEMANDS DRASTIC ACTION

ALFRED M. WILSON, Manzana Orchard, Clifton, Colo.

THE codling moth infestation in the Grand Valley has created a situation that is simply appalling. The situation in 1919 was bad enough, but the situation this year has been even worse; and if the growers continue to fight the codling moth in the haphazard, happy-go-lucky way in which so many of them in the past have done, I venture the statement that there will be no commercial fruit in the Grand Valley in 1921, that is, no fruit that can be marketed and sold in competition with boxed apples from districts in which the codling moth is under control. Do I put the matter too strongly? No, it seems to me, in view of the following facts based upon the experiences of the growers and shippers this present year:

(1) Some growers lost their entire crop, were not able to realize enough from the sale of their apples, including their cider apples, to pay their spray bills.

(2) Many, many growers lost from $2,000 to $5,000.

(3) Even the pest inspector, who for two years approximately has been going to and fro in the valley, telling the growers what to do, how to do it, and when to do it, out of 500 boxes was able to salvage only 200 boxes.

(4) The Grand Junction Fruit Growers' Association states that the apples handled by them ran approximately as follows: Extra fancy, 10 per cent; fancy, 20 per cent; C-grade, 70 per cent. Even that percentage of extra fancy and fancy is undoubtedly too high for the entire valley.

(5) Even some cider apples, culls from the packing shed, had to be sorted and culled out.

The conclusion to which I have come, based upon the above facts, that if the growers in the Grand Valley continue to spray and care for their orchards as they have done in the past, there will be no commercial fruit in the valley in 1921, is indorsed by J. M. Silcox, manager of the Grand Junction Fruit Growers' Association; M. B. Bruton, manager of the Western Slope Fruit Growers' Association, and by H. B. Younger, manager of the Palisade Fruit Exchange.

The loss in morale, however, is greater even than the loss in dollars and cents. The growers are discouraged. They feel that they are playing a losing game. They say, "What's the use? The cards are stacked against us. We have no chance to win. Why not pull out our trees and go into general farming?"

They think they have done their best. They have not, but as long as they think they have and yet have nothing to show for their expenditure of time and money, the effect upon their morale is just the same as if they had done all that they should have done individually and in loyal co-operation with their fellow growers, and yet lost out.

The situation is indeed critical, but not necessarily hopeless. The first thing to do is to get a new spirit into the growers, a spirit of faith and courage. To do this the growers must be led to realize that they can exterminate the codling moths if they are willing to pay the price. The growers in the Okanagan Valley, British Columbia, exterminated the codling moth. Practically the same result has been reached by the coding moth extermination campaign carried on by the growers, under the direction of District Inspector Darlington, in Sunnyland, a 1,400 acre district near Wenatchee. What the growers in British Columbia have done, what the growers in the Wenatchee district have done, the growers in the Grand Valley can do.

There are, however, two classes of growers who are not so much discouraged as contented. The mental attitude of these growers may be represented by "as it ever has been and is now and ever shall be." They accept the codling moth as a permanent institution, a pest to be combatted but not to be gotten rid of. The one class is represented by those who have this season lost their crop in part, if not in whole. The second, by those who this season have had fairly clean apples. According to these two classes of growers, nothing can be done in the way of combatting the codling moth, that has not already been done. Speak to them about what has been done elsewhere in exterminating the codling moth and they will poohpooh the matter and counter by saying that the reports of what has been done in the Okanagan Valley in British Columbia and in Sunnyland in the Wanatchee district, Washington, are exaggerated and that even if the growers in those two districts have done what they claim to have done in the way of exterminating the codling moth, the growers in the Grand Valley can not hope to do what these growers have, due to the fact that the conditions here in the valley are so radically different.

It will be difficult to get these growers to enter wholeheartedly and loyally into a campaign for the complete extermination of the codling moth; and yet if such a campaign is to be a success, the hearty co-operation of these two classes of growers must be secured. I believe, however, that if the matter is presented to them intelligently by men in whose judgment they have confidence, most, if not all of them, will in a short time, be found on the firing line, fighting loyally with their fellow growers for the complete eradication of the codling moth; in a word, to make the Grand Valley safe for the growing of clean, high-grade apples and pears.

Subsequent articles to be published from time to time during the next few months will take up methods of fighting the codling moth in detail.—Editor.

Next!

"Yes, sir," said the big Irishman, reminiscently, "I should say I was personally acquainted with General Pershing. I was lyin' back of the breastworks pumpin' lead into the Jerries one day when I heard the chuggin' of a big car. Then came the voice sayin', 'Hi, you there, with the deadly aim, what's your name?'

"'Hogan, sir,' says I, recognizing Pershing.

"What's your first name?"

"'Pat, sir.'

"'Well, Pat, you better go home; you're killin' too many men. It's slaughter.'

"'Very good, General,' says I.

"'And by the way, Pat, don't call me General; call me John.'"—The American Legion Weekly.

Certified Potato Seed Production in Wyoming

NIOBRARA COUNTY CLUB BOY FIRST TO GET HIS CERTIFICATE

T. S. PARSONS.

Edward Blackmore and his bushel of Certified Irish Cobblers.

EDWARD Blackmore received the first certified seed potato certificate issued in Niobrara county and also the first one in the state of Wyoming. A number of farmers in Niobrara and Laramie counties raised certified seed potatoes this year, but at the time of the tuber inspection the potatoes were not graded or sacked. Therefore the certificates could not be issued until these requirements were met. Edward had his potatoes well graded and was ready for business when the inspector arrived.

The potatoes were of the Irish Cobbler variety and were grown in the Boys' Club competition, and Edward also carried off the honors as Potato Club champion of Niobrara county this year. This along with the first certificate for certified seed in the county and state are great honors for a farm boy. But he is not alone. It runs in the family. His brother is County Pig Club champion this year. The boys are interested in their work and will stay on the farm. The boys say they have just as much fun as any of the boys in town and nobody ever saw any good potatoes grown in town anyhow, and the city ordinances wouldn't allow them to keep a pig.

The club rules require a letter from each member describing how he raised his crop. Here is a copy of Edward's letter:

"In the fall of 1919 when my brother and I were picking up my father's potatoes we planned to buy four bushels of certified seed potatoes.

"We talked it over with our father and he said it was all right, so we ordered our potatoes with our father's. He said it would be all right to pay six dollars in the fall. When spring came my brother did not want his, so he let my father have them.

"When my potatoes came I surely was glad. I cut them up with one eye in a piece and cut the stem end in two.

"The potato came from the country of Peru. When the Spaniards conquered Peru they brought it from there. I plowed the ground and then I planted my potatoes. I dragged them before they came up. I cultivated them twice and hoed them once.

"I did not have any insects. The Blackleg attacked my potatoes, so I went through the field and took the diseased ones out. After I dug my potatoes I sorted them and sacked the seed potatoes by themselves.

"I did not have an exhibit this year. I expect to plant an acre next year and will try to raise better potatoes than I did this year, as I am very interested in the potato business."

It is difficult to estimate the good that is being accomplished by the Boys' and Girls' club work. This work affords an outlet for the activities of the boys and girls who wish to become demonstrators of better methods of farming, and is encouraging them to become actively interested in the practical side of farm problems. It also teaches business methods, and creates a wholesome co-operation between all members of the family. It also furnishes to teachers and leaders the connecting link between practical agriculture and the home and school. The club work is one of the things that will help make the Farm Bureau a success. The boys and girls have their place in the community program of work as well as the men and the women. This is as it should be. No other factor will be as important in turning the tide which is now moving toward the cities back toward the country. We are depending upon the farm youth of today to become the successful farmers of tomorrow.

The certified seed potato work was started in Wyoming in the spring of 1920. Niobrara and Laramie counties each selected this as one of their definite Farm Bureau projects, the former county choosing Bliss Triumphs and Irish Cobblers, and the latter choosing Triumphs and Pearls. The work was given a good start and will be continued on a larger scale next season and several other counties will take it up.

The term certified seed being comparatively new and not fully understood by many, a word of explanation may not be amiss. There is a demand for better seed potatoes on the part of growers who are compelled to buy their seed every year, and a desire among Northern growers to supply high grade potatoes. To supply this demand the practice of certifying seed potatoes has been established in Minnesota, Wisconsin, Nebraska and other states, where large quantities of seed potatoes are produced.

Certified seed potatoes may be defined as being potatoes that are certified as being up to a certain high standard with regard to varietal purity, freedom from disease, vigor, type, etc., by an authorized inspector. One or more inspections are made during the growing season and a bin inspection in the fall. A very high standard is required for these potatoes. The inspection work has been carried on in Europe for a considerable length of time, but is comparatively new in this country.

Knowing that good seed potatoes can be produced in Wyoming and that dry land seed is preferable to plant in the irrigated sections and at the lower altitudes, it was decided to take up the certified seed work. Part of a carload of certified Irish Cobblers and Bliss Triumphs was secured for Niobrara county. About seventy-five men grew these potatoes on areas ranging in size from one-half to twelve acres, and applied for certification. The fields were inspected by the extension agronomist during the summer and the tuber inspection took place early in November, when the potatoes were in the cellar. It was found that the potatoes were of excellent quality and would readily pass as certified seed when properly graded. The potatoes grown this year are a great improvement over the seed planted last spring. Only non-irrigated potatoes were inspected. The Irish Cobblers yielded an average of 125 bushels per acre and the Bliss Triumphs 100 bushels.

A potato growers' association was formed in Niobrara county to oversee the growing of the potatoes and the marketing of the same. One thousand two-bushel sacks were ordered with the monogram of the association stamped on each. The potatoes will be sacked and tagged with the blue certification tag before they are shipped. A certificate given under the authority of the Agricultural College is issued to each grower whose potatoes fulfill the requirements of the certification. The blue tag is assurance to the buyer that he is getting certified seed. The low market for table stock has kept down the price of seed potatoes. It is the plan to hold most of the seed potatoes for better prices in the spring.

A community storage cellar was built at Lost Springs. This has a capacity of about 9,000 bushels and will enable the growers in that vicinity to store their potatoes at the shipping point and ship at any time. This is a distinct advantage, as the potatoes can be graded and sacked and held here until the market is right. The association charges the growers but 10 cents a sack for the storage until the potatoes are shipped. There will be three to five carloads of certified seed potatoes to ship from Niobrara county.

The Laramie county growers chose the Bliss Triumph and White Pearls to grow for certified seed. The best seed to be found was distributed to about thirty-five farmers and most of them have complied with the necessary requirements so that the certification can be completed as soon as the potatoes are properly graded. The potatoes are all of good quality and there should be one or two carloads of good certified seed to ship out of the county. There is a good demand for this dry grown seed in the irrigated potato district of Central Nebraska and in the Colorado irrigated section around Greeley.

The growing of certified seed potatoes should become an important industry in western Nebraska and eastern Colorado and Wyoming. Soil and climatic conditions are right for successful potato growing and the demand for good dry land seed is practically unlimited. Texas, Oklahoma, Louisiana and Mississippi afford good markets for seed potatoes and the sections growing dry land seed have more direct communication with the southern markets than have the northern states like Minnesota and Wisconsin, where most of the seed potatoes for the southern states are grown now.

What a Purebred Breeders' Assn. Can Accomplish

HOW ELBERT COUNTY SHORTHORN BREEDERS BUILD THEIR BUSINESS

H. W. HAILEY.

THE history of the Elbert County Shorthorn Breeders' Association has been one of accomplishments ever since its organization in March, 1917, and from the spirit of progressiveness that now pervades that famous cattle growing section of Colorado the achievements of the past will in no measure compare with the work that is to be accomplished in the future. The advent of Shorthorns in Kiowa valley dates back a score of years to the purchase of a few cows by one of the present members of the association. The cows were purchased more as a speculation than as a breeding foundation, but their development and easy feeding ability were noted and in a few years many herds sprang into being. Their progeny grew and multiplied and the owners sold to their neighbors until in March, 1919, the association was organized with twenty-one members.

The first president of this organization was Allen Carnahan, a man who is well known for his ability as a breeder and feeder. C. A. Melburn was elected as secretary, and J. Paul Jones, treasurer. The present officers of the association are C. A. Melburn, president; J. Paul Jones, secretary, and Alger C. Peterson, treasurer; while A. G. Cornforth, one of the active members, is president of the Western Shorthorn Breeders' Association.

Two Shorthorn sociability tours have been held by the association—a feature that has been made an annual event for Elbert county, in which hundreds of the farmers and stockmen participate. The herds of various breeders are visited and talks are made at the luncheon hour by visiting breeders from other sections of the state. This event not only promotes a feeling of good fellowship, but it takes a man around to his neighbors to show him how the other fellow is doing and thus saves one from having too high an opinion of his own herd, and gives the incentive to grow 'em bigger and better each year.

Then there is the co-operative consignment sale, which will be made an annual affair following the first one which was held in October, 1920. At this sale forty-one lots of animals were sold and most of them went into the hands of neighboring farmers who have been converted to the gospel of purebreds. These animals in many cases will form the foundation for other purebred herds and thus spread the good work in a gradually widening circle.

Another advantage realized by the men in this community is the absence of mixed blood in their herds—a menace that many a purebred breeder has to fight. Where men living in one community can agree on one class of stock there are fewer harsh words, when the wire fence breaks between pastures.

Another feature that has proven of great value to the men in this association is the spirit of co-operation that has been developed. If one breeder gets an inquiry which he cannot fill, he refers to his neighbor who perhaps has just the animal the buyer is looking for. Then when a buyer drifts into Elbert county looking for breeding stock he has twenty or more herds to pick from and he can see all these within a radius of ten miles from Elbert. Here then is a saving of time, a feature that will bring many buyers to the district to look at all the herds, who would not drive twenty miles out of their way to look at just one, unless they absolutely knew that they would find there the particular object of their quest.

By working together these men in Elbert county have helped advertise not only their community, but their state. One of the first shipments of breeding cattle from Colorado to the central western states was made from this association. It consisted of 27 heifers, which went to Iowa. At another time a carload of cows, some with calves by side, were purchased of association members and shipped to California, where they have given a good account of themselves. They were purchased by W. S. Gilford of the Butte City ranch.

Several members of the association will have show herds at the National Western Stock Show in January, and in that way help to advertise their animals and their community. Another year will see an even greater interest in their consignment sale and even the most optimistic man would hardly dare predict all the good things that the future can and will bring to such a group of progressive men banded together in the advancement of their own interests and the interest of their chosen breed.

Farm Cost Accounting.

Farmers' Bulletin 572, "A System of Farm Cost Accounting," is a bulletin which has lately been revised and may be had from the United States Department of Agriculture, Washington, D. C. This bulletin was prepared by C. E. Ladd, Agent, and James S. Ball, Assistant in Farm Accounting.

The increased interest in cost of production of farm products has stimulated the demand for systems of farm cost accounting, and especially for a system that is simple in application and planned to give the farmer the information he requires without going into the complexity of detail involved in a highly technical system. It is the object of this bulletin to explain such a system, plainly, and yet comprehensively, and to offer detailed information that will enable any farmer to make an inventory, open his books, carry his accounts through successfully, and close his books at the end of the year.

SEMI-ANNUAL

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Western Farm Life

July to Dec., Inclusive

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Cost of Beef Production.

Western feeders will be interested in cost of beef production figures based on a survey made by Department of Agriculture specialists in Illinois. The bulk of the cattle for which figures were obtained cost their producers between $12 and $17 a hundredweight, laid down at market. Counting corn at its cash farm price, 40 per cent of the cattle showed a profit in 1918-19, while only 5½ per cent of the cattle showed a profit in 1919-20. Balancing what the farmers actually received against what they might have received if they had chosen to sell their corn instead of feed it, there is a presumptive average loss per head ranging from $7.89 for 2,668 cattle surveyed in 1918-19, to $34.78 for 3,543 head surveyed in 1919-20. Nevertheless, some farmers by careful feeding and especially by wise buying and selling, made profits ranging up to as high as $50 per head and over in scattering instances.

The work was done in DeKalb county, 60 miles west of Chicago. During the winter of 1918-19 survey records were obtained for 72 droves (2,268 head), and during the next winter similar records for 83 droves (3,553 head), and detailed cost accounting figures for 25 droves (1,069 head).

It was found that the greater part of the cattle gained between one and two pounds per day, although the total range showed considerable variation. Cost per pound of gain, which must not be confused with cost of the entire animal, ranged from 10 to 60 cents for the cattle covered in the 1918-19 survey, with the bulk of gains lying between 20 and 35 cents For 1919-20 the extreme range was from 7 to 58 cents for the droves covered in the survey, and from 12 to 62 cents for those covered by the cost-accounting method. For over one-half these two groups gains ranged from 25 to 40 cents per pound.

The following table, based on the average returns for all the cattle covered in the study, shows the distribution of costs, total costs, credits, net cost and selling price, figured on the basis of one steer:

	Winter 1918-19.	Winter 1919-20.	Winter 1919-20
Original cost of feeder animal	$ 81.92	$ 78.75	$ 85.00
Operating expenses:			
Feed	86.72	89.54	88.18
Man and horse labor.	8.60	8.22	5.57
Buildings and equipment charge	4.44	4.74	3.85
Interest	3.80	3.61	3.92
Death risk	.43	.34	.43
Veterinary	.10	.08	.08
Insurance	.04	.04	.02
Taxes	1.01	.83	.80
Incidentals	.64	.68	.72
Marketing	2.31	2.10	2.52
Total operating expense	$108.09	$110.18	$106.09
Sum of operating expense and original cost	190.01	188.93	191.09
Manure and pork credit	23.85	20.45	21.42
Net cost	166.16	168.48	169.67
Sale price	158.27	133.70	143.57
Loss	$ 7.89	$ 34.78	$ 26.10
Number of droves..	72	83	25
Number of cattle...	2,668	3,543	1,069

Purchased feeds were charged at actual cost to the farmer and farm-grown feeds at the market price, less cost of getting the product to the shipping point.

Mechanical vs. Live Power.

Investigations were conducted recently by the U. S. Department of Agriculture on 600 different farms in McLean county, Illinois, to secure information on the point of what constitutes a standard day's work with implements and horsepower. About 80 per cent of the farmers in that county use horse-drawn sulky plows; 80 per cent use horse-drawn gang plows and 14 per cent use tractor outfits. The report indicates that the average day's work for a 16-inch sulky plow drawn by three horses is about three acres. Most of the farms use the 16-inch plow, but some are using the 14-inch, which is not quite so satisfactory.

Of the 80 per cent using gang plows a large majority reported that approximately five acres are covered daily with four- and five-horse teams. For fall work another horse is added. It was found that a six-horse team covered approximately the same area in the fall as a four-horse team covers in the same time in the spring.

So far as horse labor is concerned the 28-inch gang drawn by four horses was found the most efficient for both spring and fall work.

A tractor does 30 per cent more work than a six-horse team, and 40 per cent more than a four-horse team in spring plowing. In the fall the percentages are even greater. For the same number of hours and same depth of plowing the tractor will cover 35 per cent more area than a six-horse team, and 55 per cent more than a five-horse team. The average of reports made by 600 tractor owners shows that a tractor drawing two plows will cover 6½ acres per day, and if drawing three plows 8¾ acres.

Another interesting phase of this survey is that relating to the cutting and shocking of corn. It was found that one-third of the farmers of the county put 196 hills in each shock and are able to make about 20 shocks per day. This is equal in area to 1.28 acres. The yield varies from 40 to 65 bushels to the acre, but this does not noticeably affect the amount of ground covered in shocking.

A corn binder was placed in a similar field and data collected relative to this method of cutting corn. Drawn by three horses the binder covered 7.7 acres per day. This was 10 per cent more than two horses could do and about one-tenth of an acre less than the area covered by a four-horse team.

It was further shown that three men can shock the corn just as fast as the binder delivers it. However, two men cover about an acre less and four men can cover nearly three-quarters of an acre more than an ordinary binder. From this it is evident that the binder drawn by three horses and followed by three men is the most efficient unit. Including the driver on the binder, this outfit averages 1.9 acres per man per day, or an increase of 50 per cent over the 1.28 acres by the hand method.

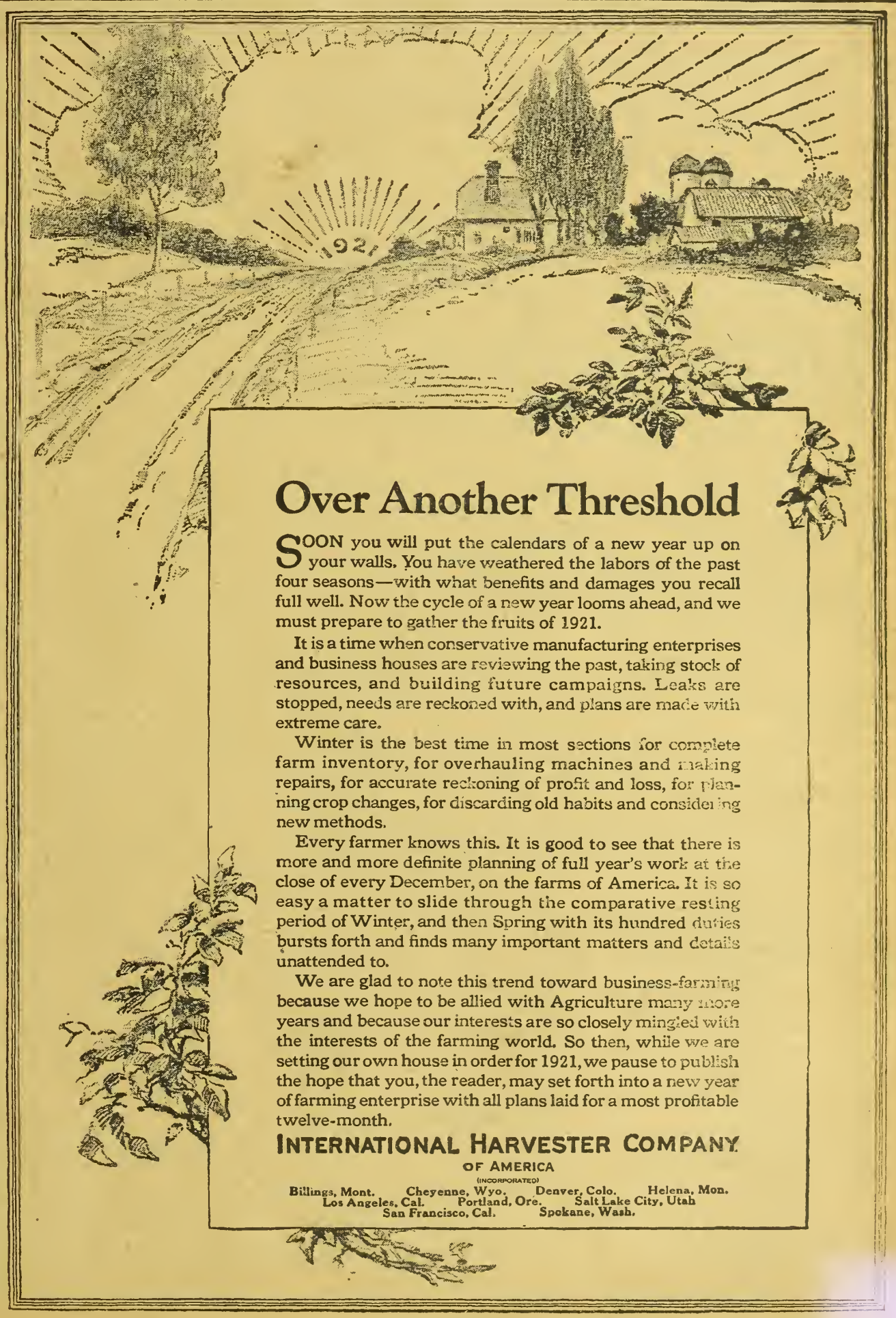
Lo, the Poor Farmer!

If anyone imagines the farmer has been literally rolling in wealth the last few years let him note the statement recently given out by the United States Department of Agriculture. In 1913 farmers of the country received an average return on investment of about 4 per cent, which in 1918 increased to 7 per cent. This could hardly be called growing by leaps and bounds. On the other hand, the recent slump in four commodities—corn, wheat, potatoes and cotton—cuts off at one stroke five billion dollars from the incomes of the farmers of the country. People on farms represent 49 per cent of the population, and are divided into about 8,000,000 families. The slump of five billions means cutting more than $600 from the potential spending power of each family. It is not difficult to imagine the effect of this upon the nation's manufacturing industries. The farmer has raised the year's crop with high-priced fertilizers, high-priced implements, high-priced help. He is right in holding that if he drops five billions on his crop, the things he buys should drop also. The only way to lower prices, and still keep factories open, is to lower wages and at the same time increase the daily output. In the period of readjustment now upon us, it is the duty of every worker, manual or mental, to give a full dollar's worth of work for every dollar of pay.—Leslie's Weekly.

Gasoline Engine Overheats.

I have a mill that I grind corn on with 40-horse-power engine, and the engine doesn't run over 20 minutes until it is boiling the water. Can you tell me why the engine heats so? Is there any remedy?—J. A., New Mexico.

It would be merely guessing if we tried to give you any definite information. However, some of the things that make gasoline engines overheat are these: Overheating in cylinder or bearings; inferior or insufficient oil; closing of the exhaust pipe; governor out of adjustment; lack of compression which may be due to worn, stuck or broken piston rings; scored cylinder walls; leaks through and around the head joints; sticking valves which are not properly setting because of dirt or wear. Any one of these reasons may be true in your case and only an examination by someone familiar with gasoline engines could tell you.



Over Another Threshold

SOON you will put the calendars of a new year up on your walls. You have weathered the labors of the past four seasons—with what benefits and damages you recall full well. Now the cycle of a new year looms ahead, and we must prepare to gather the fruits of 1921.

It is a time when conservative manufacturing enterprises and business houses are reviewing the past, taking stock of resources, and building future campaigns. Leaks are stopped, needs are reckoned with, and plans are made with extreme care.

Winter is the best time in most sections for complete farm inventory, for overhauling machines and making repairs, for accurate reckoning of profit and loss, for planning crop changes, for discarding old habits and considering new methods.

Every farmer knows this. It is good to see that there is more and more definite planning of full year's work at the close of every December, on the farms of America. It is so easy a matter to slide through the comparative resting period of Winter, and then Spring with its hundred duties bursts forth and finds many important matters and details unattended to.

We are glad to note this trend toward business-farming because we hope to be allied with Agriculture many more years and because our interests are so closely mingled with the interests of the farming world. So then, while we are setting our own house in order for 1921, we pause to publish the hope that you, the reader, may set forth into a new year of farming enterprise with all plans laid for a most profitable twelve-month.

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Landlord and Tenant.

Mutual confidence is the foundation of successful farm leases in Colorado. This conclusion was stated in a preliminary report on the investigation of farm tenantry undertaken recently by Prof. Chase, farm management specialist of Colorado Agricultural College, at the suggestion of the State Farm Bureau. Bearing out as it does, the experience in other regions, it offers a clue to the guiding principle of a form of lease that is to be adopted by the State Farm Bureau as a standard for Colorado. There must be a spirit of co-operation between landlord and tenant and the lease must be a partnership arrangement and not an exploitation of the tenant by the landlord.

The inquiry now in progress covers five counties—Larimer, Morgan, Lincoln, Moffat and Otero. These counties were selected because of the different phases of farming and stages of agricultural development found therein. Larimer is the type of older, well developed irrigated region; Morgan the newly settled; Lincoln, the older dry land region; Moffat, the new; while Otero was chosen because of its many Japanese tenants.

An interesting sidelight on the question comes from Otero, where the Oriental farm tenant presents a vital problem. One farming community in that county is four-fifths Japanese in its tenant population and a result has been the discontinuance of a Sunday-school and a shrinking enrollment in the rural day school.

The encouraging feature of the entire report is the fact that honest co-operation between landlord and tenant presents the only truly successful arrangement. Thus we may be justified in the conclusion that economic pressure finally will force this type of lease to predominate. The State Farm Bureau can do a wonderful work in pursuing this investigation to its conclusion and formulating a lease that expresses the ideal relationship between landlord and tenant and then using its influence, through educational channels, to secure general adoption. It is not likely that legislation will be needed to enforce such a lease.

Further comment will be made on this report when it is available in its entirety. Its general tone indicates that farm tenantry is not the hopeless problem which we so often are led to believe it when we consider it statistically alone. We have, as one type of landlord, the far-seeing farmer who may own one, two or three irrigated farms on which he finances large operations that are expected to be profitable to both himself and the tenant, and to result in enhancing fertility instead of exhausting it. There is also the other type, the exploiting landlord, who is in the game to skin the land and the tenant as well. There are also two types of tenants, the one farming with the ultimate goal of becoming an owner, the other known as the "professional" tenant, whose chances for success are slim, even when properly encouraged.

A serious drawback has been a tendency on the part of some landlords to raise the rent as the tenant succeeds financially; that is, failing to let the tenant share in the proceeds of good farming. This only emphasizes what Prof. Chase brings out, that the successful lease is the one that is equitable to both.

Where justice exists in the relationship of landlord and tenant, we find a sense of responsibility to the Nation, a clear conception of the fact that land ownership is a trust for the successful stewardship of which we are answerable to posterity.

✦ ✦ ✦

Purebred Sire Legislation

One of the important measures to come before the Colorado legislature at its session in January is that requiring the use of purebred, registered sires on the range. There has been agitation for such a law for some years, but heretofore reactionary members have succeeded in blocking the legislation on the plea that it was drawn in the interest of purebred breeders. This statement is incorrect. A purebred sire law is decidedly in the interest of the range man and under present conditions, when beef production must be put on the most economical basis, it is necessary to take advantage of every means to that end.

The shortsighted cattle grower may be inclined to think that the grade sire, being cheaper, is most economical, but the man who studies his business knows that the reverse is true. It is the purebred sire that produces the blocky, quick growing calf, that gives the greatest gain in return for its feed. This holds good from grass to slaughter house, all along the line.

Colorado has a half-way measure which requires the rangeman to turn out one high-grade bull with every twenty-five cows. In some sections, too, the rangemen have formed organizations that require their members to use only purebred registered bulls, but even with the closest organization it is impossible to banish the scrub because some man who refuses to co-operate will take a chance and ruin the whole scheme. Experience in other western states has shown that the only effective protection is to compel the use of registered sires on all open grazing ground. Utah and Idaho are among the states that have benefited their cattle industry by such legislation and Colorado should no longer remain behind.

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Stating the Price Problem.

Bland, Colo., Nov. 29, 1920.

We read every issue of your very good farm paper with interest and now we are coming to you for assistance in the time of great distress. Not all of us are able to handle the pen with ink although we can hadle the pen of hogs.

Our particular line of production is stock raising and wheat growing. We have lost large sums on stock already sold and now we are compelled to sacrifice on wheat. We in this locality are offered $1 per bushel for wheat delivered at the railroad and we paid $5 per day and board to harvest this wheat and other expenses in proportion.

I see mention of farmers' wheat control in one of our farm papers (The Farm Journal, November issue). It gives a text of a speech by Mr. Aaron Sapiro, successful manager of the orange and walnut growers' associations. In this speech he outlines what the wheat growers could do.

From time to time I see mention in some papers of the wheat growers' association of Kansas and other states. They are having about as hard a time as the first landing of the Pilgrims on the Atlantic coast. And why? Because those most vitally interested have not joined forces and put their shoulders to the wheel and pulled together.

When will the majority of the farmers learn to hang together, to pull together through thick and thin, to market their products through associations? Some one will say the co-operative societies are not a success, because they were not managed to suit each member. But how about today's prices? Beans $3.25 per cwt., wheat $1 per bu., wool 15c per lb. and beef and pork and other products in proportion!

One year ago the government implored the farmer to plant wheat and now we are overrun with Canadian wheat. They can profit by the money exchange rate, or in other words, an American dollar will buy more in Canada than a Canadian dollar will. We are also subject to the whims of the wheat gamblers.

As a member of one of the Granges of Colorado and a member of the Farmers' Equity Union and Farmers' Union, I ask you to help us organize under some society, preferably the Farm Bureau Federation. This, of course, will stir up petty jealousies among the different farm societies, but they in themselves cannot handle this problem alone.

The farmers everywhere are saying "let's sell out and go to town." The government deplores the fact that the rural population is moving to the city and yet they allow the foreign wheat and other farm products to flood our markets.

Has anyone heard about the freight rates being lowered? No. Why? Because the railroad men have learned how to put their product (labor), on the market, to the best advantage.

Has anyone heard about coal dropping off one-half in price on account of deflation? No, and it will be several days yet before they do. Why? Because the miners are organized.

In closing, I again ask of you to use your influence through the columns of Western Farm Life to present this problem of marketing to the farmers in a manner they can understand.

Thanking you for anything you may do to help us farmers from inevitable bankruptcy, I remain, very truly yours,

Leonard D. Benjamin.

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Wanted: A Blue Sky Law.

It is to be hoped that promises of the enactment by the Colorado legislature of a stringent blue sky law will be kept. Two years ago the farmers asked for and were assured that suitable legislation would be enacted, but at the last minute the bill was killed through the influence of lobbyists for wildcat promotion. Governor Shoup has declared himself in favor of a blue sky law and he is expected to include a recommendation to that effect in his annual message to the Colorado legislature, which convenes on January 1. The farmers have suffered more than any other class through fake oil schemes, fake farm machinery promotion, fake packing-house promotion and a variety of other schemes to defraud, which have been openly carried on to the loss of many millions. It ought to be made difficult, if not impossible, to procure the sanction of the incorporation laws for any scheme of illegitimate financing. Such a law, if modeled after the Ohio or the Kansas statute, will not shut out any meritorious promotion idea, but it will have the effect of keeping the professional sucker baiter out of Colorado. This state has been a mecca for such schemers for years, dating back to the days of mining promotion. It was in Colorado that the notorious Pandolfo, since sentenced to prison, made his largest haul in automobile promotion. "Anything goes" in Colorado has been the open boast of the professional stock salesman, with the farmers as victims. It is high time to end this scandal by enactment of a law with sharp teeth in it and stripes for the faker.

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"Bigger Than Pikes Peak."

One of the features of interest at the National Western Stock Show, which will be held January 15 to 22, will be the exhibits of a number of new breeders in Colorado. Many of these men who will show in Denver for the first time, purchased their original stock at previous shows and are coming back to prove their interest in the purebred industry.

The slogan "Bigger Than Pikes Peak" has been adopted by H. L. Youngerman, general manager of the show, as the only one he could think of that would show what a great affair it is going to be for Colorado and the Rocky mountain west. All departments of the show will have a larger entry list than last year and present indications are that the feeder cattle show will be one of the largest ever held in the country. There will be a large number of entries in the fat hog class also to prove to easterners that both hogs and corn are grown profitably in Colorado. The new hog barn is now completed and will greatly relieve the congestion in that quarter of the show. It is 185 by 100 feet and will house a large portion of the hog entries.

A number of Hampshire hog breeders from Nebraska have arranged to bring several carloads of these belted animals that are so popular in some sections, in order that more Colorado breeders will become interested in them. N. E. Mosher & Son of Hugo, Colo., will also show a herd of Hampshires, as they won a large number of prizes at the State Fair on their showing.

Public sales of Herefords, Shorthorns, Holsteins, draft horses and Durocs for Stock Show week have been announced by the sale committees.

Remember the dates, January 15—22.

Colorado Corn Show.

One of the main objects of the State Corn Show which will be held in Denver during Stock Show week, is to stimulate interest enough in the corn growing industry of Colorado so that the production of this important crop will be materially increased. The Colorado State Farm Bureau in co-operation with the Agricultural College Extension Service is putting forth a lot of effort on this project in order that this and many other good results may be accomplished in the near future. The increase in production which has been made in the last few years clearly shows that there are great possibilities along this line in Colorado, and that with a little more individual effort on the part of the corn growers in nearly every section of the state, corn can easily become our most important crop. In other words, that region known as the "Corn Belt" where "corn is king" should extend past the Rocky mountains instead of stopping somewhere between here and the Missouri river.

An increased corn production means more silos, more available grain for finishing livestock for slaughter and more grain for export to regions where corn is not grown. More silos mean more dairy stock, which is a great asset to any state, and more succulent feed which is necessary in the cattle feeding industry. More grain for export means a cash income for those who do not feed their crop.

The dairy industry in Colorado is fast becoming a very important industry, due to increased interest in better dairy stock and more and better silage crops.

More available grain for finishing livestock for slaughter is one of the principal assets to the livestock industry of the state. For many years past most of our feeders have gone to eastern markets, either direct from the range, or after being fed for some time in this state have been sent east to be finished as corn-fed beef, to supply the eastern demand. Some of this meat is returned to supply the demand for corn-fed beef in this state. There is at once apparent a great economic loss from this procedure. But up to the present time there has been very little remedy for this loss, due mainly to the fact that there is not enough feed raised in Colorado to fatten a very great percentage of these cattle, and due partly to the fact that the livestock and grain interests have not made enough effort to solve the problem.

There could easily be enough corn raised in Colorado to finish a large percentage of the feeders that are shipped east, if enough effort were put forth to get the corn growers to realize the possibilities. If this were done our surplus meat could be shipped out in refrigerator cars instead of stock cars, and Colorado would benefit by the extra fertilizer and by-products occasioned by the feeding and slaughter of these cattle, to say nothing of the freight saved. The same is true of the hog industry. The packing houses of this state can make as good a finished product as can be made in Omaha or any other big packing center, yet many of our hogs are being shipped east to be finished in the corn belt.

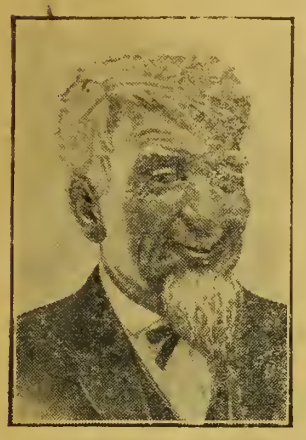
Before this situation can be remedied the necessary feed must be produced. Our hay and some small grains are already being shipped out in large quantities to feed some of our livestock that has been shipped out. If enough corn to balance the other feeds were produced, a solution of the problem could be worked out.

The first big problem then is to increase the production of corn. This can be done by getting the corn growers of every section of the state to work on the problem. The State Corn Show ought to demonstrate the possibilities along this line. The next step should be the organization of a State Corn Growers' association. There is a lot of work for it to do aside from that outlined above.

Now if these things are worth while to us individually and to the general welfare of the state, everyone should get behind the State Corn Show and help the State Farm Bureau make it a success.—F. R. Lamb, Vice President, Colorado State Farm Bureau.

Comment by Farmer Putnam

OUR MISSOURI FRIEND GIVES HIS IMPRESSIONS OF THE SAN LUIS VALLEY POTATO SHOW



DEAR folks, I been down to the San Luis Valley ag'in. This time I went down to tell them farmers how to grow spuds. The editor sez fur me to go and tell 'em becaue I knowed less about it then anybody else of our farmin' experts. He sez the subject was to be How to Make Money Growin' Taters and that it wouldn't be safe fur Western Farm Life to send anybody to give 'em a serious talk on that subject. I told 'em what I thought about it this year—don't grow any! They said if they'd a knowed that in advance they'd a becn better off. All the money that is bein' made in spuds so fur this fall wouldn't make up a good foreign missionary collection. Our growers seem to know how to raise good spuds, but how to raise money on the spuds is a unknown secret which they'd give anything to find out.

Like everywheres else them farmers down in the Valley was talkin' about the way prices on farm products has come down and that they was payin' just the same old high prices fur the things they has to buy. Take wool fur instance; that dropped last summer at shearin' time, but clothes hain't come down none because them manufacturers has to sell off their old stock which they bought on the high market before they kin cut prices. Now if the farmer tries to do the same thing why the people sets up a holler. He growed his wool, his wheat, his spuds and corn with the cost of labor higher'n any year and now all of a suddent comes a drop and the bottom falls outen everything and the farmer has to stand the loss, regardless. The feller that makes up the farmer's hides into leather, his wool into blankets and coats, his wheat into flour, is buyin' his raw product cheaper now so he kin retail it cheaper; he don't lose; it all comes outen the farmer.

I was a tellin' 'em down at the Potato Show that it reminded me of the story of them two farmers that went to church one Sunday not long ago to hear the new preacher. When the service was over John sez to his neighbor, "Well, Bill, how'd you like that sermon?"

"Didn't like it at all, John."

"Didn't like it, why what's the matter with it?"

"He preached too much hell. I don't believe in hell; I don't believe they is sech a place."

"What," sez John, "you don't believe they is sech a place as hell? Why if that's the case, where has the prices on our farm products gone?"

That's about as fur as we git; we know that our prices has gone plumb to New Ginney and what to do about it is the puzzle. Well, as I was a-tellin' 'em over at the Potato show; the American Farm Burro Federation is a settin' out to solve some of them big problems fur us. It's the fust time in our history that the farmers has ever been able to git together in one big organization regardless of kind of farmin' or political or religious beliefs. We set out to back up our county agents in their work and here all of a suddent we found ourselves organized fur business on a national scale, with big farmers at the head of our Federation tacklin' the price of wheat and wool and livestock right down at bedrock.

The latest thing that I got in this line is a letter from the Federation headquarters in Washington which sez they're figgerin' on gittin' the Farm Loan law amended so's the Loan Board kin lend money on warehouse certificates on our wheat, cotton or other staples, advancin' the farmer maybe as much as 75 per cent of what the stuff ought to be worth and holdin' back delivery till the market kin absorb the stuff. The way it is now, when harvest comes the farmer has to ship his stuff because he owes money at the store and at the bank. He cain't wait till winter or spring, consequence is everybody rushes their stuff to market and things takes a drop. It's that way every fall. The wheat and other products gits into the hands of the middlemen who has the finances to carry 'em through and distribute 'em in the consumin' markets when needed, keepin' up a even flow and storin' the stuff in the meantime. Now why cain't the farmer own his stuff till the market needs it and git financed to hold it the same as the middleman or the speculator? Brothers we're a gittin' our eyes opened. You-all watch the Farm Burro Federation put over the wheat deal and the livestock marketin' plan. They ain't nuthin' small about their plans and nuthin' too big fur the farmers if they'll stick together.

We're a-goin' to read a lot of bunk in the newspapers from now on about that farmers should stay in the producin' game and let the middleman tend to the marketin', but don't let it fool you. We ain't a-goin' to run the distributors out, but we're goin' to keep control of our product and give it even distribution instead of dumpin', and what's more we're intendin' to let the public know what it costs to produce and then wise men will see that if the farmer ain't paid cost plus a profit, he ain't a-goin' to keep feedin' the people. I reckon that's fair to the farmer; just as fair as it is fur the store keeper to make a reasonable profit on what he sells. I git kind-a enthusiastick about this here Farm Burro when I think over the big things that's doin' but don't lets expect everything this year. It takes time to do things right and I'm willin' to pay my membership fee and give 'em a chanct. It's wuth ten dollars a year of any farmer's money to git lined up with this here movement. It ain't no fad, nur no political dope, nur no class movement, but jest plain business.

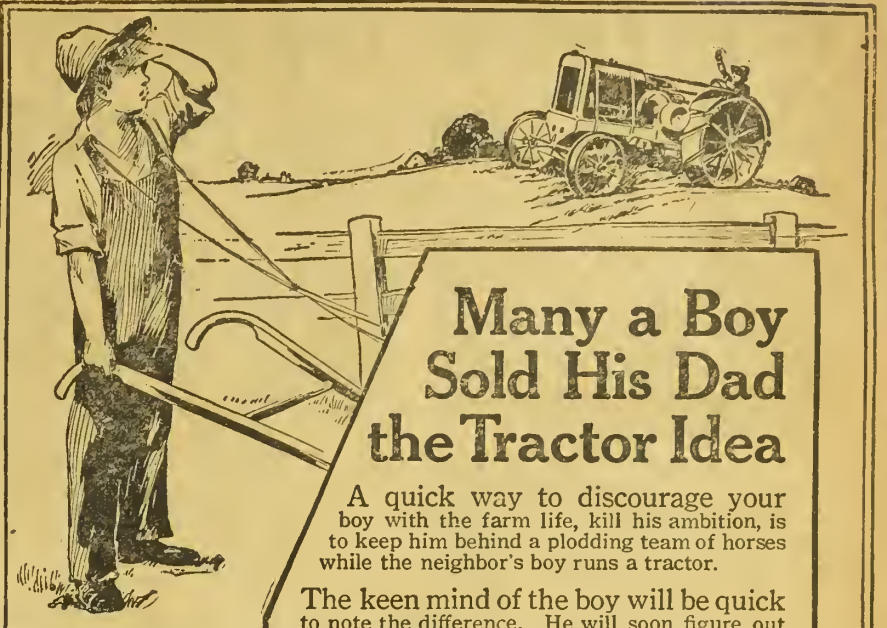
Here I reckon it's time to be talkin' some more about the San Luis Valley Potato show which I started out to tell about. They grow real spuds on their gravelly soils and somehow they seems to run more even and not quite so big as in some other irrigated districts. Soil, water and climate makes the spuds. The San Luis Valley has got a new soil—it's only about 11 million years old. Them geologists tells us that the valley used to be a old lake bed. How do they know? They don't know; they jest guesses it. Geology is one of the safest sciences that we have. The geologist is in the guessin' business and nobody kin prove he is wrong. Some sciences, like medicine, is more exact; that is, if the doctor makes many wrong guesses his patients never come back; they cain't. But the geologist ain't got nobody to check up on him, onlessen he's in the oil game and then it don't even seem to make much difference—the people buys the oil stock jest the same.

So we take their word fur it that the San Luis Valley used to be the bed of a lake and that its soils is new and rich and kin grow most anything that'll ripen in a short season, because it's about 7,500 feet high on the floor of the valley. Potatoes likes that kind of a climate. Prof. Olin told them farmers in his potato lecture that some wild spuds was discovered down in the San Juan country years ago, so it shows that we got a natural potato country. I guess them wild ones must a-been real Irish potatoes.

Lots of potato growers seems to think that they will still grow wild. They do when you don't give 'em no care. But in the San Luis valley the growers has learned that it pays to put in good seed so they're a growin' certified seed; that is potatoes with a college eddication fur which a degree is give to 'em by Prof. Sandstone and his assistant Prof. Locklin. To git a degree the spuds has to have so many credits which includes trueness to type, size—not too much size—has to be in fair health—no smallpox or other contagious diseases, etc. I don't know what all the requirements is. Anyhow when you git a certificate from the college on your seed spuds it means that they're wuth about double the price of market spuds. They had nearly a hundred acres of certified seed in the San Luis Valley last summer mostly in Saguache county. Write to W. A. Sauder, County Agent, Center, Colo., for quotations. (Politic Advertisement.)

The Potato show was held in Center in the school house. That sounds like

(Turn to Page 11.)



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A quick way to discourage your boy with the farm life, kill his ambition, is to keep him behind a plodding team of horses while the neighbor's boy runs a tractor.

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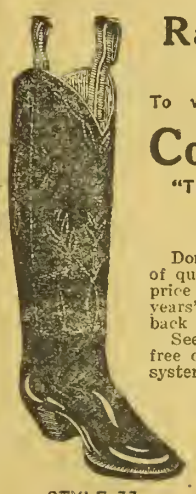

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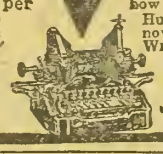

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How I Make Big Money Out of "Ornery" Horses

By J. A. BUTLER

ABOUT two years ago I witnessed up in New York State an exhibition of horse-training that opened my eyes. A man by the name of Mackley took a devil of a mean, vicious mare that hadn't been harnessed for seven months and in a few days had her gentle enough for a school girl to drive. Mackley had taken the mare off the owner's hands for $50 and just ten days after sold her for $175.00. A clear profit of $125.00 in ten days!

That started me investigating. I learned that Mackley had simply used the methods introduced by the famous horse trainer, Jesse Beery. Beery, I learned, used to go about the country giving wonderful exhibitions in colt-breaking and horse-training; but realizing that he could accomplish more by teaching his methods by mail, had given up his exhibition work to spread his horse-training secrets by mail-instruction. Mackley had studied Beery's Course in his spare time and in a few months was able to accomplish magical results with green colts and horses with bad habits.

Other Successes

Mackley's work showed me a way to make some nice money and I determined to take Prof. Beery's Course in horse-training—but before doing so I made further inquiries. Here are what a few of Beery's students said. I'll let them tell of their success in their own words.

Mr. S. L. Arrant writes: "Just to test Beery's methods, I bought the worst balky, kicking, fighting horse I could find. Paid $65.00 for him. After handling him only a few hours according to Beery's system I sold him for $135.00.

Mr. Dell Nicholson, Portland, Mich., writes: I have trained a four year old mare that was given up by everybody. Bought her for $35.00, and now have her so gentle, my little boy handles her. Wouldn't take $200.00 for her.

Dean L. Smith, Findley, Ohio, writes: By following Beery's instructions have changed a worthless, dangerous balker into a horse worth $225.00.

Everett McBlock, Elkhart, Ill., writes: Have just broken a pony to drive and taught it some tricks. Owner bought it for $17.50. Paid me $40 to train it. He just sold it to a show company for $150.00.

How I Work

The big source of my income is in buying up "ornery" colts and horses at bargain prices, and after training the animals, selling them at a good profit. However, I also pick up good money handling colts and training horses for others on a fee basis. For instance, a farmer had a beautiful driving bay that had the bad habit of shying. A piece of paper blowing across the road would set the horse crazy. The owner thought a great deal of the animal, but couldn't take chances on the shying habit. A friend of his for whom I had done some work put this man in touch with me and in a few hours I had the horse completely cured of the habit—for which job I received $50.

Curing Bad Habits

You can see from this that my work consists not only in breaking colts and "gentling" vicious horses, but in curing the various bad habits a horse can have—such as shying, balking, fear of automobiles, etc., pulling at hitching strap, pawing in the stall, etc. etc., Beery's methods of colt breaking are particularly amazing. Under the old way of handling green colts one usually had to half kill the horse as well as himself to accomplish anything—and then the colt was usually spoiled or hurt in some way or other. But, when you apply Beery's principles, there is no hard, long work or injury to the colt.

No one should have a biting, kicking or balky horse when it is so easy to cure these vicious habits. No one should attempt to break in a colt the old fashioned way when Beery's methods make the task so easy. To every horse owner, to every lover of horseflesh, my advice is to get acquainted with the Beery principles. You can not only make money for yourself, but you can do a world of good, particularly at this day when war-demands have placed a premium on horses.

Wonderful Book Free

I have been requested to state that Prof. Jesse Beery will send his remarkable booklet, "How to Break and Train Horses" free to those interested. It is a booklet well worth having as it reveals some startling information on horse-training. I have heard men who considered themselves expert horsemen say that the booklet was a revelation to them. There is no use in my going into details on the booklet when you can get it free for the asking.

Just drop a line to Prof. Jesse Beery, Dept. 5012 Pleasant Hill, Ohio, and the booklet will be sent free by return mail. A postcard will do as well as a letter.

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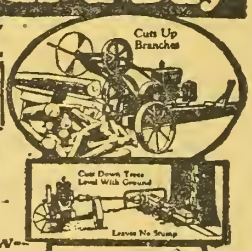

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and through the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Wife's Conveyance Is Good.

Can a wife in Texas, not divorced, buy and sell land and make a deed to same without husband signing it? Has husband any right or claim?—Subscriber.

Sayles' Texas Civil Statutes, section 635, provides that husband and wife shall join in conveyance of wife's separate property, and section 636 requires both to join in deed of homestead property. Apparently the courts of that state have held that where it is shown by the facts that husband and wife are permanently separated the wife's conveyance made by her only is good.—Hamlet J. Barry, 724 Equitable Bldg., Denver, Colo.

Widow's Right to Estate.

What is a widow's right to the estate when her husband dies and does not leave any children? Has his mother any claim to the estate when it does not exceed $1,500?—Subscriber, Wyoming.

Revised Statutes of Wyoming, section 4853, provide that where married man or woman dies leaving no children, three-fourths of all property goes to surviving husband or wife, and one-fourth to father and mother, unless the estate is less than $10,000, in which event the property goes to the surviving husband or wife.—Hamlet J. Barry, 724 Equitable Bldg., Denver, Colo.

A "Cure" for Jackrabbits.

In a recent issue there was a note referring to the efficacy of "Salt and Strychnine" as a cure for jackrabbits. I believe that if you could publish the receipt for using this it would prove of great value to a large number of our readers, including myself.—W. F. C., Nevada.

You ask about the salt and strychnine formula for killing jackrabbits. We use one ounce of strychnine to four pounds of fine table salt, mix it thoroughly, dry, and spread it around the outside of the fields at right angles to the rabbit trails. The thickness you will put it will be determined by the rabbit population.—C. O. Stott, County Agricultural Agent, Manti, Utah.

District School Tuition.

Can a person send their children to any school in the state of Colorado and is it lawful to charge tuition, and at what rate can they charge in a rural district? We live in one district and are sending to another—Subscriber, Colo.

You may send your children to any school in the state, but a tuition charge is made if you send them out of your own district. This charge varies, but it must not exceed the per capita cost of education in the district where such charge is made. It is up to the local board to fix their own tuition charges subject to the above limitations. The law provides that district school boards may enter into agreement with adjoining boards to pay tuition of pupils sent out of their own district for special reasons. This is not compulsory and it is done only in a few districts where neighboring districts have rural high schools. In such cases the board pays the tuition out of school taxes.

Stock Guards on Private Land.

I have a homestead, grazing land, and the railroad runs through the homestead. I want to fence the land. Can I compel the railroad company to put stock-guards in where my line crosses the railroad, or where my fence will have to cross? The railroad has no fences. Will I have to pay for putting in the guards and how will I proceed to have this done or who shall I take the matter up with to get them put in?—Subscriber, Colorado.

"Whenever the proprietor or proprietors of any tract or tracts of land, shall erect fences upon the same, on the same line ending at the line of right of way of any railroad passing through, across or between such tract or tracts of land, it shall be the duty of such railroad company, or the company or persons operating or controlling such railroad, to fence across the said right of way so as to connect said fences, and to insert cattle guards therein, within thirty days after request made therefor by the proprietor of said lands, or either tract thereof; Provided, that the proprietor of said lands shall deposit with said railroad company or person operating said railroad, the estimated cost therefore, to be furnished within ten days after an application made therefor. And every such company or person, for every day during which it or he shall fail to comply with such demand, after the lapse of thirty days next thereafter, shall be liable to a penalty of twenty dollars, which may be recovered in the name of the people, for the use of the person aggrieved."—Section 5478, R. S. 1908. Section 5480 provides for fencing of railroads with gates and cattle guards at crossings on roads, and provides a penalty for farmers keeping gates open after they are constructed. —Hamlet J. Barry, 724 Equitable Bldg., Denver, Colo.

On Various Subjects.

Answers to R. B., Colorado.

Have the directors of a co-operative telephone company the right to levy an assessment on shareholders of say $1 per month for up-keep or for construction after shareholder has paid for his stock?

Ans. Examine the charter and the by-laws of your co-operative company. These should tell you whether the company has a right to levy assessments on the stock. As a general rule companies have that right.

Can I remove any poles that I have furnished in payment of stock, where they are on my own property?

Ans. If there was a specific agreement between yourself and the company regarding these poles such agreement would govern. In the absence of any special agreement or understanding, the poles would be the property of the company if they were furnished by you for a company line, even though poles were placed on your own ground. Therefore, you could not remove them without permission from the company.

Is there any law in the State of Colorado to regulate a doctor's bill?

Ans. There is no law regulating physicians' fees in this state.

When is the best time to sow alfalfa on dry land, fall plowed where the land to be sown is very weedy?

Ans. The early spring is the best time to sow; the earlier the better. You should sow as soon as freezing weather is over. The alfalfa has a better chance against the weeds when seeded early.

Is a disk harrow or a spring-toothed harrow the best implement to cultivate alfalfa after it is a year or two old?

Ans. The disk harrow has been more generally used than any other implement to cultivate alfalfa and when properly adjusted it will do good work. The disks should be set rather straight and the harrow weighted so as to make it cut two or three inches deep. If the disks are set too sloping many plants will be cut off or injured. To do the best work cross disk and finish with a common drag or straight-toothed harrow. Disking alone does not furnish a perfect mulch to conserve moisture and usually leaves more or less clods which interfere in mowing. Harrowing after disking serves to drag out much grass and weeds. The ordinary spring-toothed harrow is sometimes used in cultivating alfalfa, but the sharp straight teeth do considerable damage to the crowns. Special alfalfa cultivators are on the market and it pays to use them where one has a large acreage of alfalfa.

VETERINARY ADVICE.

Questions in this department answered by Dr. George H. Glover, head of the Veterinary Department, Colorado Agricultural College.

Cow Has Depraved Appetite.

I have a 6-year-old Jersey cow that has, during the last five weeks, almost dried up after having given a fair amount of milk since freshening six months ago. She does not eat hay well, nor any kind of chopped grain or bran, but seems to have a very depraved appetite, eating leaves of mullen, willow and oak twigs. She is still in good flesh.—A. K., Douglas County, Colo.

Many cases of depraved appetite are reported during the winter months, especially during late winter and early spring. The desire to lick, chew and swallow, indigestible and unusual objects results from feeding a ration deficient in certain food elements. There is something needed in the bodily nutrition that the animal is not getting. The things that are most often deficient are protein or salts. Lack of exercise, indigestion, intestinal catarrh, poor food, moldy or decayed food, are remote causes. This condition is especiallly liable to appear after a long winter on dry feed, such as straw or poor quality aifalfa. At this time cows are liable to lap themselves and when the hair begins to slip in the springtime, they

may suffer from accumulation of hair-balls. Sheep are liable to begin to chew another's fleece and suffer from wool-balls. Cows will neither eat nor drink as much as they should and of course the milk supply will decrease accordingly. Give physic of one and one-half pounds of glauber salts. Change the feed to something more succulent and of better quality, such as bran, beets, ensilage, or alfalfa hay of good quality. Provide for exercise and milk regularly. Bitter tonics might be considered. Do not feed straw, nor cornstalks if they are moldy or decayed. Salt is very necessary at this time of the year.—G. H. G.

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Comment by Farmer Putnam.

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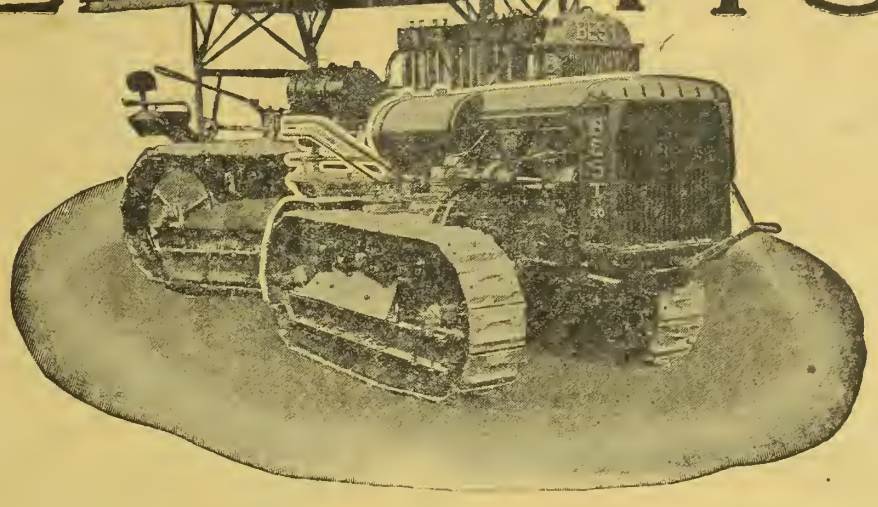
a small show when I sez it was held in the school house, but you ought to see that school house; it's 308x87 feet and the gymnasium room where the spud show was, is as big as the M. E. Church South in St. Joe, where me and Josephine used to attend when we went into town from Stockbridge to see some of her town folks. The editor sez fur me to keep offen that school topic; he'll tend to writin' about eddication which he sez "that old fogey Putnam don't know nuthin' about." Well maybe my book larnin' ain't ekil to his, but I'll match my commonsense with any editor or professor and let you folks judge which is most account in every day life.

Thoz Jefferson Putnam.

If in need of advice, ask Western Farm Life Service Bureau.

REPUTATION



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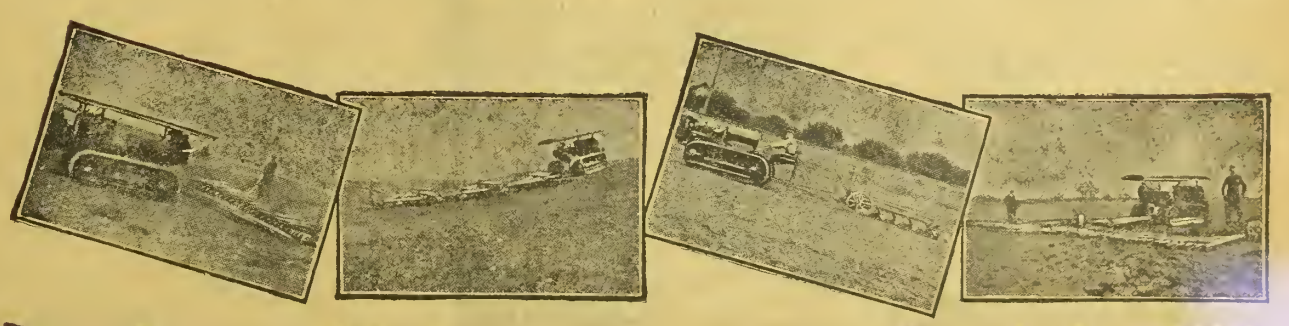

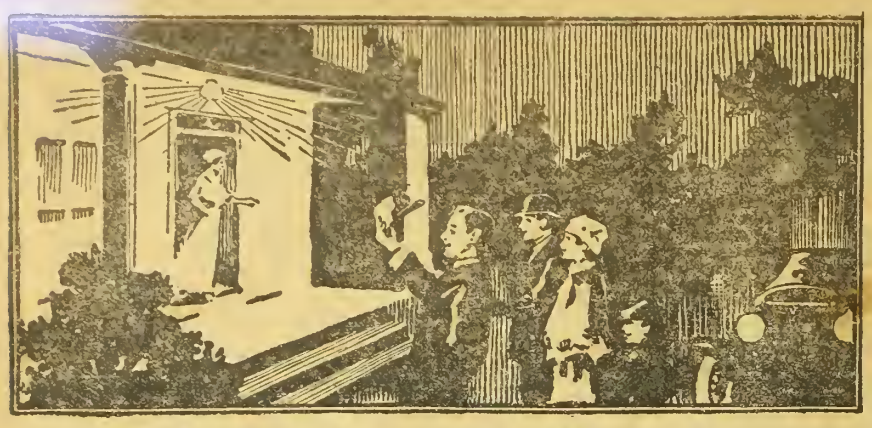

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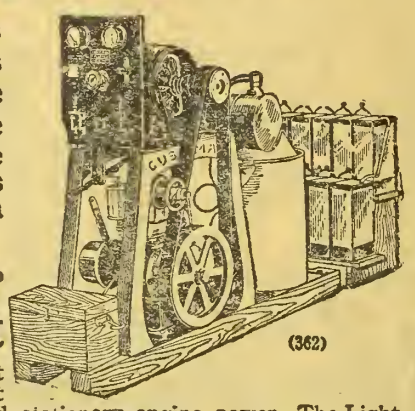

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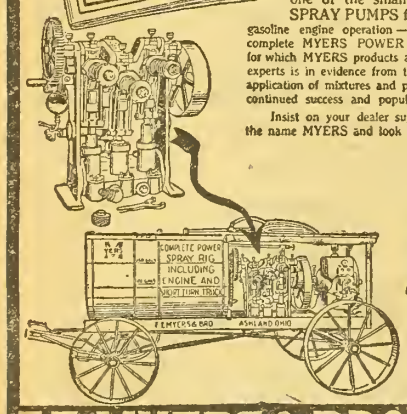

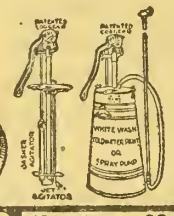

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The Heart of Virginia Keep

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The Previous Chapters.

Prologue: Double murder in barroom, by visitor, in self-defense. He disappears. * * * Twenty-five years elapse. The story opens in the home of Banker Alfred Keep, whose daughter, Virginia, is being courted by Grant Mattock, the young state's attorney. A ragged boy brings a mysterious note for the banker. Banker Keep disappears. Sleuths follow him to Canada, where he is arrested. He is brought back for trial. Mattock chooses the path of duty and becomes a vigorous prosecutor. Virginia stands by her father.

Enter, A. Dempster Trude, wealthy New York youth, in search of excitement. Through the death of a relative he becomes owner of the St. Louis Publicist and, hiding his identity from all but the managing editor, secures a position as reporter. On his first assignment—the Keep story—he encounters adventure and succumbs to the charms of Virginia Keep. He orders the managing editor to "Kill the Keep story."

Senior Lewis, the family lawyer, calls. Virginia receives word that her father will arrive the next morning. Virginia goes to Mrs. Schmitt, star witness of the double murder, and pleads with her to drop the charge, even offering her money. Keep is brought back from Canada. Newspaper men are held off by Trude, who later finds Virginia unable to start her car. He calls a taxi and sends Virginia home. Mrs. Keep learns from Phillip Sturgis, Alfred Keep's banking partner, that something is wrong, and Virginia tells her stepmother the truth. * * * Mr. Sturgis calls on Keep in prison and is much relieved when Keep hands him his resignation as president of the bank. Sturgis hurries away, like the others, shunning the presence of the accused.

Virginia visits her father in prison and mentions the mysterious note. Keep tells her she must go away and allow him to fight his own battle. She refuses. Mr. Lewis arrives and Virginia goes to the offices of Lewis & Lewis. She asks if anyone has ever been convicted on evidence of finger prints, which Mr. Lewis Jr. answers in the affirmative. Virginia mentions the incident of two men forcing their way into her home and of one hiding in his pocket papers which her father had handled. Mr. Lewis, Jr., shows his surprise and then tries to conceal it by saying that experts were often mistaken. She leaves and is met by Trude. She pays for the taxi. He shows her an advertisement in response to her personal ad which states that she might get the information she desired at an address given on the north side of town. Trude offers to help her find the place. He receives a curt reply declining his aid. Trude escorts her to the street car. Virginia apparently waits for a southbound car, but instead takes one going north. She finds the house, knocks and asks for "Mr. McClanahan," who leads her to a room where two other disreputable chaps were playing cards. She is about to give them money, but decides not to. They snatch her purse. Trude unexpectedly comes to the rescue. He takes her for a drive but Virginia remains indifferent. Trude takes her home, where she is met by Roy Fraser, who expresses his sympathy. Moffett reproves Trude for his lateness and is forced to pay the cabby as Trude is broke. They dine and Moffett tries to persuade Trude to publish the Keep story. Trude remains firm. Virginia's stepmother leaves. Mr. Lewis leaves a note from her father, saying that her aunt from Seattle would come to her. Virginia spends a sleepless night.

CHAPTER XV.

The Wolf and the Lamb.

Arnold Trude was essentially non-introspective. He never questioned a motive, nor asked himself why this was done instead of that, but took all zestfully, too delighted with the sheer joy of living to bother about hidden springs. When he went west with the avowed intention of renouncing for a space the things of his heritage and becoming an impecunious newspaper worker, he was only obeying another of the happy-go-lucky impulses that characterized his life. It would be a novelty, he considered, and novelty is spice surely.

But now had arisen something unforeseen, which, since he thought of it seriously, gave him sober pause. Never used to self-analysis, his initial effort proved tediously unprofitable; so at last his doubt and perplexity assumed concrete shape in a long letter to his New York sister, who was married and older than he, and who was often his counsellor in matters of the heart. While Virginia sat at her window, therefore, awaiting her dream's fulfilment, Trude sat at a desk in the reporter's room of his paper, sporadically punching the keys of a typewriter with the forefinger of either hand. He wrote:

"Dorothea—I'm all topsyturvy over a little black-haired, soft-eyed dream of a girl. I suppose I know a hundred or more in New York, almost, if not quite as beautiful, but she's the first one I've ever really loved, and I'm troubled about it, because I'm not sure I want to marry her. A married man misses such a lot of things.

"But there's no getting around the fact that she has me stirred up with serious thoughts. If you could only see her! She has the waviest, massiest black hair, the clearest, purest white skin, the most beautiful dark eyes, the most adorable little curve to her lips, the most witching expression, the finest way of carrying herself—grace in every movement. She's a thoroughbred, every inch of her. She's from Kentucky, by the way. Been making inquiries. Wish you could see and know her."

Here followed abruptly:

"Of course, she believes I'm only a poor devil of a reported. So does everybody else here, except an old Scotchman named Moffett, who happens to be managing editor of the paper. Let me caution you not to tell a soul where I am or what I'm doing.

"This thing of scratching for a living is no hardship, and I'm dead in love with this town. Back east, most everybody thinks St. Louis is some water-tank station on a junction railroad. Foolish belief. It's a fine city full of fine people.

"Have to cut off here. Night city editor's calling.—Affectionately,

"ARNOLD."

Snatching the sheet from the typewriter platen, he scribbled at the bottom:

"If I can get her photograph I'll send it to you."

About eleven o'clock next morning Trude left the Locust street establishment where he rented a room for three dollars a week and, a few blocks away, entered a florists and bought fifty cents' worth of violets. He looked regretfully at the roses, lilies, and other costlier flowers massed in green verdure about the shop, but took his purchase and his departure with stoical resolution.

He gave a boy fifteen cents to deliver the small parcel, found he had a dime left, and breakfasted on coffee and rolls. As he walked slowly to work, pondering on the necessity of borrowing a dollar, the fine courage he had felt upon arising began to crumble and decay, and by the time he reached the office he was half inclined to believe his journalistic anomaly was egregious folly. Had he been able to follow the destiny of his violets it is possible he might have wholly believed so.

Virginia was upstairs writing letters to Lexington relatives when the violets arrived. Almost simultaneously a district messenger delivered a box of superb orchids from Roy Fraser. Lizbeth carried both gifts together to her mistress.

"Put them in water," she said busily without looking up from her desk.

The flowers had come at an unpropitious moment. Broad daylight had sobered Virginia, had made last night's vagary seem mawkishly sentimental if not unreal, had, moreover, made her ashamed of indulging romantic fancies at a time of such trouble. She was seeking, therefore, atonement in letter writing.

Lizbeth's eye was attracted by the exquisite color of the orchids, so she placed them in a cut-glass vase in the library. The violets she consigned to the dining-room table, where later they were found by Bartley, who thought they looked wilted and removed them to the kitchen.

Meanwhile, Virginia finished her letters and dressed to go out. While Lizbeth helped her into the coat of her white serge walking-suit a maid entered with Fraser's card. She grew thoughtful as she read the engraved name. Her recollection of the man was somehow associated with Trude, and Trude was the person whom she wished most of all to forget.

She donned her hat and gathered up gloves and purse before going down. Fraser, awaiting her in the library, noted her apparel in dismay.

"My call is ill-timed,' he lamented.

She murmured some commonplace, glancing at her watch.

"My car is outside," he offered. "Won't you avail yourself of it?"

"Thank you. I have ordered mine."

Fraser's round, infantile countenance expressed disappointment. He touched his thick upper lip with his tongue. Then, standing before her, babylike gaze fixed on her face, he purred:

"I have something to ask you, Miss Keep. It may come somewhat as a surprise—my broaching it at this time—but I am preparing to leave for an extended trip abroad, and I should like to have an answer before I go."

As he paused, she inquired politely:

"You are leaving soon?"

"That will rest largely with you," he smiled.

She lifted her eyebrows.

"It is quite simple," he said, coming close to her.

She became aware of the caressing tenderness in his effeminate voice; aware, too, of the sugared oiliness which invariably denotes the egotistical woman's man, and of the heavy odor of heliotrope which ever enveloped him like a fragrant aura.

"Little girl, will you come with me to Paris—as my wife?"

Virginia lost her breath. Had the library ceiling fallen in she could not have been more astounded.

He had moved so near, that when suddenly he lifted his arm, she had the hysterical impression that he intended to embrace her. Her back was to the library table, and she could not retreat, but she slipped hastily aside and stood a short way off, flushed and startled. Her

alarm was groundless, however. Fraser had merely raised his handkerchief to his pink forehead.

"W-why, no, of course not," she palpitated.

Then, thinking how childish this must sound:

"I can scarcely take you seriously, Mr. Fraser."

"I was never more serious in my life," he said, leaning gracefully on the cane he held at his hip. "I admit we haven't known each other very well, but that has been no fault of mine. Your father has always felt unkindly toward me, and my name was struck off your stepmother's list because of idle and malicious gossip. I have long admired you from a distance, however, and at the last Veiled Prophet's ball I saw I had grown to love you. I never hoped until yesterday——"

"Oh!" she cut in swiftly with a quick smile into his eyes.

"I am taking my first opportunity," he defended, also smiling.

A sudden suspicion entered her mind.

"Mr. Fraser—please be perfectly frank with me—is there any connection between your proposal and my father's imprisonment?"

There is," he declared, his cherubic eyes eloquent with innocent goodness. "As long as this grave charge hangs above your father, there will be a reflected disgrace upon you. I want to shield you from that with my name."

"Why?" she asked.

"Because I love you," he breathed, limping softly nearer her.

She shifted uneasily, then sought refuge behind an oval-shaped table, on which stood the vase of orchids. Some primal instinct made her frightened of the man a little, without exactly knowing why.

"But I cannot marry you, you know."

"Why not?"

"Why, because I don't care for you that way."

He stood opposite her now at the table.

"Take time to think it over," he begged. "A week, a month—as long as you like."

"My answer is final, Mr. Fraser."

He moved his plump shoulders and sighed.

"I—I'm sorry."

"I hope you will not take it greatly to heart," she said, finding it difficult somehow to express the commiseration she felt she ought to show.

He shook his head.

"That is impossible."

As he turned away his eyes fell upon the flowers.

"I had dared to hope," he said with a peculiar intonation she had never before heard in any man's voice, "that you would honor my little blossoms with a place in your holy of holies."

Her lips parted in questioning surprise. Then:

"They are lovely," she said, wishing he would go. "When do you expect to sail, Mr. Fraser?"

"Probably at once—now. But won't you reconsider, marry me, come with me to Paris? It is a most fascinating place in the spring, and with youth and love and unlimited money——"

She interrupted: "I could not leave St. Louis now under any circumstances."

She looked pointedly at the clock, but before he could take the hint Lizbeth burst into the room in violent excitement.

"Chile, chile! Look out yonder! If dat ain't yo' pa comin' I hopes to die!"

Virginia turned to the windows. Her father and the senior Lewis were coming toward the house. Had she observed Fraser she might have noted a marked change in him. At Lizbeth's words his face had gone pastily pale, and now on its baby-like surface were mirrored surprise, bitterness, chagrin, and—most conspicuous of all—craven fear.

As Virginia, astonished and delighted, hastened toward the door, he hopped along after her, all at once very anxious to get away. By the time they had crossed the library, the front door opened and the four—with Lizbeth hovering excitedly in the background—met in the hall.

CHAPTER XVI.

Confession.

Keep's heavy, black brows drew together at the sight of Fraser. Without speaking he held the door wide and jerked his head toward the street. Very quickly and quietly Fraser effaced himself. Not a word was exchanged.

Closing the door behind him, Keep looked at his daughter.

"What'd that fellow want here?" he asked brusquely.

Joyous with greeting, Virginia scarcely heard, or, hearing, paid no heed. Fraser's visit had sunk to insignificance. She took her father's arm, accompanied him into the drawing-room, placed a chair for him, and propped cushions behind his head, plying him with questions. Lewis remained tentatively in the doorway; Lizbeth flew to the kitchen to see about "some victuals fo' Cap'n Alfud."

"Mr. Lewis deserves all the credit," Keep answered her. "He knows the wires and how to pull them, and, as an example of how neatly he works, here I am."

"And you didn't tell me," she reproached him happily.

Keep glanced at the attorney, who, knowing his presence was superfluous, felt desirous of going.

"We weren't sure at first. Wheres your mother?"

Virginia, who had seated herself on an arm of his chair, turned her head away, a corner of her lip between her teeth, eyes on the floor. Lewis took advantage of the juncture to slip unobtrusively away.

"Shes—gone, papa."

Keep's teeth came together with a click. For several seconds he was sternly silent.

"Well, I'm not surprised," he muttered at last. "Will you tell me about it, please?"

She told him briefly, smoothing the raw truth with tactful kindliness. Before she had finished he sat, leaning on elbow, forehead resting on his palm, fingers thrust through his thick, white hair, brooding drearily. Instinctively she put out her hand to soothe him. He started up at her touch, plainly disconcerted by her nearness; and, so she thought, uncomfortable and annoyed at the bond of sympathy which quivered a bare instant between them.

As he got heavily to his feet, Lizbeth, her face beaming like a black diamond, called cheerily from the doorway:

"Yo' lunch on de table, Cap'n Alfud. We done frowed together some cold sliced chicking and a pint o' sperits."

Virginia's eyes had grown very sad and wistful as, in silence, she walked with him to the dining-room.

They had scarcely begun luncheon before he alluded to Fraser.

"It struck me he took a miserable advantage of my absence. What'd he want, anyway?"

"He wanted to see me."

He darted a quick look at her. She was pouring out a cup of chocolate.

"Please don't see him again," he said quietly.

Her level gaze met his.

"I don't see why I shouldn't."

"I do. How often has he been here?"

"Once. And he doesn't seem at all the sort of man I had always thought him.'

"What 'd he talk about?"

"Dear me," with a laugh to conceal her growing vexation. "What an unreasonable cross-examiner you are!"

"If I seem unnecessarily severe," he said, "it's because I know this man so much better than you ever could."

"Well, anyhow," she concluded, reddening, "he's going away, so that disposes of all danger as far as I'm concerned. His trip abroad was one of the things he spoke of, by the way, which answers your question. Now, please, papa, don't let's discuss him further."

And they didn't. Her annoyance soon vanished—as it always did—and she felt again the old longing for his comradeship.

As dessert was served there came a snaky flash of lightning at the leaded windows, followed by a deep-toned growl of thunder.

"Pshaw! It's going to rain. And I'd planned a motor trip in the country. But we'll go another day, won't we—d-dad?"

Keep, disregarding the rain-javelins pelting the window-panes, was turning the thin stem of his wine goblet thoughtfully between his strong fingers. He did not hear her question.

"Virginia, there's something I'd like to say to you. Its about Mattock."

"There's nothing to regret—if that's what you mean."

"That's what I meant precisely. Then you haven't cared?"

She snapped her fingers. "Not that much!"

He looked at her curiously.

"I wonder if you ever really loved him?"

"I once thought I did," she said, contemplating her ice; "but I've seen since it was only a blind infatuation for a prig I mistook for a hero. My eyes opened; I loathed him."

"He had his official duty to think of," he reminded her.

"He might have resigned his office," she declared spiritedly.

"Not many men, I venture to say, would have done that."

She paused in the act of carrying a bit of the frozen delicacy to her lips.

"Papa! You're surely not defending him?"

"Heaven forbid."

"It almost looks like it."

She saw the muscles of his jaw tense; saw his fingers grip the napkin he held as, shoving back his chair, he looked stonily at the rain-flecked windows, un-

(Turn to Page 19.)

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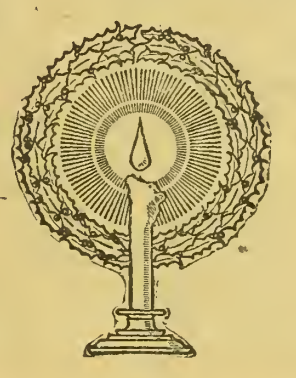

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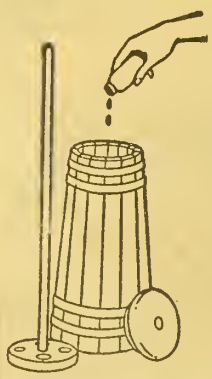

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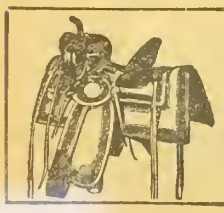

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Irrigated Pastures.

It is a well known fact that the most economical butterfat is that produced on pasture. The month of June is considered the banner month in every state because at that time there is usually an abundance of grass for the dairy cow.

Colorado has an advantage over many of our states where irrigation is practiced. With irrigated pastures it is possible to retain the June condition throughout the growing months. When the good carefully planned mixtures are used, with several kinds of grasses, there is always an abundance of good feed if the water has been applied when needed.

There are many sections of the state where two cows can be kept without other feeds on an acre of irrigated pasture. These cows, if of the right kind, will produce as much and more than the average cash crop, and the labor will be very much lessened.

Prof. George E. Morton has worked out some valuable data regarding efficient pastures in Colorado, which information should be made use of by the dairymen of the state. His advice is to sow heavily in pounds of grass seed per acre of such grasses as will make a well balanced sod, and will keep in good condition throughout the season.

There are some excellent pastures now in use in the Uncompahgre Valley on the farms of Allen Nash at Montrose; John Howell, Montrose; Loesch Bros., Montrose; also at Warnock & Sons, Loveland, and many others in the various irrigated sections. Seeing is believing. Farmers would find it of advantage to visit any of the farms in their localities with the idea of getting first hand information on the most successful method to employ.

Prof. Morton's pasture mixture is as follows:

	Pounds.
Orchard grass	14
Awnless brome	12
Meadow fescue	8
Tall meadow oat	4
Timothy	6
Alsike clover	1
White (Dutch) clover	1
Yellow sweet clover	4
Total	50

On low-lying wet soils reduce the orchard grass and brome grass, adding some timothy and red top. Heavy seeding is necessary to get an early sod. In order to get a first-class pasture a perfect stand must be obtained, so take pains with it. Sow with a light cover crop and remove the crop as soon as cut. Take a crop of hay the second season to allow the grasses to become well rooted before pasturing. For horses or hogs use alfalfa pasture, or in high altitudes a mixture of alsike clover and timothy.—H. A. L.

Permanent Cholera Immunity.

A longer period is required to develop a permanent immunity in vaccinated hogs than is commonly supposed. The most potent anti-hog cholera serum that can be made cannot of itself confer a permanent immunity. Serum alone confers an immunity of a passive or temporary character, the duration being variable. The use of the "serum alone" is, therefore, applicable only to short feeding periods unless the herd is re-vaccinated or a thorough disinfection of the premises is made, says Dr. J. W. Connoway of the University of Missouri College of Agriculture. Therefore when a herd is in constant danger of exposure to hog cholera infection, it is preferable to confer a permanent immunity; but this cannot be secured except by subjecting the animal to the disease-producing activities of the virus.

It is well known that the hog which recovers from a natural attack of hog cholera becomes, as a rule, permanently immune. Likewise, that the "double treated" or "serum-virus" inoculated hog gains a permanent immunity, if the virus is a living and vigorously active virus. The virus, however, in the vaccinated hog as well as in a natural attack of cholera acts in a harmful way on the cells of the body; and the cells, for self-protection, must react to the attacks of the virus and produce specific "anti-bodies," or protective substances, to counteract the harmful action of the virus.

A veritable combat ensues when hog cholera infection enters the system of a hog, and this combat terminates either in the death of the hog or in an immunity more or less permanent. The vaccinated hog, however, has this advantage over the hog which has become infected with virus from natural exposure—a liberal dose of potent anti-hog cholera serum is injected simultaneously with the virus, and this constitutes a supply of "reserve ammunition" which the vaccinated hog draws upon for protection while it is strengthening its cellular defenses and elaborating its own protective serum.

If, however, the vaccinated herd is not properly handled and properly fed, the virus may overcome the protective guards in spite of the reserve ammunition with which the body was reinforced; and some of the hogs may succumb to acute cholera of the septicemic type; or may linger along, with a chronic type of the disease, and finally die from the pneumonic complications or from chronic inflammation of the intestines.

Experiments which have been made at the Missouri Agricultural Experiment Station show that the virus remains alive and virulent in the "double treated" hogs for a considerable time after vaccination, even in vaccinated hogs which are given good care and do not show outwardly any symptoms of illness. It was found that (for a period of more than a week) blood which was drawn daily from the tails of "double treated" hogs was almost as virulent as blood drawn from a pig showing well-marked symptoms of cholera; moreover, the blood drawn from some of the double-treated hogs even as long as twenty-three days after vaccination was still sufficiently virulent to cause death when inoculated into a healthy susceptible pig.

It is thus shown that the process of acquiring immunity and overcoming the disease germs in the body is evidently a slow process, and proper care should be given the vaccinated herd for three weeks or more to avoid the development of acute or chronic cases of cholera from the vaccination. Rough handling during this period, overfeeding after a fatiguing railroad haul or a long drive, may so lower the resistance of some of the animals as to permit the cholera virus with which they have been vaccinated to gain the upper hand and cause death from a true attack of cholera.

Cow Testing Reports.

The report of Colorado Cow Testing Associations for October shows the high cow in the state that month to be a pure-bred Holstein owned by W. A. Purvis, Johnstown, which freshened in February. The high herd for the state was that of the Green Mountain Dairy, Lamar, Holsteins.

In September the Arkansas Valley C. T. A. tested 229 cows averaging 433.4 lbs. of milk per cow and 15.5 lbs. of butterfat. There were 26 cows producing over 40 lbs. of butterfat during the month. The high cow in this association produced 1,704 lbs. of milk and 59.5 lbs. of butterfat. The high herd of 13 cows produced 1,410 lbs. of milk per cow and 46.7 lbs. of butterfat per cow. In October this association tested 224 cows with an average of 516 lbs. milk per cow, 16.9 lbs. butterfat per cow. Twenty-three cows produced over 40 lbs. butterfat. The high cow in this association produced 1,887 lbs. of milk and 71.7 lbs. of butterfat. The high herd of 15 cows produced 1,475 lbs. of milk per cow and 41.2 lbs. of butterfat.

The Douglas and Melvin C. T. A. had 415 cows tested, with an average of 536.5 lbs. of milk, 20.8 lbs. of butterfat per cow and 20 cows producing over 40 lbs. of butterfat per month. The high cow in that association produced 1,380 lbs. of milk and 63.5 lbs. of butterfat. The high herd comprising 11 animals, produced an average of 914.5 lbs. of milk and 34.9 lbs. of butterfat.

The Johnstown-Greeley C. T. A. had 288 cows tested, with an average of 801 lbs. of milk and 30.4 lbs. of butterfat, and 69 cows producing over 40 lbs. of butterfat per month. The high cow in that association produced 1,903 lbs. of milk and 80.7 lbs. of butterfat. The high herd comprising 19 animals produced an average of 1009.4 lbs. of milk and 40.87 lbs. of butterfat.

Logan County H. S. T. A. tested 15 cows with an average of 971.28 lbs. of milk, 31.06 lbs. of butterfat, with 1 cow producing over 40 lbs. of butterfat during the month. The high cow in this association produced 345.7 lbs. of milk and 12.86 lbs. of butterfat. The high herd in that association, comprising 9 animals, produced 1,010.99 lbs. of milk per cow, and 33.25 lbs. of butterfat.

Platte, Boulder & St. Vrain Valleys tested 323 cows during the month, with

an average of 598 lbs. of milk, 24.5 lbs. of butterfat and 29 cows averaging over 40 lbs. of butterfat per cow. The high cow in this association produced 1,311 lbs. of milk and 68.2 lbs. of butterfat. The high herd in that association, comprising 7 animals, produced 890 lbs. of milk per cow and 35.7 lbs. of butterfat.

In the dry land districts the production of cream still continues to decrease. Generally in the irrigated sections the production shows a slight increase over last month. Alfalfa and corn are so abundant in many sections that they are not moving at prices much lower than the ones reported by the testers. At the present time dairying offers the most profitable means of marketing this feed.

In the Arkansas Valley C. T. A. the high cow for September (59.5 lbs. B. F.) is owned by the A. B. S. Co. For October the high cow goes to the Model Dairy with 71.7 lbs. of B. F. The Green Mountain Dairy has the high herd in the state this month with 46.7 lbs. butterfat. This herd averaged 47 lbs. of milk per day and were fed alfalfa, silage, corn chop and bran. Ask E. Land or O. Harvey if it pays to feed grain. Harry Heath's herd was second in the association this month. This herd offers exceptional opportunities to a good dairyman on share basis. The A. B. S. Co. and the Model Dairy herds tied for third. J. D. Scriven, E. C. Gelsinger, G. W. Martin and A. P. Mead have purchased bull calves for their herds. The Prowers county breeders and Lamar bankers have placed a hundred choice heifers with reliable farmers. Froman Bros. have the walls laid for their new barn. Dawson Burwell is carrying on the testing.

Douglas County C. T. A.'s high herd this month is owned by W. G. Schubarth, which averaged 34.9 lbs. butterfat and 914.5 lbs. of milk. E. Lindquist again has the high cow with 63.5 lbs. butterfat. Mr. Dillon is building another dairy barn. About forty cows have been sold this month. Several members plan on purchasing cows in the near future.

Rocabie, purebred Holstein, was the high cow in the Johnstown C. T. A. This cow is owned by W. A. Purvis, Johnstown. It is also high cow for the state with 1,903 lbs. milk and 80.7 lbs. butterfat. Brown Bros. of Greeley have the high herd, averaging 40.8 lbs. butterfat and 1,009 lbs. milk. Walter Guerkink, tester, writes that the cows are producing better, due to more and better feed and more care and attention. The cows in general are in better milking condition this month.

Platte, Boulder & St. Vrain C. T. A.: Tilley, a Guernsey, owned by H. H. Ewing of Fort Lupton, is the high cow with 68.2 lbs. butterfat. W. A. Ewing has the high herd of Guernseys, 35.7 lbs. butterfat. Twelve cows produced over 50 lbs. butterfat. The cows in general are in better milking condition due to better feeding methods.

Sterling High School C. T. A.: H. Sandhouse, supervisor of agricultural education, Logan County High school, is reporting records kept by his agricultural classes. Three herds reported this month and you will note average 971 lbs. milk for the month. This is higher than the average of any of the cow testing associations.

Feed quotations reported by testers vary greatly in the different sections. For example, alfalfa hay is quoted at $7 to $10 a ton in Otero county; $11 to $15 at Fort Collins; $10 to $13 at Johnstown and Sterling; $8 to $12 in Platte Valley and $16 in Douglas county. Silage quotations run $6 to $8 per ton. Beet pulp is quoted $1.75 for dry and $1.25 to $2 for wet. Bran varies from $1.35 per cwt. to $2.35. Cottonseed meal is quoted $48.50 in carlots and $3 to $4 in cwt. lots. Linseed meal $74 in carlots and $3.60 to $5 in ton lots. Corn chop runs $1.30 to $2.75 per cwt. Shorts $1.75 to $2 per hundred; oats $2 to $2.90 per hundred and barley $1.25 to $2.75 per hundred.

Prices paid to dairymen for 3.5 per cent milk were 32c per gallon at Fort Collins; 75c per lb. butterfat Douglas county; 65c Johnstown and Platte Valley; $2.75 per hundred for Arkansas Valley association. Sweet cream sold at 65c, churning cream 55c.

Regarding Stock Cure-Alls.

Can you give me the names of ingredients that would make a good stock powder for milk cows to aid digestion and appetite and general conditions? I fail to get results from the highly recommended stock powders sold by the merchants.—P. N., Teller County, Colo.

We do not recommend the use of any stock powders or conditioners for dairy cows. If the cattle are given balanced feeds with good pasture in summer and root crops or silage for succulence in winter and plenty of pure water, they will not need stock powders to stimulate digestion. If any correctives are needed there is something wrong with your feeding program. The thing to do is to remove the cause rather than resort to questionable temporary measures. We wish to call your attention to a statement in Henry and Morrison's "Feeds and Feeding," the standard authority on this subject, which tells you all about composition of stock foods and gives three formulas that can be mixed by the farmer.

Composition of Stock Foods—The better class of stock foods have for their basis such substances as linseed meal or wheat middlings, while the cheaper ones contain ground screenings, low-grade milling offal, the ground bark of trees, etc. To this filling is added a small percentage of such materials as common salt, charcoal, copperas, fenugreek, gentian, pepper, epsom salts, etc., with or without turmeric, iron oxid, etc., for coloring. The stockman is told that a tablespoonful of the compound with each feed will cause the stock to grow faster, fatten quicker, give richer milk, etc., etc. Yet this amount will supply only an insignificant part of the dose of these drugs which is prescribed for animals by competent veterinarians. Tests of many of these stock foods by the experiment stations support the view of Sir John Lawes, the world's greatest investigator in scientific and practical agriculture, who, after carefully testing the stock foods then being sold in England, wrote: "In conclusion, I feel bound to say that I require much clearer evidence than any that has hitherto been adduced, to satisfy me that the balance sheet of my farm would present a more satisfactory result at the end of the year, were I to give each horse, ox, sheep, and pig, a daily allowance of one of these costly foods."

Farm animals managed with reasonable care have appetites which do not need stimulating. Sick animals or those out of condition should receive specific treatment rather than to be given some cure-all. A good manager of livestock has no use for high-priced stock foods or condition powders, and a poor manager will never have fine stock by employing them. In rare cases the available feeding stuffs may be of such poor quality that some condiment may cause the animal to eat more heartily, and where animals are in low condition and without appetite some spice may prove helpful. To cover such rare cases the formulae for three "stock foods" or spices are presented.

First Formula—Fenugreek, 2 lbs.; allspice, 2 lbs.; gentian, 4 lbs.; salt, 5 lbs.; saltpeter, 5 lbs.; Epsom salts, 10 lbs.; Linseed meal, 100 lbs.

Second Formula—Powdered gentian, 8 lbs.; ginger, 8 lbs.; fenugreek, 8 lbs.; powdered sulfur, 8 lbs.; potassium nitrate, 8 lbs.; resin, 8 lbs.; cayenne pepper, 4 lbs.; linseed meal, 44 lbs.; powdered charcoal, 20 lbs.; common salt, 20 lbs.; wheat bran, 100 lbs.

Third Formula—Ground gentian, 4 lbs.; powdered saltpeter, 1 lb.; ground ginger, 1 lb.; powdered copperas, 1 lb.

The above materials are easily obtainable and there is no difficulty in compounding them. Oil meal or middlings is not necessary if one will thoroughly mix together the other ingredients and give the proper amount along with some rich concentrate, like oil meal, wheat middlings, or ground oats. A tablespoonful in each feed will supply more drugs of possible value than the same measure of most of the advertised stock foods. The third formula, which is more concentrated, may be given at the rate of 1 tablespoonful daily, mixed with the feed for ten days, the dose omitted for three days, and then the tonic given for ten days more.—Feeds and Feeding, by Henry and Morrison.

Facts for the Pork Producer.

Experimental and demonstration work by the University of Missouri College of Agriculture has shown—

That the proper use of supplementary feeds like tankage, linseed oil meal or wheat middlings increase profits derived from swine feeding. With corn worth $1.20 per bushel, a ton of tankage saved corn to the value of $203.64—likewise, a ton of linseed oil meal was worth $113.80 and wheat middlings $45.80.

That fattening hogs gained:

23% faster on a ration of corn and middlings than on corn;

32% per cent faster on a ration of corn and linseed oil meal than on corn alone.

32.6% faster on a ration of corn and tankage than on corn alone.

38.5% faster on a ration of corn and soy beans than on corn alone.

17.6% faster on a ration of corn and germ oil meal than on corn alone.

That fattening swine gain 7.4% faster when self fed than when hand fed, the same ration.

That self fed hogs require no more feed to produce a given amount of gain than when hand fed. Hence, the practice can be recommended as a method of decreasing labor.

That when each feed is placed in a separate self feeder the hogs will choose the different feeds so that the gain will be both rapid and economical.

That the saving of grain resulting from the use of pasture crops is from 20% to 50%.

Forage crops adapted for hog pasture made the following showing:

Bluegrass produced 324.6 pounds of pork per acre.

Clover produced 567.7 pounds of pork per acre.

Rape and oat forage produced 354.1 pounds of pork per acre.

Rape, oats and clover forage produced 414.6 pounds of pork per acre.

Sorghum forage produced 275 pounds of pork per acre.

Cowpea forage produced 212.7 pounds of pork per acre.

Soybean forage produced 117.6 pounds of pork per acre.

Rye grain forage produced 211.7 pounds of pork per acre.

Money Talks.

Minister: "I have just received a call to Chicago which I think I shall accept."

Parishioner: "I thought you had received one to Milwaukee?"

Minister: "The Chicago call is a trifle—er—louder."—Judge.

What better labor-saving device could you want for the housewife than a sound, smooth floor?

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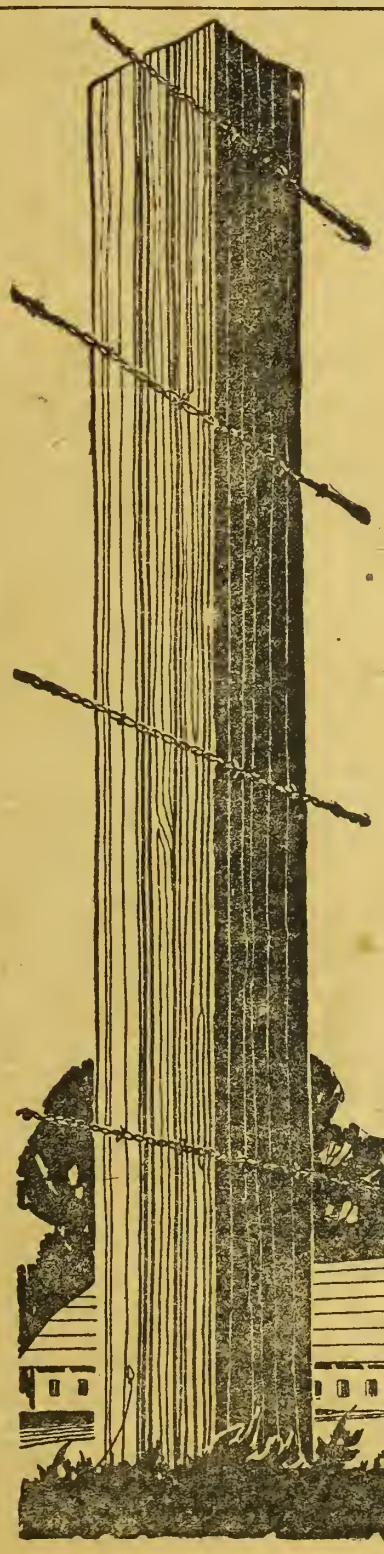

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D. I. Hunter, Loretto, Nebraska, says about Western Red Cedar Posts:

> "I can drive staples into them and they do not split. The staples hold the wire very solidly, and can be drawn out much easier than from any post I have ever used. In fact, I think Western Red Cedar Posts are in all ways the best that can be bought."

Ask your dealer for Lifetime posts. If he cannot supply you, write us.

Send for "Guide to Good Fencing," by I. W. Dickerson, well-known authority on farm mechanics. This booklet contains valuable information on construction of fences and selection of posts. *Every farmer should read it.* Mail the coupon for *free* copy.

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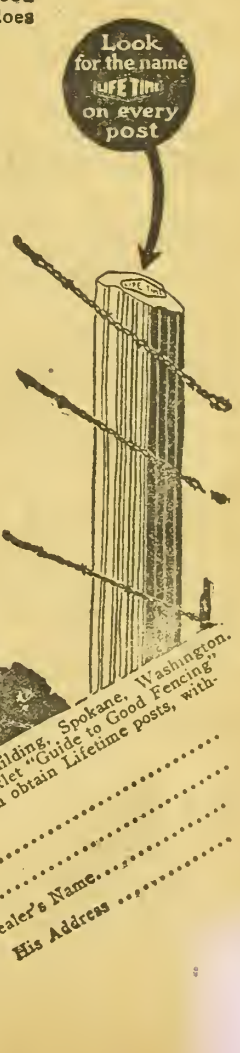

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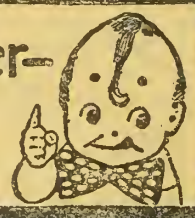

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Contains only such ingredients as have been officially approved by U. S. Food Authorities, is the product of the largest, most modern and sanitary Baking Powder Factories in existence.

Pound can of Calumet contains full 16 oz. Some baking powders come in 12 oz. instead of 16 oz. cans. Be sure you get a pound when you want it.

Calumet Columbia Muffin Recipe

—4 cups sifted flour, 4 level teaspoons Calumet Baking Powder, 1 tablespoon sugar, 1 teaspoon salt, 2 eggs, 2 cups of sweet milk. Then mix in the regular way.

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The Farm Home

MISS ERMA DOUGLASS

Questions about home problems promptly answered by letter and through the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

"Own Your Own Room Club."

That's a queer and a very long name for a girls' club, but doesn't it sound interesting? A man started it, too, which makes it seem queerer than ever. But the man had the right idea and the club, started in Connecticut, is spreading as fast to other states as you'd expect anything to spread which held so much real fascination in a girl's life.

Miss Gertrude Warren of the Boys' and Girls' Department of the States Relations service told us about it at the clothing specialist conference in Ames. Eveery girl loves pretty things and the placing of them in a spot which is her own, for it is only an evidence of her wakening woman's home-making instincts.

The plans are in the main these: A group of girls organize a club just as a sewing club is organized, with officers and program of meetings and the first thing they take up is the study of what they have in their own rooms and whether they have the best arrangement or not. Colored prints of well planned but simply furnished rooms are sent from Washington to each club and the fun begins.

Perhaps her room needs a little rearranging of furniture, perhaps some of the chairs have lost varnish or paint which she can replace. It may be only simple curtains, which the girl makes, are needed to make the room a sunny, delightful place into which any girl will be proud to bring her friends.

All these things mentioned are only the smallest items because the owner is learning to appreciate the very principles which go to make an attractive home and which will not only make her more thoughtful about helping mother in the care of things about the house, but will instill in her own heart a love of making every bit of drapery count toward a simple but beautiful home of her own some day.

Perhaps by next year there will be several "own-your-own-room clubs" among our Western Farm Life girls. Let me hear from those interested.—E. D.

Attractive Aprons.

An apron may be only a dull covering for all one's pretty clothes, or it may be a garment with a distinct individuality as charming as your best Sunday blouse. There was held in November a clothing specialist conference in Ames, Iowa, and one of the most interesting parts of their exhibit was comprised of aprons—real garments. Most of them were projects in the early part of the senior and junior work.

They ranged from children's play aprons to grown up ones, which looked like part of a tea gown and yet they were all cotton and linen; lace, ribbon and very fine embroidery did not appear at all. The children's aprons were cut very simple, the simplest one being only a straight piece of material gathered around the neck by means of a draw tape pulled through a colored bias binding 1 inch wide placed on the right side for trimming. Holes were cut for the arms and bound with bias tape of the same color as the wide bias binding at the neck. For a quickly made, quickly slipped on apron, for a very little child, it was the most fascinating there.

Another child's apron was cut from unbleached muslin, front and back cut alike, from a straight piece if it were long enough, but otherwise having seams at the shoulders. The neck and armholes were shaped, and the apron fastened with button and buttonhole under each arm. Blue "stickerei" braid trimmed and finished the edge and this was stitched on by three rows of short darning stitches in mercerized cotton floss, two rows of blue and one of tan. This apron had two blue ducks cut from chambray appliqued on the front.

One of the prettiest house aprons for women had a straight belted skirt which covered its wearer completely but opened up and down the back like our old-fashioned belt aprons. Its bib was its charming feature and it is rather difficult to describe. It was fastened at the back like any shaped bib, and then the front bib which slipped over the head from the back had long sash ends like some of our summer blouses. With these sash ends, brought round and tied in a big fluffy bow, it didn't look like any ordinary apron you ever saw, but it covered every bit of the dress but the sleeves. It was made of pretty blue and white print and was bound with white bias tape in place of being hemmed.—E. D.

Hints on Home Laundering.

Washing and ironing are among the hardest of the regular household tasks and ways of lessening the work are much needed in many homes. Every housekeeper would like a separate room for laundry purposes with running water and modern labor-saving devices, but this is not always possible. However, by following suggestions given in Farmers' Bulletin 1099, by Lydia Ray Balderston, as far as resources and circumstances permit, you can make the weekly washing less burdensome,

The laundry room should be a room next to the kitchen, or if in a basement a room directly below the kitchen. In this way it is possible to use the same chimney and if the house is equipped with running water the same pipes for both rooms. The basement laundry generally means too many stairs for the housewife, while the room adjoining the kitchen may enable her much more easily to do the work in both rooms at the same time. The kitchen is not the place to do the washing, but if no other place can be fixed for it the clothes should be sorted elsewhere.

Good lighting is necessary for good laundry work, and tubs and ironing board should be placed so that the light comes from the side. Direct sunlight is blinding. If the clothes are hung outside, a door should open directly into the yard. Good ventilation is necessary because of steam, odors and heat.

The floor should be of some serviceable material that does not absorb the water, that is not hard on the feet and is easily cleaned. Wood, cement, composition and linoleum are used, although wood floors are not easily cleaned. Georgia pine is often used as it is resinous and resists water well. Cement floors are good if they are painted with special paint which does not absorb the water. The walls should be of oil paints, as they are not affected by steam. If house paint is used two coats are necessary, then two of enamel oil paint are used. The room should be divided into washing and ironing space, the stove determining the division. The stove should be near the tub and then garments may go directly from the tub to the machine, through the wringer to the tub. The closet for supplies is a necessity. One part of the closet may be shelved to hold the wringer, washboard, starching equipment, irons, etc.

Don't set your equipment too low, as this is very tiresome. The working height is about half way up the side, and in all cases the tub should be placed so that the worker does not stoop from the shoulders, but bends at the hips. The washboard may be lowered by cutting off the legs. The ironing board should be low enough so that force from the shoulder may be easily applied; 31 inches is a good average height. Where no laundry room is provided and there are no set tubs, a portable bench of the correct height and size is convenient.

A galvanized iron tub is fairly light, durable and easy to keep clean; fiber tubs are still lighter and easily kept clean, durable if left dry, but more expensive. Any tub may have a hole bored in it, so that the water may be drained without lifting the tub. Hot and cold water may be piped to these portable tubs as well as the stationary. For set tubs wood is seldom used and soapstone and similar materials are used, but because of their dark color it is more difficult to know that they are clean. Porcelain tubs are also good. Two tubs are sufficient when there is a washing machine, but a third one saves much handling of the clothes.

A glass board is preferable to a metal one, although it is easily broken. Wringers save labor and are less destructive to the fabrics than hand wringing. Fold the garments and hold them flat to keep the buttons from coming off. A reversible wringer is handy if two or more tubs are used. A wringer should be oiled with good machine oil and the pressure screws loosened when not in use. Clean the rollers with a few drops of kerosene, then wash with soap and

water as soon as the discoloration disappears.

A tin boiler with a copper bottom is durable and conveys better heat than the tin boiler and is worth the additional cost. Copper boilers are very expensive but are the most durable. Some laundry equipments include stationary boilers, which save much lifting.

A perforated funnel, made to place in the boiler, which works on the same principal as a coffee percolator, spraying the clothes and increasing the circulation of the water, is a good washing device. The funnel-on-a-stick washer which creates a partial vacuum is also very good.

Hand or motor washing machines are very efficient, because they do more work without constant supervision. Wooden machines are cheaper than those with metal tubs, but are more apt to dry and leak if kept in a heated room. Leaving a wet sponge in the machine helps to provide moisture. Metal tubs should be kept from rusting and be oiled. There are two hundred or more washing machines on the market, grouped under the heads of (1) dolly type, (2) the washboard type, (3) the cylinder type, (4) the oscillating type, (5) the vacuum type.

All these types may be run by hand or by water, gaoline or electric motor. The motor is more expensive but will save time and labor. In order to determine whether from the money standpoint it is cheaper to wash by hand or to buy and operate a washing machine, the cost of the two methods may be reckoned as follows: Divide the cost of the machine by the number of years it will be used, add cost of operation (about 5 cents an hour multiplied by the number of hours used in a year, plus $1.50 for oil and minor repairs per year). The hand work cost is found by calculating the amount paid the laundress for actual washing (not starching and ironing), and add the yearly cost of any meals and car fare given her; or, if no laundress is hired, multiply the number of hours you give to this work yearly by the price which a laundress receives per hour in your neighborhood.

Housewives interested in further details should write to the U. S. Department of Agriculture, Washington, D. C. Ask for Farmers' Bulletin 1099, entitled "Home Laundering." It is furnished free of charge.

Travel Tonic.

The farmer's mule had just balked in the road when the country doctor came by. The farmer asked the physician if he could give him something to start the mule. The doctor said he could, and, reaching down into his medicine case, gave the animal some powders. The mule switched his tail, tossed his head and started on a mad gallop down the road. The farmer looked first at the flying animal and then at the doctor.

"How much did that medicine cost, doc?" he asked.

"Oh, about 15 cents," said the physician.

"Well, give me a quarter's worth, quick!" And he swallowed it "I've got to catch that mule."—Exchange.

Rust is Costly.

Farm implements either wear out, rust out or break. A break, as a rule, does not permanently disable the machine—a new part repairs the damage. A machine does not wear out for a long time unless rust is permitted to get in its deadly work. And rust is so easily prevented. A little good metal paint having rust inhibitive properties will prevent rust. A small supply of it kept on every farm and used to touch up bare spots as fast as they appear would double the life of most farm machinery. It doesn't matter if the job isn't neatly done. Farm machinery isn't supposed to look pretty. It's the utility, the saving that should be considered.

Our Fashion Service.

All patterns 12 cents each. Address Western Farm Life, Pattern Department, 1518 Court Place, Denver, Colo.

Read This Before Ordering: Patterns ordered through this magazine are mailed promptly from the factory at Brooklyn, N. Y., and arrive in 10 to 12 days from time order reaches Western Farm Life. Be sure to specify size and number of patterns. Write your name and postoffice address plainly to avoid delay. These patterns are handled at cost, as a service to our women readers. The price of 12 cents includes postage.

3302—Waist. 3381—Skirt. An Attractive Gown. The waist is cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. The skirt in sizes 24, 26, 28, 30, 32 and 34 inches waist measure. It measures 1¾ yards at the foot. To make this costume of one material for a medium size will require 10⅝ yards of 36-inch material. As here shown, chantilly lace and satin are combined. One could have serge and satin, crepe and charmeuse, or duveyn, serge or gabardine, trimmed as desired. This illustration calls for TWO separate patterns.

3397—Youthful Gown for Slender Figure. Cut in sizes 16, 18 and 20 years. A 16-year size will require 5⅛ yards of 40-inch material. Bordered serge, and other woolen, plaid and check suiting, velveteen, taffeta, tricotine and gabardine are attractive for this style. The width of the skirt at lower edge is 1¾ yards.

3378—Popular Style for Small Boy's Suit. Cut in sizes 2, 4, 5, 6 and 8 years. A 4-year size will require 3½ yards of 27-inch material. Serge, velveteen, corduroy, linen, galatea, gingham, seersucker, khaki, crash, and drill are suitable for this style.

3376—Pretty Frock for Little Girl. Cut in sizes 2, 4, 6 and 8 years. A 4-year size will require 2⅝ yards of 36-inch material. Pongee in a natural shade embroidered in floss is here shown. One may use gingham, seersucker, lawn, percale, poplin, gabardine, crepe, or silk.

3374—Practical House Dress. Cut in sizes 36, 38, 40, 42, 44, 46 and 48 inches bust measure. A 38-inch size will require 6 yards of 36-inch material. One could have this in figured percale with facings of linon or pique, or in seersucker, or gingham with chambrey or pipings of white.

3168—"Easy-to-Make" Apron. Cut in sizes small, 32—34; medium, 36—38; large, 40—42; extra large, 44—46 inches bust measure. For a medium size 5½ yards of 27-inch material is required. Lawn, linen, seersucker, percale, gingham, drill or sateen could be used for this style.

3229—Jaunty Dress for Growing Girl. Cut in sizes 8, 10, 12 and 14 years. A 12-year size will require 4 yards of 44-inch material. Blue or green linen with facings of white pique or pipings in a contrasting color could be used for this design. As here shown, plaid gingham was employed, with linen embroidered in colors for collar and trimmings.

3388—Popular Dress for Growing Girl. Cut in sizes, 12, 14 and 16 years. A 14-year size will require 3¼ yards of 36-inch material. Blue serge with trimming of plaid woolen would be attractive for this dress. It is equally suitable for gingham, poplin, percale taffeta, velveteen and gabardine.

You wouldn't board a hired man all winter if he didn't work, would you? Then why board the hen that never lays an egg?

Shoe Comfort For Every Woman

Martha Washington Comfort Shoes are made for the woman who is constantly on her feet.

For real foot comfort they have no equal. Forty years' scientific study of shoe needs is built into them.

Flexible in the sole where flexibility is most required. Shaped to give ample foot room but not clumsily loose. Soft and pliable leather tops.

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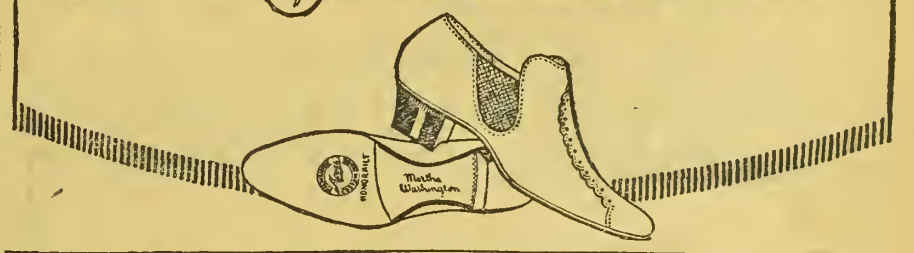
Mayer Martha Washington Comfort Shoes



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For a short time only we will offer this wonderful bargain. You could not buy it anywhere for less than $12.

This wonderful long wearing, warm and good looking Mackinaw is made of the finest material and comes in two colors, Brown and Gray mixtures.

The latest style, gives your boy a very neat and stylish appearance. Double-breasted with all around belt, big comfortable collar which doubles over at the neck, two large warm lower pockets. It is just long enough to keep out the cold and leave plenty of room for lively chaps to jump around in.

Wears like iron and is as warm as toast. The seams are bound and double stitched. All sizes from 7 to 17 years.

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SEND NO MONEY. Pay only $7.65 on arrival. We pay postage. If you are not satisfied with it return at once and we will return your money.

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There is nothing in a home of more intrinsic value than STERLING SILVER

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Send for Illustrated Folder.

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Mail Order House Oriental Goods
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WORTH OF COMMON ORDINARY KEROSENE or Coal Oil will keep this lamp in operation for 30 HOURS and will produce

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of the purest, whitest and best light known to science. Nothing to wear out or get out of order. Simple. Safe. Absolute satisfaction guaranteed. Send for catalog showing lamps for every purpose; also special introductory offer and agency proposition. Write today.

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No Smell

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FORD'S, 1029 16th Street Denver

Develops Films. Print Pictures. Mail Orders Solicited. Catalog Free on Request.

St. Louis Monday.

HEL-LO-o-o-o PETE:

In two more shakes of a lamb's tail I'd have been between the sheets—but I got taken with another *large* idea for Camel Cigarette ads that's so bright you can phone 'em to cut the current because you just had your lamps lit!

Tell you, it's a whale of a stunt! Everybody right quiet—and hats off! NOW—far as I know or ever heard, there never has been one of those zippy slogans under that big display name "Camel," I'VE GOT ONE—get me? Put both your ears close to the ground and get the rumble of a broadside like this:

Camel

Once it meant an animal—
now a Cigarette!

Wow, Pete! I'll testify that's a stoneless peach! Spread it like I've dented it in here—and you've uncorked an eyeful! Suppose you'll want to call me old Mr. Hammer because I hit the nail on the head!

And, bet real money that if this slogan stuff keeps me awake the rest of the night, I'll wire and offer it to R. J. Reynolds Tobacco Co. before you hit the deck! And, I'll be spending some of the proceeds for noon eats! In the "lang-wage" of Jigger-Jones of Joplin, "you tell 'em old yacht, you've got the sales spirit!"

Blowing out of St. Louis at 10.12 tomorrow with a bundle of business. Off for Ohio. *Got something on me mind!*

EX-TRY! EX-TRY!
Just got a wire, I sold 'em that slogan!
Pete, eat on me! S.

Till I get it off—

Shorty.

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When the season is late and your harvesting season is short, your tractor must work overtime—or you may lose money. Breakdowns and delays are disastrous.

The surest way to guard against them is to keep your tractor correctly lubricated. Nothing is more important.

Stanolind Tractor Oil is specially prepared to stand the high heat of tractor engines burning either gasoline or kerosene. In cold weather it stays fluid. When the engine heats Stanolind holds its body and guards against wear. It insures full compression and strong, steady pulling power.

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TRACTOR OIL

Profitable Farm Poultry

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Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries to Poultry Department, Western Farm Life, Denver, Colorado.

Where Idaho Is Wrong.

In a recent number of Western Farm Life there appeared an article entitled "Profit for Poultrymen is in the Eggs." The article presented some results of an experiment conducted by the Idaho Experiment Station.

We agree with some of the statements made in the first paragraph, but only some. By their own figures there is a good profit in chickens raised for meat, so we cannot agree with their positive statement that "poultry meat cannot be produced at a profit." Their cost per pound was $.352. They only value that meat at $.30 per pound, while at Fort Collins frys brought $.50 wholesale, live weight, early in the season. Today, September 15, young chicks are selling at $.60 retail. It seems to us that there should be a profit in chicken meat at these prices, even though the cost be what it was in Idaho.

BUT who would try to produce baby beef by the use of Jerseys?

AND, if someone would try something to foolish, who would be innocent enough to attempt the dairy business with Herefords?

Yet, either proposition is as wise and as likely to succeed financially as the use of Leghorns in the production of broilers or roasters. The Leghorn is the Jersey of the poultry family. She has the same characteristics, small size, active, more or less nervous, little given to fat or meat. If it is true that a good beef animal dresses ten to twenty per cent better than an animal of the Jersey type, for all we know there may be a like greater waste in the Leghorn over the larger fowl. But the consumer buys head and tail, feet and innards, when they buy chicken, so we have no argument on the question of more or less waste in the carcass. The fact is that there is little or no profit in Leghorn meat. If there is none, then other breeds may still be profitable. So far as this particular experiment is concerned, we cannot understand why such a sweeping statement should be made on the results of this experiment.

Again, the 250 chicks were kept in a comparatively small enclosure which makes the cost of production excessive. On free range, especially where a variety of farm crops are raised, the cost of production would be very much lower, undoubtedly less than $.25 per pound.

Probably the mortality in this experiment was less than it would be on the farm, but not necessarily less than it would be on a commercial poultry farm.

We agree with the statement that "the sale of poultry meat should be considered simply as a by-product of egg production" insofar as that statement applies to the exclusive production of poultry meat for market. But we maintain that the production of poultry meat for market, in conjunction with the production of eggs for market, is very profitable at the present time.—W. E. V.

Strong Brine Is Harmful.

Will salty brine cause paralysis in chickens? The first symptom is to mope around for four or five days and then some die and others become almost blind and paralyzed in the legs. The blindness and paralysis lasts four or five days, during this period they have a breaking out on the scaly part of their legs and their legs peel off, after the disease has run its course. They have been sick about two weeks and are somewhat better, but seem to be tender-footed. We are on a ranch and are feeding slop from a hotel to our hogs, which the chickens have access to. Could it be that salty brine in the slop would cause this? All other feed they get is just waste grain on the place.—J. E. W., Douglas County, Colo.

The amount of salt found in table scraps is not injurious to poultry, but strong salt brine may well be fatal. Suggest to the hotel furnishing swill that only table scraps be given you. It would be difficult to find better poultry feed than this.—W. E. V.

Colorado Beats World On Hard Winter Wheat.

John Howell of Montrose took first place on hard red winter wheat and first on white spring wheat at the International Hay and Grain Show in Chicago recently. Competition was open to the world. Colorado grain won 27 awards, including four firsts and five seconds. The state immigration department had a representative at the show assisting Colorado entrymen in arranging their exhibits.

Idaho also made a splendid showing, taking eight places, including two firsts and two seconds in the small seed competition. An Idaho boy, Walter Weaver, member of the Farm Bureau Junior Club in Filer, won second on white spring wheat. First on alfalfa seed was won by an Idaho farmer, J. H. Harding of Kimberley. Following is a list of the Colorado winnings:

Hard red winter wheat, John Howell, Montrose, first; J. J. Skinner, Fruita, second; Ralph K. Davis, Craig, fifth; George Aubuchon, Monument, ninth; W. P. Finlay, Craig, twenty-first. White spring wheat, John Howell, Montrose, first; D. M. Bryant, Montrose, fifth. Durum wheat, John Howell, third; E. W. Glendenning, Craig, ninth; W. P. Finlay, Craig, seventh. Two row barley, John Howell, Montrose, second. Oats (regional), John Howell, Montrose, first; R. A. Chisholm, Del Norte, second; Fred Gothorpe, Proctor, fourth. Hard red spring wheat, John Howell, Montrose, eleventh. Yellow dent corn, Parry August Boys' Corn Club, Sterling, second; Otto Swedlund, Fleming, third; E. N. Heaton, sweepstakes. Dry land corn, Logan County fair, fourth; A. P. Moreland, Merino, fifth. White dent corn, Stanley Mitchell, State Champion Corn Club member, 1919, Iliff, first; A. G. Meyers, Sterling, third; George Hoffman, Jr., Iliff, fourth. Single ear corn, George Hoffman, Iliff, second; Otto Swedlund, Fleming, fourth; Philbert Floy, Iliff, fifth. Flint corn, James Budine, Sterling, fifteenth.

Holmes' Shorthorn Sale.

The sale last month of Scotch Shorthorns by J. K. Holmes at Center, Colo., broke all recent records for sales of this breed in the state of Colorado and indicates very strongly that in spite of the prevalent money stringency, breeders want good Scotch breeding and are willing to pay for it. A large crowd of buyers were present from Colorado and a few from neighboring states. The top price of the sale, as stated in the issue of Dec. 1st, was $1,500, paid by Brunelli & Son of Walsenburg, for Village Knight, by Villager's Prince, and out of the dam, K's Butterfly. The top on females was paid by Jay & Allan of Boulder, when Roan Victoria by Villager's Prince out of Fairholm Victoria, was sold on their bid of $1,050. The pedigree of this excellent individual is as good as one would care to write and her purchasers are to be congratulated that they did not let so good an animal get out of the state. The average on all the females in the sale was $560. The sale was handled from the block by Col. H. L. Burgess of Oklahoma and Ord L. Leachman of Denver, assisted by Al Newmyer in the ring. Colonel Leachman carried several bids from breeders in Colorado and other states, who were unable to attend, and purchased for Jay & Allan the top-priced heifer.

Violet 873916, Nov. 7, 1919, W. E. White, Monte Vista, $430.

Roan Victoria 873912, Oct. 22, 1919; Jay & Allan, Boulder, $1,050.

Villager's Victoria 873915, Dec. 1, 1919; Warnock & Sons, Loveland, $270.

Village Diana 873913, Sept. 4, 1919; Warnock & Sons, Loveland, $300.

Villager's Valentine 873914, Dec. 23, 1919; Warnock & Sons, Loveland, $200.

May Lavender 3d, May 6, 1920; Frank Bennington, Center, $300.

Prince's Gwendoline, April 29, 1920; W. J. Sproll, Center, $410.

Holmcrest Princess, May 4, 1920; W. J. Sproll, Center, $305.

Village Beauty 918951, Aug. 1, 1919; W. J. Sanderson, Monte Vista, $390.

Villager's Princess 741396, Feb. 2, 1918; W. J. Sproll, Center, $900.

Butterfly's Diamond 730383, Nov. 24, 1917; Joe D'Avignon, Center, $560.

Beauty Emblem 602584, July 23, 1916; W. J. Sanderson, Monte Vista, $700.

Matchless Maid 578159, April 21, 1916; Frank Bennington, Center, $525.

Secret Beauty 665505, March 14, 1917; W. J. Sanderson, Monte Vista, $600.

Young bulls were purchased by Joseph Brunelli & Son, Walsenburg; Joe White, Marguretta; L. B. Myres and Bennie Milliner, Monte Vista; Clarence Hawker, Center, and Chas. Mailer, Monte Vista.

Must Have Owner's Consent.

An ice house forms the west line of the property I live on here. I want to build a shed so as to use ice house for west wall. Owner of ice house says I must not, as it will invalidate his insurance. Can I build this shed using ice house to form west side of my shed, provided I do not fasten any of my shed to ice house by nails or otherwise? My shed to be lumber, tar paper and tin.—Subscriber.

In my opinion you cannot use the wall of the ice house as your wall without the consent of the owner. You can construct your own wall next the other wall if you wish.—Hamlet J. Barry, 724 Equitable Bldg., Denver, Colo.

The Heart of Virginia Keep.

(Continued from Page 13.)

der lip outthrust. After a few moments he turned back to the table, sipped his wine.

"I'm trying to hold my anger," he said, as though speaking to himself. "I let it slip once."

* * * *

After dinner that evening, Lewis, senior, called and held a long conference with his client. The lawyer gone, Keep remained in his study discharging matters of moment. His mind continually wandered, however, and presently, relighting his dead cigar, he gazed at the papers before him with a far-away look in his eyes.

The small golden clock on the wide, flat-topped mahogany desk had ticked several hundred times before he rose and left the room. He went to his daughters apartment, found it empty, descended to the library and music-room, saw they were likewise deserted, and finally discovered her in the kitchen, ministering to the needs of a crippled puppy. This was nothing unusual. Rarely a week passed that a homeless animal did not find its way to her care.

"Some brute has broken this poor things leg,' she explained as he appeared in the doorway. "I've set it the best I could. Have you fixed that box, Hannah?"

This to the cook, bedding a soap-box with cotton rags.

"May I see you when you're through, Virginia? I'll await you upstairs."

She assented; and, having tenderly disposed of the mongrel for the night, joined her father in his darkened study.

He was standing at a bookcase as she entered, his back toward the door. When she sat down he crossed the room and stood in the shadows. In the momentary silence that followed she seemed to divine that something dire impended.

"Virginia," he began, in the deep, low-toned voice Bartley had once heard in this room, "tonight I told Lewis everything. The question now is—shall I tell you?"

"Papa, don't let us talk of this. Please. I'd much rather not."

"We must."

Then steadily she heard him say:

"Daughter—I am guilty——"

"Oh, don't. Please, please don't!"

She half rose, half reached out to him in the semi-darkness; then sat back, strangely quiet.

Moving about in the obscurity of the room, he went on:

"You have nobly ignored the stigma upon our name; but you haven't known its foulness. Now that you do, let me bear it alone. I am the one who should suffer."

She looked at him pleadingly.

"I—wish you—hadn't told me—this."

"It's time you realized what it will mean to you, Virginia."

"But why? Why? What would you have me do?"

He paused in his pacing.

"I was thinking," he said, choosing his words carefully, "of marriage."

"How can you suggest such a preposterous thing?"

"It seems to be the only way out for you."

She did not speak.

"Isn't there any one? Harry Sampsell, say?"

She shook her head dumbly, staring at the floor.

"Then suppose when your Aunt Harriet comes you and she take a trip. No matter where, so long as you meet new people. Please understand me. I wouldn't for the world have you marry any one you don't——"

"Father!" She was on her feet, cheeks flaming, her hands clenched tightly at her sides. In another moment she had rushed from the room.

An hour later she returned with a copy of the mornings Publicist. She had undergone a complete change of mien. Eagerly she showed him an article on the front page, headed:

Bricks Made Without Straw.

"Yes, I saw this," he recalled, running his eye over the editorial.

"Isn't it perfectly splendid?"

"Um-m! strange, too." He spoke absently. "I can't understand their motive."

"Which makes it all the more admirable. I hope you have shown them your appreciation."

"Lewis attended to that."

He laid the paper on his desk.

"To revert to what we were talking of just now—what do you say——"

"I say," interrupted Virginia, her enthusiasm vanished, "that I am going to bed. Good night!"

"But you will sleep on what I've said," he urged, following her to the door.

"No, I won't," she retorted.

CHAPTER XVII.

The Mirth of Erebus.

Virginia, in a middy blouse, white duck skirt, and a wide sun-hat, was tossing bits of meat to her yardful of dogs the following afternoon, when the parlor-maid came from the house to say that a man wished to see her in the library.

"Who is he? Didn't he send his card or anything?"

"No, miss. He looks like a refined book agent."

"Well, tell him I don't want any books today."

She gave the remainder of the meat to the dogs, barking and cavorting joyous-pup, who, transported with happiness ly all around her; then went inside, stopping on the way to visit the disabled over his newly found home, was mending gratefully.

Not until she reached the threshold of the library did she have any interest in the identity of her caller. Trude stood before her.

"Your lack of interest in literature," said he, "is reprehensible, but your taste in flowers is excellent. I've been admiring your orchids."

"Aren't they exquisite? Mr. Fraser sent them."

She stood shyly in the doorway, feeling as confused as a demure schoolgirl. She could not know how distractingly lovely he thought her in the wide-brimmed hat and snowy blouse, with the deep V at the milky throat.

He wondered where his flowers were. (At that moment they were in a dust bin.)

"Did you read the editorials?" he asked.

"Yes, and they're positivcly splendid. Who wrote them?"

"I helped a little," he modestly admitted. "Here's one for tomorrow"—handing her a sheet of galley-proof. "Is your father at home, Miss Keep?"

"No; he's down-town."

"I particularly wish to see him."

"Oh, but this is splendid!" she cried, reading with sparkling interest.

"Glad you like it," said he, fascinated by her fleecy skin in the V-shaped yoke. "Do you mind my saying that dress is—er—uncommonly attractive?"

She bent her dark head over the proof sheet, repeating to herself that this man was no more to her than a stranger in the street.

"I've been romping with my dogs," she murmured, without looking up. "That accounts partly for the becoming apparel."

"Fond of dogs?" he asked, quickly interested.

"Very! Would you care to see my trio?"

"By all means. Introduce me. If I didn't live in a furnished room I'd have two or three myself.'

She led the way to the kennels, feeling less self-conscious with him now; and she observed with approval the way her English bull-terrier—a hot-tempered beast who rarely made friends with any one—instantly took to him. Nothing could have more amply attested to his knowledge of dogs, and in her eyes it sent his stock up another point.

After a while, chatting desultory, they strolled to the sunken flower garden, westward of the house, and paused by common consent at the stone facade. The dying sun was gilding the world a gorgeously golden hue. Both fell silent.

(To be continued.)

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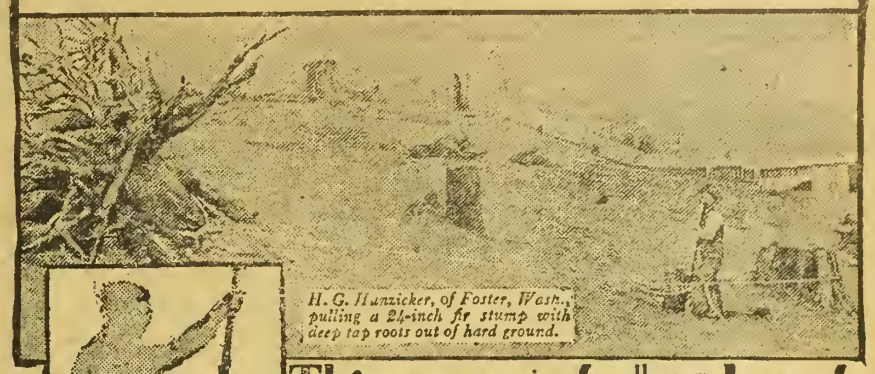
Big Money In Stump Land



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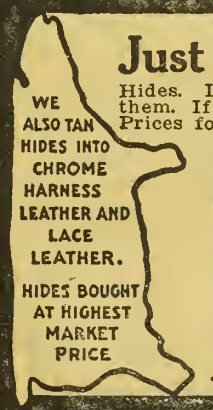

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Poultry Book Latest and best yet: 144 pages, 215 beautiful pictures, hatching, rearing, feeding and disease information. Describes busy Poultry Farm handling 53 pure-bred varieties and BABY CHICKS. Tells how to choose fowls, eggs, incubators, sprouters. Mailed for 10 cents. Berry's Poultry Farm, Box 66 Clarinda, Iowa

PLANS for Poultry Houses. All Styles. 150 Illustrations. Also copy of "The Full Egg Basket." These will surely please you—send 25c. Inland Poultry Journal, Dept. 41, Indianapolis, Ind.

If in need of advice, ask Western Farm Life Service Bureau.

FARMERS' AND STOCKMEN'S EXCHANGE

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted

PLYMOUTH ROCKS.

PURE BARRED ROCK COCKERELS FOR SALE. Prize winners, $3 to $5, if taken at once. E. Plessinger, Cheyenne Wells, Colo.

LIMING'S WHITE PLYMOUTH ROCK COCKerels for sale; from winners State Fair and local shows; $3 and $5 each; they satisfy. The Quality Fruit & Poultry Farm, Manzanola, Colo.

BARRED PLYMOUTH ROCKS; BRADLEY AND Latham strains; cockerels, both light and dark, $4 and $5 each. Winners at the National Western and local shows. Chester Blunt, Route 1, Greeley, Colo.

BARRED ROCKS—BIG-BONED HUSKY COCKerels, "Thompson Strain," out of grand champion cock at Yuma Poultry Show; clear, distinct barring to the skin; $4 and $5 each, a few extra choice at $7. Also a limited number of choice pullets, $2.50 each. A. N. Waechter & Son, Yuma, Colo.

LEGHORNS.

BIG TYPE S. C. WHITE LEGHORN COCKERELS, Mo. Queen strain. Eggs for hatching. East Canon Leghorn Farm, Canon City, Colo.

FOR SALE—SINGLE COMB BROWN LEGHORN cockerels, $1.50 each. R. E. Gifford, Mitchell, Nebr.

RHODE ISLAND REDS

R. I. RED COCKERELS, PRIZE WINNERS, $5 each; none better at any price. Maud L. Waldrop, Branson, Colo.

EGGS FOR HATCHING. ROSE COMB RHODE Island Reds, exclusively, prize winning, heavy laying strain, five pens mated. Write for mating list. E. A. Miller, Alma, Nebr.

WYANDOTTES.

WHITE WYANDOTTE COCKERELS FOR SALE, from $3 to $8 each; a few pullets at $3.00 each. Mrs Geo. Wheeler, Otis, Colo.

WHITE WYANDOTTE COCKERELS—TRAPnested stock, $3 and $5. Mrs. Mary M. Wright, Rte. 2, Box 314, Boulder, Colo.

LANGSHANS.

IMPROVE YOUR FLOCK WITH MY STANDARD bred Black Langshan cockerels, $5 up. O. I. Moon, Fort Morgan, Colo.

SEVERAL VARIETIES.

CHAMPNEY'S POULTRY YARDS—IF IT WEARS feathers we have it, or will get it for you. Write us your wants. 2057 S. Broadway, Denver, Colo.

ORDALAC STRAIN RED COCKERELS—NONE better; Pearl and White Guineas; Pekin Ducks, and Runners. Champney, 2057 S. Broadway, Denver, Colo.

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MAMMOTH BRONZE TURKEYS, CHAMPION strain, vigorous free range stock; toms $10, hens $6. Harry Heath, R. 1, Box 74, Lamar, Colo.

MAMMOTH BRONZE GOLDBANDS; VIGOROUS, unrelated flocks; sired by 40-lb. toms; young 22—28-lb. toms, $10—$15; 15-lb. pullets, $8; 22-lb. hens, $15. Laura Ullom, Lamar, Colo.

PET STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

BEAUTIFUL PEDIGREED COLLIE PUPS, MALES $25, females $20. Other collie and shepherd pups, males $15, females $7.50; natural heelers. Pictures 10c. R. Ellis, Beaver Crossing, Nebr.

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HOGS

BIG TYPE POLAND CHINA BOARS AND GILTS for sale. Ben F. Sawhill, Seibert, Colo.

FOR SALE — PUREBRED POLAND CHINA spring pigs. W. B. Patrick, Route 6, Denver.

FOR SALE—A FEW YOUNG BOARS AND GILTS from registered Big Type Poland China stock; prices reasonable. F. L. Toliver, Ft. Collins, Colo.

BLUE HOGS—LARGE, GROWTHY AND PROlific; everybody likes them. Write for booklet. Mention this paper. The Blue Hog Breeding Co., Wilmington, Mass.

BIG TYPE POLAND CHINAS, CHOICE PIGS, both sexes, three to five months old, best of breeding, priced right; pedigrees furnished. Pinehurst Ranch, C. W. Miller, Prop., Rye, Colo.

FOR SALE—BIG TYPE POLAND CHINA BOARS and gilts; can furnish both sexes for mating, or bred gilts for desired month for farrowing. Correspondence solicited. W. J Peterson, Seibert, Colo.

A FINE DUROC BOAR CHEAP, FOR $75; WILL sell you a registered March boar, sired by 1919 Colo. State Champion, an Orion, whose sire is one of the hundred leading boars of the country. You should not miss this chance. J. N. Caldwell, Littleton, Colo.

DUROC BOARS AND GILTS OF SEPTEMBER farrow, sired by Edgemoor Principal 2nd, litter mate to junior champion at Colorado State Fair. Will ship on approval to all points in Colorado, Wyoming and New Mexico. Real Duroc type at farmer's prices. Joseph Janner, Elbert, Colo.

WHY TAKE CHANCES, WHEN WE SHIP YOU our registered Duroc boars, open and bred gilts to your barn yard, before you pay. We sell the big kind that will get the right type of feeders. Orion Cherry King and Defender blood lines. J. O. D. Ranch, Aroya, Colo.

CATTLE.

STRONG, HEALTHY YOUNG MAN AND WIFE want work on purebred stock or dairy farm; steady and reliable. Address, Box 2-C, care Western Farm Life, Denver, Colo.

REGISTERED HEREFORD BULLS—AN EXTRA good load of Anxiety bred yearlings at prices that will make a speculator money; well marked and big-boned out of my big cows. J. O. D. Ranch, Aroya, Colo.

WANTED—DAIRY HERDS, TO CONSUME OUR alfalfa hay; dairy opportunities unexcelled on the Newlands Irrigation Project. Never-failing water supply, great variety of crops; 1920 alfalfa crop, 100,000 tons; ideal climate, good dairy markets; leasing opportunities or feeding contracts available. Address, Newlands Project Alfalfa Association, Fallon, Nevada.

FOR SALE—REGISTERED HOLSTEIN BULL calf, 8 months old; grand champion bull of the Western Slope Fair; his dam made 15.25 lbs. butter in seven days at the age of 2 years and 2 months; his sire is the great Colorado and Minnesota bull, Sir Johanna Bess Segis, whose dam made 1,059 lbs. butter in one year. This calf is well marked and a dandy; price f. o. b. Montrose, $200; first check takes the bull. B. P. Patterson, Montrose, Colo.

SHEEP.

REGISTERED HAMPSHIRE RAMS — THREE yearlings and eight lambs of superior quality; have won at Pueblo and all county fairs where shown; prices reasonable. J. O. D. Ranch, Aroya, Colo.

HORSES.

TWO AND THREE YEAR OLD REGISTERED Percheron stallions for sale at attractive prices. Splendid individuals; satisfaction guaranteed. R. R. Lucore & Sons, Arriba, Colo.

HELP WANTED

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AGENTS—FOR FORD PERMANENT NON-SKID chains, $4 delivered. Instantly on and off. Big sales. Box B. N., Plantsville, Conn.

RAILWAY MAIL CLERKS NEEDED EVERYwhere—$133-$190 month; expense money; experience unnecessary. Particulars free. Write Modern Institute, Dept. 363, Denver, Colo.

YOU ARE WANTED—U. S. GOVERNMENT JOBS —$135-$200 month. Hundreds openings. List free. Write immediately. Franklin Institute, Dept. F 131, Rochester, N. Y.

SEEDS

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SUDAN, $7 CWT.; ALFALFA, $10; TIMOTHY, $3.50; other seeds at 50% less than wholesale. Reliable Seed Co., Salina, Kans.

COLORADO SEED CORN, WHITE MOUNTAIN, 40 to 100 bu. per acre last two years, without irrigation, 7c per lb.; Yellow Dent, 5c per lb. L. W. Coffman, Hartman, Colo.

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Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—160 ACRES AND STOCK; FINE for raising head lettuce. Wm. Hoge, Hillside, Colo.

WANTED—TO HEAR FROM OWNER OF FARM or improved land for sale. O. K. Hawley, Baldwin, Wis.

IF YOU WANT TO SELL OR EXCHANGE YOUR property, write me. John J. Black, 33rd st., Chippewa Falls, Wis.

OKLAHOMA FARMS—WRITE FOR FREE AGRIcultural booklet. Board of Commerce, Shawnee, Oklahoma.

WILL EXCHANGE A FINE 1,120-ACRE RANCH for a small irrigated dairy farm. Write G. N. Kysar, Goodland, Kans.

SELL YOUR PROPERTY QUICKLY FOR CASH, no matter where located. Particulars free. Real Estate Salesman Co., Dept. 11, Lincoln, Neb.

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160 ACRES, 35 MILES EAST OF DENVER, next to irrigation; all fenced, 80 acres broken; good brown loam wheat land; near railroad and school; $45 acre. Ed L. Knight, Owner, 531 S. Pearl st., Denver, Colo.

320 ACRES CANADIAN WHEAT LAND; YIELDS 50 bushels acre; all under cultivation; $4,000 of improvements; only $40 acre; 1921 crop should pay for it; $8,000 cash, balance easy payments. Write for full particulars. Earl Grant, Barons, Alta., Canada.

HEREFORD AND OTHER FINE CATTLE LANDS or farms that offer best opportunities; eight months' pasturage annually; silage crops; improved or unimproved lands; wonderful mild winter climate. Write for our listings and terms. Railroad Farm Bureau, San Antonio, Texas.

DAIRY FARMS AND LANDS, WHICH OFFER splendid opportunities for dairying, with creamery and market right at your door; also excellent for diversified and other farming; ideal mild, healthful climate, schools, churches, railroads and other advantages. Write for listings, terms, etc. Railroad Land Bureau, San Antonio, Texas.

REAL FARM OPPORTUNITIES IN TEXAS, where farming pays best; best markets, schools, railroads and roads; ideal mild winter climate. Would you like to know of these opportunities? Write us crops you are interested in, livestock you want to raise, acreage you want, whether improved or unimproved, and terms wanted; we can then locate you ideally, where markets are guaranteed. Railroad Co-Operative Farm Bureau, San Antonio, Texas.

320-ACRE BLUEGRASS FARM—WITH PAIR mules, 2 cows, flock hens, brood sows, complete implements, fodder and grain; less than $19 acre; motor bus service; rich lime soil tillage cuts 2 tons hay acre; 100-cow wire-fenced pasture; abundance wood, 50,000 feet timber; 35 peaches, other fruit; good buildings; quick buyer gets; $5,850 takes everything, easy terms. Details page 87 Strout's Free Illustrated Catalog Bargains 33 States. Strout Farm Agency, 831 B. A., New York Life Bldg., Kansas City, Mo.

EASTERN KANSAS RANCH FOR SALE—565 acres, near Emporia; four miles from railroad station; two sets of farm buildings; three barns; inexhaustible water; plenty timber, fuel and building; 75 acres alfalfa; 300 acres bottom, raises corn, wheat, oats, alfalfa; cross-fencing for hogs and cattle; two upland pastures. Will sell cheap or trade for Colorado ranch. Write me for prices, terms, etc. Mrs. E. W. Palmer, owner, 1515 Adams, Denver, Colo.

SAN LUIS VALLEY IRRIGATED FARMS—THE best land in the valley, under a first-class irrigation district; 125 acres, improved, adjoining Federal Aid Highway; 40 acres, improved, adjoining Federal Aid Highway; 40 acres, unimproved, ½ mile from Federal Aid Highway; 80 acres, unimproved, 1 mile from Federal Aid Highway; 20 acres, unimproved, 1 mile from Federal Aid Highway. Every foot can be irrigated and will raise a crop. Look at the crops on the above and adjoining lands and be your own judge. For prices and terms write or see owners. A. A. Salazar & Son, San Luis, Colo.

LUMBER

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LUMBER, LATH, MILLWORK—GET OUR DIrect to consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 443 Lumber Exchange, Seattle, Wash.

FIR LUMBER, DOORS, MILLWORK, RED CEdar shingles, fence posts, from mills straight to you; send bill for money-saving delivered price. Lansdown, Box 909 M, Everett, Wash.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

INVENTIONS.

INVENTIONS WANTED—CASH OR ROYALTY for ideas. Adam Fisher Mfg. Co., Dept. 204, St. Louis, Mo.

CANDIES.

25 CENTS CASH BRINGS YOU SAMPLES, prices, of our Xmas Candies. Western Sales Co., P. O. Box 811, Pocatello, Idaho.

VIOLINS.

VIOLINS WITH COMPLETE OUTFITS FOR SALE on easy monthly payments; five days free trial. Write Miss Bertha Mardiss, Shawnee, Kans.

POSITION WANTED.

STRONG, HEALTHY YOUNG MAN AND WIFE want work on purebred stock or dairy farm; steady and reliable. Address, Box 2-C, care Western Farm Life, Denver, Colo.

PATENTS.

PATENTS—BOOKLET FREE. HIGHEST REFERences. Best results. Promptness assured. Send model or drawing for examination and opinion. Watson E. Coleman, Patent Attorney, 624 F st., Washington, D. C.

TRACTORS.

NEW CASE 10—20 TRACTOR, PRICE $550. P. O. Box 21, Denver, Colo.

FARM MACHINERY.

WANT THE CHEAPEST, HANDIEST BELT power? Then ask me about my Little Twister Power Transmitter for Ford and Dodge cars. Frank R. Weisgerber, Salina, Kans.

WOOD CUTTING CONTRACTS WANTED.

WILL TAKE CONTRACT TO CUT WOOD— Want big jobs; power saw used. Address E. Gatewood, corner S. Madison and E. Evans, Denver, Colo.

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WE WILL SAVE YOU HALF—OUR REBUILT late model Harleys and Indians are better; money back guarantee. Write for list prices and terms. Doc Van, 11 E. 13th ave., Denver, Colo.

KODAK FINISHING.

KODAK FINISHING BY MAIL—ROLL FILMS developed, 10c; one-day service; no delays. Mile High Photo Co., Established 1905, 318 17th st., Denver, Colo.

TOBACCO.

KENTUCKY HOMESPUN SMOKING AND CHEWing tobacco, 10 pounds $3.00; 20 pounds, $5. Paul Ford, Jonesboro, Arkansas.

GROCERIES, MEATS, FENCING, ROOFING.

SEND FOR OUR WHOLESALE WEEKLY PRICE list, it will save you from 20 to 40 per cent on your supplies. 5-lb. can Calumet baking powder, 90c. Whether you buy from us or not get our list, it will keep you posted and will help you buy your goods right. The Stock Growers Wholesale Supply Co., 1523 Nineteenth St., Denver, Colo. Long distance, Main 7612. P. O. Box 1442.

HONEY.

BEST WATER-WHITE HONEY; SATISFACTION guaranteed; 60-lb. can $12. B. Walsh, Box 38, Hagerman, Idaho.

DELICIOUS NEW HONEY, 10-POUND PAILS $2.50; 60-pound cans, $13.00. You will find this honey pure, clean and nice. A. A. Lyons, Fort Collins, Colo.

"THEBESTO ROCKY MOUNTAIN HONEY," light colored, thick, fine flavored, suitable for Christmas present; 5-pound can $1.50, postpaid anywhere west of Mississippi river. Send remittance with order. The Colorado Honey Producers' Association, Denver, Colo.

TANNING.

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

AUTO AND TRACTOR SCHOOLS.

YOUR CHANCE FOR ADVANCEMENT—WANTed, mechanics and truck drivers. How many times have you seen this kind of an advertisement in the daily papers? Why not let us train you to take one of these highly paid positions? We train you in the practical way on regular automobiles, trucks and tractors, give you the benefit of the most experienced instructors. We have day and night classes, in other words, we do all that other schools do and a little bit more, as we are the oldest and operate the world's largest chain of practical motor schools. Bring us your problems and we will help you. Write or call 1733 Champa st. for free catalogue and information. Do this now. Special rates for short time. Hemphill Bros., State Auto and Tractor School. Denver branch office at 1733 Champa st. Other branches at Portland, Ore.; Tacoma, Wash.; Vancouver, B. C.; Victoria, B. C.; Calgary, Alta.; Winnipeg, Man.; Edmonton, Alta.; Saskatoon, Sask.; Regina, Sask.; Salt Lake City, Utah.

Let Western Farm Life Service Bureau help solve your farming problems. All questions promptly answered.

From Corral and Pasture

By H. W. HAILEY

An error was made in the list of the Colorado State fair awards in the Holstein classes. Our report showed that a bull belonging to Spencer Penrose was junior champion, whereas the facts are that Colorado Count, formerly known as King Johanna Cedar Side Pontiac, was the junior champion. This bull is owned by W. G. Foster of Wallie Farm, Denver.

o o o

W. B. Patrick, who lives in Jefferson county near the Morrison road, is one of the new breeders of Herefords who will show a few head of young animals at the National Western in January. He has a foundation herd of ten good cows and a Major Fairfax bull. Several stylish young bulls from Bonnie Brae cows and sired by Domino Jr., will also be placed in the Hereford sale. Mr. Patrick is also breeding Poland China hogs and is making plans for additional buildings to accommodate the herd he is now building up.

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O. E. Green, owner of Shirley Green Farm, formerly known as the Shirley Farm Dairy, near Fort Logan, is one of the new additions to the Herefordom of Colorado. Mr. Green has been for many years a prominent Hereford breeder in Nebraska and held a dispersal sale at his home there about two years ago that averaged over $1,000 a head. Mr. Green brought with him to Colorado some excellent cows and is again building up a sizable herd. He is using in the herd two excellent bulls, Parsifal 16th and Violet Mischief. His cows are nearly all of Anxiety breeding and a young herd from these outstanding cows will be shown at the National Western this year.

o o o

Hereford breeders of the west who were sorry to hear of the death last month at the Hillcrest Farm, near Denver, of Repeater 170th, will be pleased to know that Gillette Hill has purchased as his herd sire, Repeater 213th, said by the men who bred him and many who have seen him to be even a more outstanding bull than his predecessor. Repeater 213th is by Repeater Jr., from the old cow Favorite, a wonderful show cow that was sired by Beau Ideal. A full string of Hillcrest Herefords will be shown at the National Western Show in January.

o o o

Prices at the dispersal sale of purebred Durocs and grade Holsteins held at the Range View Ranch, near Denver, last month, were very satisfactory and a large tent full of buyers and bidders responded briskly to Auctioneers Snook and Leachman, who handled the sale in a manner very satisfactory to all concerned. The top price on the Durocs was $195, paid for Queen's Cherry Floe, an outstanding 2-year-old sow sired by Big Cherry King, and from the sow Good Enuff's Queen. She was purchased for the Diamond Bar Ranch, in California. Other prices paid were $152.50 by J. O. Nicholson of Sedalia for Proud Queen, by College Lad, and $117.50 by Joe Goldstein for Burke's Queen Mae the 2nd. C. W. Reither paid $102.50 for Pacemaker's Lady, by Pacemaker, and a number of young gilts and pigs sold at an average of $40. Some rather undersized pigs sired by Pathfinder sold at very low figures considering their excellent breeding. The top price on boars was $77.50, paid by Joe Goldstein for Mountain Lad; sired by John Barley Corn. The first ten grade Holsteins under the hammer brought an average of $120, while bred heifers and more common grades sold around $75. The top price on the cows was $162.50.

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D. A. (Dick) Jay of Boulder has been made sales manager for the annual sale of draft horses which will be held in the show pavilion during the National Western Stock Show by the draft horse breeders of Colorado.

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The A. M. McClenahan herd of Majesty strain Jerseys at Greeley is not being sold in its entirety. The advertisement in the present issue calls attention to surplus stock of bull calves and heifers which are being offered at private sale. Mr. McClenahan, however, has no intention of going out of the business. He is simply offering other breeders a chance to pick up some excellent Jerseys as foundation stock or for the infusion of new blood in established herds of this breed. The McClenahan herd recently completed a very successful season on the eastern state fair and National Dairy Show circuit, winning out against some of the best Jerseys in America. Buyers should get in touch with Mr. McClenahan at Greeley if they want some of these choice animals from a noted herd.

o o o

Three big cattle shows on the West Coast were held last month and two Colorado Shorthorn herds were on hand to claim their share of the awards in the face of the stiffest competition ever encountered on the Western Slope. The Maxwell-Miller Cattle Co. of Steamboat Springs were showing a complete herd, while the Allen Cattle Co. of Colorado Springs entered a young herd and a calf herd. Princely Stamp, aged bull, and herd sire of the Maxwell-Miller Co., was placed senior champion and grand champion in the Western Royal at Spokane, and the Northwest Livestock Show at Lewiston, but had to give way at the Pacific International to Gainford Guardian, although placing first in his class. At the Western Royal the Maxwell-Miller herd took two firsts, two seconds, one third, one fourth, one fifth and one sixth place, while the Allen Cattle Co. placed with two seconds, one third, two fourths, one fifth, and one sixth with their young herd, and stood third with calf herd, fourth on young herd, third on get-of-sire and third on produce-of-cow. At both of the other shows, the placings of the Colorado herds were very similar. At the Shorthorn sale at Lewiston a very low average was made, but a Colorado entry from the herd of the Allen Cattle Co. topped the sale at $380, which was paid for a senior yearling bull.

An Ideal Christmas Gift

The Patton Glare Stop

This practical device eliminates the glare, prevents accidents, and minimizes the danger of night driving.

Made to fit any car. Ask your dealer or send your mail order. We will send neatly packed in carton—parcel post prepaid, anywhere on receipt of $4.50.

In ordering give name of your car and we will send proper Glare Stop to fit.

The Patton Glare Stop Corporation

741 Santa Fe Drive
DENVER, COLO.

Genuine Aspirin

Name "Bayer" means genuine
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BAYER

Say "Bayer" when buying Aspirin. Then you are sure of getting true "Bayer Tablets of Aspirin"—genuine Aspirin proved safe by millions and prescribed by physicians for over twenty years. Accept only an unbroken "Bayer package" which contains proper directions to relieve Headache, Toothache, Earache, Neuralgia, Rheumatism, Colds and Pain. Handy tin boxes of 12 tablets cost few cents Druggists also sell larger "Bayer packages." Aspirin is trade mark of Bayer Manufacture Monoaceticacidester of Salicylicacid.

GALVANIZED CORRUGATED ROOFING

This roofing wil last 40 years and more. Will not leak—is lightning-proof and fire-proof. Does not need painting. Best roofing for all kinds of farm buildings.

Write for catalog, prices and samples

Steel Roofing & Stamping Works
519 S. W. 2d St., Des Moines, Iowa

YOUR STOCK SHOW AD MUST BE IN OUR OFFICE NOT LATER THAN DECEMBER 20. WRITE TODAY.

A. G. Cornforth of the Cornforth Livestock Co. of Elbert, Colo., reports the purchase at the Royal sale in Kansas City of Augusta Marshall, a senior calf, for which he paid $1,000, the top price of the sale. Augusta Marshall was bred by Tomson Bros. of Wakarusa, Kan., and sired by their herd bull Village Marshall, he by Cumberland Marshall. Augusta Marshall's dam is Norwood Augusta 3rd, by Crescent Knight, and the granddam is Imp. Augusta 105, by Waverly. A full brother of this young bull topped the Royal sale in both 1919 and 1918. Bred in the purple as he is, he will make an excellent top for the large herd of big growthy cows at Forest Glen ranch.

o o o

All beef cattle men and particularly the Shorthorn breeders have been watching with interest the experiments in the successive crossing of purebred bulls on grade cows of Shorthorn blood that have been carried on at Sni-A-Bar farms near Kansas City for three years. They will also be interested to know that last month, 150 grade Shorthorn cows were shipped from the Western Slope of Colorado to a Mr. Thorne of Massachusetts, who will carry on a similar demonstration. These cows were selected from the herds of Al A. Neale, and Messrs. Neiburger, Moynihan and Hughes, near Montrose, by Prof. W. A. Cochel of the American Shorthorn Breeders' Association.

o o o

Horace Meloy, breeder of Durocs and Holsteins at his Chrome Cliff Ranch, near Calhan, Colo., in a recent letter to the Breeders' Department of Western Farm Life, calls attention to several outstanding Duroc boars that he is offering for sale. They were sired by Colorado Chief Sensation, junior champion at the Western last year, and also at the State fair this year. Mr. Meloy is one of the wide-awake purebred men of El Paso county and is doing his share of boosting in the better sires campaign. His herd was a heavy prize winner at the El Paso county fair. Another year will probably see Mr. Meloy at the National Western with his Duroc herd.

o o o

The dispersal sale of Holsteins held by Nels Anderson of Niwot last month was well attended and the prices received were very satisfactory and helped to prove that good producing dairy machines are always in demand. Twenty grade cows averaged over $200, and the average for the entire lot of cows of producing age was nearly $300. A number of calves and yearlings were also sold. Twelve head of the cows were purchased by a Mr. Kruger of Wyoming. Col. H. E. Buchanan handled the sale.

o o o

The J. J. Kalberer sale of Holsteins last month brought a fair price for all of the sixty lots that were disposed of. A few registered heifers were sold at prices ranging from $250 to $425 but the majority of the animals offered were high grade. Mr. Kalberer is continuing the business with a small herd of extra well bred cows with which he will use the stylish young sire, Dairy Farmer King Sylvia, from Carnation King Sylvia. Col. H. E. Buchanan handled the sale.

o o o

Colorado breeders are beginning to get a hearing in the east, as witness the recent sale from the Hampshire hog herd of N. E. Mosher & Son of Hugo, Colo. Hugo Lad 91419, one of their prize winners at the State fair in Pueblo this year, has been sold to W. D. Taylor of Taylor Ridge, Ill., one of the prominent Hampshire breeders of that state, to be used extensively in his herd this year. This sale speaks well for the herd of Mosher & Son, who are leaders in the Hampshire breed in Colorado. Hog men who are contemplating the purchase of breeding stock will be interested in seeing the show herd of the Mosher's at the National Western in January.

o o o

Morgan Interested in Purebreds.

Morgan county, that land of sugar beets, alfalfa hay, fat cattle and sheep, and big Percheron horses, is also breaking into the purebred cattle business. A few years hence Morgan county will also boast of many big purebred herds, the foundations of which are now being laid. A Shorthorn Breeders' Association was recently organized, with R. L. Ripley, one of the live-wire young men of the county, as secretary. The Poland China breeders are planning an organization and in addition to the breed organizations there is a County Livestock Breeders' and Shippers' Association, which embraces all the various livestock activities.

Among the Shorthorn breeders who are getting a good start with these popular cattle are W. A. Sargeant & Son, Ft. Morgan; Stewart & Shaw, Wiggins; R. L. Ripley, Ft. Morgan; Henry H. Schaefer, Weldona; Curry Ranch, Jack McAlrath, manager, Ft. Morgan; J. H. Glassy, Ft. Morgan, and J. W. Marrs, Ft. Morgan.

C. H. Gilbertson of Ft. Morgan is perhaps the largest purebred breeder in the county, with his herd of over eighty Herefords. This excellent herd of cows is headed by Leopold, by Maple Lad, by Bonnie Brae 8th. Max Peterson of Gary, and Hall and Stover of Brush are also in the game with a good string of Herefords. Mansell Boy 52nd, a Painter bull of excellent breeding, is head of the Peterson herd, which at present is comprised of fifteen well bred cows and a large range herd of high grades.

C. D. Turner of Ft. Morgan is a Hampshire breeder who can be depended upon to put Morgan county on the map for good sheep. His flock of ninety ewes is headed by an imported buck of the Lady Hulse strain. His show flock last year was well up in the money at the National Western, and included the grand champion Hampshire ewe. He will show at the National Western again this year.

W. A. Sergeant & Son of Ft. Morgan have what is perhaps the best Percheron stud in the county, including the sire Cortez, and a bunch of well bred, registered mares. They will show a rather extensive string at the National Western this year and should be well up in the money. Their Shorthorn herd is headed by Victoria's Rex.

E. C. Blauer, L. T. Winger and V. A. Winger of Brush, and G. U. Youres and J. G. Johnson & Son of Ft. Morgan, are all Poland China breeders who are building up breeding herds and will be heard from in the near future. The junior member of the J. G. Johnson & Son firm is the pig club boy who took first on his gilt at the State fair this year.

o o o

Ft. Collins Bred Sow Sale.

The annual bred sow sale of the Boulder and Larimer County Purebred Breeders' Associations was held this year December 2 at Ft. Collins. The twenty-eight lots sold brought an average of $65, a price that was not bad considering present economic conditions. Very few buyers from over the state were present and nearly all the animals remained in Larimer, Boulder and Weld counties. The top price of the sale was paid by C. J. Mather, a Poland China breeder of Longmont, for Lady Look 18th, a very high type gilt of excellent breeding. She was bred to Liberator's Giant, the young boar which placed first and junior champion at the Colorado State fair this year. This gilt, together with Lady Look Pleasant, which sold to U. S. Hill of Ft. Collins for $125, was consigned by the Colorado Agricultural College.

The fifteen Poland China sows averaged $72.50 and the thirteen Duroc sows averaged $50.20. The Durocs were consigned by A. F. Borgmann, Longmont; Colorado Agricultural College; W. A. Dickens, Longmont; C. W. Finch, Lyons; Godfrey Bros., Ft. Collins; Burt Hart, Longmont; and Geo. E. Morton & Sons and H. G. Sitler of Ft. Collins.

The Polands were consigned from the herds of Colorado Agricultural College; J. A. Davidson, C. J. Mather, Edmund Webb and W. R. Reynolds, Longmont; R. G. Maxwell & Sons, and F. L. Toliver, Ft. Collins, and A. D. McGillvray, Boulder.

o o o

Horse Sale Stock Show Week.

At a recent meeting of the executive committee of the Colorado State Horse Breeders' Association, plans for a sale of draft horses of the best blood lines in the state were made. The sale will be held Thursday, January 20, during Stock Show week, in the main pavilion and will consist of about fifty head of registered draft animals of excellent breeding. The division will probably be about forty mares and ten stallions, and will thus offer breeders of the state an opportunity to buy a good start for a registered stud.

The officers of the association are J. H. Andrews, Ft. Collins, president; H. Bert Cave, Littleton, vice president; and J. Roy Sargeant Ft. Morgan, secretary. D. A. (Dick) Jay of Boulder has been appointed sales manager. Mr. Jay is a member of the firm of Jay & Allan, Shorthorn breeders of Boulder, and a comparatively new member of the purebred breeding fraternity of the state. He came to Colorado last year from Blakesburg, Iowa, where he operated the J Farms and raised Shorthorns and Hampshires. Mr. Jay is a graduate of the Iowa State College of Agriculture at Ames. He was secretary and sales manager for two years of the Iowa Shorthorn Breeders' Association and has managed several successful purebred sales since he moved to Colorado. He managed the horse sale last year at the National Western Stock Show.

R. A. Chace of Ft. Collins and H. H. Howarth of Broomfield have been appointed an inspection committee to pass on all entries for the sale. The sale committee which will assist Mr. Jay is composed of R. A. Chace, J. H. Andrews and Frank Smith.

A Bull Calf

Out of one of our finest cows, and a splendid individual for the low price of

$100.00

I am not running the herd and he will be sold.

A few blemished cows, choicely bred, and good individuals, are for sale at a very low figure.

M. E. PENROSE,
2050 Humboldt,
DENVER, COLO.

Glendale Stock Farm

Irvindale Rowdy
Grand Champion
Belgian Stallion
Chicago, 1917,
Denver, 1918
and 1919

Breeders of
BELGIAN HORSES and POLLED HEREFORD CATTLE

Young Stock Always for Sale

J. D. BRUNTON, Aspen, Colo.

CHERRYLAWN FARM
SHORTHORNS — PERCHERONS

See our Percheron entries at the National Western. We will offer a few choice young Mares in the sale.

For Shorthorn Bulls, write

W. A. SERGEANT & SON,
FT. MORGAN, COLO.

Who would like to have the 2-months-old son of a

30-Pound 4-year-old Cow

—an outstanding calf sired by Johan Duchess De Kol Lad, sire of three 30-pound daughters, and twice a grand champion at Denver. He is mostly white—a beautiful individual and priced for immediate sale at

$275

If you would like to own him for your next herd sire, write

Mrs. R. G. Douglas
RUSH, COLO.

WALLIE FARM

Will consign three REGISTERED HOLSTEINS to the ANNUAL STOCK SHOW SALE, 1921. All young cows with nice A. R. O. records. They will be bred to our herd sire,

Colorado Count

whose 29 sisters have broken 140 world's records. He was Junior Champion at the 1920 State Fair. We consider him one of the best prospects of the breed.

YOUNG BULLS FOR SALE.

W. G. FOSTER, Owner
4800 S. PENN. DENVER, COLO.

Registered Hereford Cattle

Prince Domino —499611 Sire of the Champion Futurity Bull and Heifer Beau Aster (412145), Sire of the dams of these champions.

BEAU ASTER

Our herd is noted for outstanding uniformity. Those looking for choice Hereford cattle of truly constructive breeding should write us or come and see our cattle.

FULSCHER & KEPLER
Holyoke, Colo.

MILKING SHORTHORNS.
All Cows Officially Tested. 125 in Herd.
Service bulls of World's Record breeding. Both males and females for sale. Personal inspection invited. Send for Illustrated Booklet.
THE BONVUE FARMS CO.,
Stockyards, Denver, Colo.

REG. HAMPSHIRES
Colorado's Leading Flock

Breeding stock for sale from imported Ewes and Rams.

Chas. H. Allis, Greenland, Colo.

COLORADO

For Sale—Sons of SIR JOHANNA BESS SEGIS (the Colorado-Minnesota Bull) from dams with records up to 30 lbs. One calf of serviceable age. A clean herd.

SAFE DELIVERY GUARANTEED.

LOESCH BROS., PAHGRE VALLEY RANCH, MONTROSE, COLO.

We are at the same old, stand, breeding better

SHORTHORNS

than ever, with a continuous record of a clean herd since we started in the business in 1908. We are offering for sale some cows and heifers and one young bull at prices in reach of everyone.

H. F. HARMON, BOULDER, COLO.

ANNUAL REGISTERED HOLSTEIN SALE

Stock Show Week

Colorado's best at your price. Consignments from the best herds in the state. If you are looking for real foundation stuff, you will do well to wait for this sale. Held under the direction of the

COLORADO HOLSTEIN CLUB

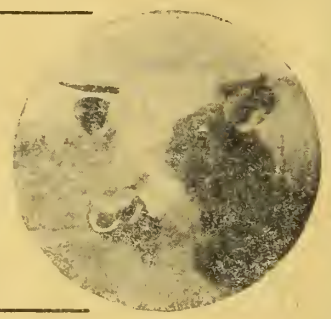
The sales committee will reject animals which we do not consider representative of COLORADO HOLSTEINS. We believe COLORADO HOLSTEINS to be the largest, healthiest and best producing Holsteins in the world.

BUY COLORADO HOLSTEINS.

Write for Information.

Sales Committee Headquarters, 921 Equitable Bldg., Denver.

A Carload of "Shorthorns That Milk"



Were shipped to Mesa County, Colo., from our herd last month. They were choice ones too, and included two young herd bulls from Record of Merit cows.

We still have a few choice young bulls and heifers for sale—better come see them right away.

Write for 1920 Catalog, giving complete story of the herd.

The Pine Valley Dairy & Farms Co.

Seeley G. Rose, Mgr. Colorado Springs, Colo.

COLUMBINE HERD — WORLD'S FINEST HOLSTEINS — COLORADO SPRINGS, COLO.

AN OUTSTANDING DAIRY HERD SIRE FOR SALE

Columbine Segis Changeling 303398, calved Jan. 23, 1919, is more white than black, is a first-class individual, being first in his class at the State Fair last year, and second at the Western Stock Show. He was sired by Woodcroft Changeling, a son of Changeling Tidy Abbekerk Wayne, a 44-lb. cow. His dam is Ora Segis De Kol, an A.R.O. daughter of Maplecrest Pontiac Hartog, who has 26 A.R.O. daughters and is a 30-lb. son of Pontiac Aaggie Korndyke, with 61 A.R.O. daughters—13 with records from 30 to 35 lbs.; six above 1,000 lbs. and 21 A.R.O. sons. Price $250. Complete breeding and further information furnished on request.

SPENCER PENROSE, Owner. Box 442, Colorado Springs, Colo. CHAS. WILSON, Mgr.

DICKENS SHORTHORNS

ARE THE BEEFY KIND THAT GROW INTO MONEY FAST.

COME AND SEE 'EM YOU'LL LIKE 'EM

We have for sale 10 heifers, 12 to 18 months old—a great bunch for calf club work—and a few young cows with calves by side—a fine opportunity to start right with a young herd.

Write your wants for Cows, Bulls or Calves, to **W. A. DICKENS, LONGMONT, COLO.**

SENSATION DUROCS

We sold Mountair Sensation at the Colorado State Fair for $1,000. This is the highest price ever paid to a Colorado breeder by another Colorado breeder, for a boar.

We have June, July and September pigs by this great breeding son of Great Sensation and we prefer to sell them young at reasonable prices.

G. E. MORTON & SONS, R. 5, Box 84, Fort Collins, Colorado

IF YOU WANT TO MAKE MONEY

Raise Poland China Hogs

and buy your start of C. J. Mather, Longmont, Colo., who always has a few to sell. Sows, gilts, young pigs, that are now weaned and ready to ship. The kind the neighbors buy.

C. J. MATHER, LONGMONT, COLO.

Phone Greeley 868 — Denver Main 815 Champa 4506

Snook & Leachman AUCTIONEERS

SOLICIT YOUR SALES

WIRE US FOR DATES.

C. W. SNOOK, Greeley, Colo. — ORD L. LEACHMAN, 205 Livestock Exchange, Stock Yards, Denver

BAKER'S HEREFORDS

MISCHIEF MIXER

One of the great sons of Mousel's Beau Mischief, at the head of the herd.

ROLLING ACRES

LITTLETON, COLO.

Geo. W. Baker, Propr.

FOR SALE

Registered Big Type Poland China Hogs

Have a few good Spring Boars and Gilts at the right price.

J. F. WILSON

Montrose, Colorado.

The Divide Herd

Young Bulls

We are now offering at very reasonable prices some good Shorthorn bulls suitable for small herds. Fall calves and a few yearlings priced for quick sale. Full particulars on application.

THE ALLEN CATTLE CO.,

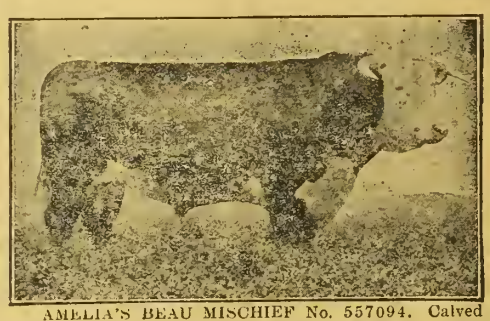
SHORTHORN BREEDERS,

Colorado Springs, Colorado

Campion's Majestic Sunbeam and Beau Mischief Herefords

MAJESTIC SUNBEAM No. 364681. Calved February 25, 1911. Sire—Majestic the 24th No. 293221. Dam—Armour Sunbeam No. 85081. Majestic Sunbeam, grandson Imp. Majestic, one of the best and biggest boned Hereford bulls ever imported to this country.

BRUMMEL MAJESTIC No. 628435. Calved March 20, 1917. Sire—Majestic Sunbeam No. 364681. Dam—Don Amelia 2nd No. 135871. 56¼ per cent Anxiety, 31¼ per cent Imp. North Pole, Lord Wilton Grove the Third. 12½ per cent Imp. Majestic.



AMELIA'S BEAU MISCHIEF No. 557094. Calved April 27, 1916. Sire—Beau Mischief the 15th. Dam—Don Amelia 2nd No. 135871. Ninety per cent Anxiety blood. Secretary Kinzer says its almost impossible to write a better pedigree.

Sunbeam Farm,

8 Miles East of Wellington, Colo.

"They're Bred in the Purple"

The best types of Majestic Sunbeam and Beau Mischief Heifers and Bulls for sale.

The Big Bone Registered Poland China Sows and Gilts and Boars for sale at all times, also fullblooded bred gilts. Come and see them. Visitors welcome at "Sunbeam Farm" any time.

A. J. Campion

DENVER, COLORADO.

SHIP TO THE OLD RELIABLE COMMISSION FIRM

TheSigel-Campion Live Stock Commission Co.

And we will get you the High Dollar for your stock. Experienced salesmen in every department.

A. J. CAMPION

Pres. and Gen. Mgr.

EXCHANGE BUILDING

DENVER UNION STOCK YARDS.

Phone Main 8300.

GREAT BARGAINS—REGISTERED HEREFORDS; DURHAMS (called Shorthorns), and ABERDEEN ANGUS; ages 1, 2, 3 and 4 years old. Prices $125 per head and up. Also Percheron and Belgian Horses from 1 to 6 years old. Prices $125 and up. Write for circular. One head or car lots. Breeding Guarantees with each.

ILLINOIS HORSE & CATTLE CO.,
Good Block, Des Moines, Iowa.

EL PASO HERD OF DUROCS

We have for sale about 70 young boars and gilts sired by Colorado's Chief Sensation, the largest junior yearling boar of any breed ever owner or raised in the west. These choice pigs at three months old are selling for $35 to $50. Write me your wants.

J. W. BRAUER,

22 Lorraine St. Colorado Springs, Colo?

COL. H. C. JENNINGS.

Purebred Livestock

AUCTIONEER

Also conduct Sales of Real Estate.

534 17th St., Kenmark Hotel.

Phone M. 6870 Denver, Colo.

SCOTCH-TOPPED Shorthorns

OF THE BETTER KIND.

A few good bull calves for sale, from the herd that produced the grand champion female at the Morgan County Fair.

Stewart & Shaw, Wiggins, Colo.

D. S. Polled Herefords

Cows from Polled Plato, herd headed by POLLED SUCCESS A 3rd. Young bulls and heifers for sale.

Smith Livestock Co.

CHIVINGTON, COLO.

WILLIAM UPP

Livestock Auctioneer

Purebred Hogs a Specialty.

DEER TRAIL, COLO.

REGISTERED JERSEY BULLS

I have some extra good Jersey Bulls of the St Lambert and Golden Lad breeding. Priced right.

Come and inspect, or write me.

H. J. VAUGHN, KIRK, COLO.

WEANLING PIGS in pairs and trios. Unrelated. Sired by our herd boars, 150 to choose from. DALY'S DUROCS. Everything lovely and we have the best lot of fall pigs it has ever been our good fortune to raise, and it is our opinion that the man that stays by the hog in the next few perilous months is the man that will weather the storm that is brewing better than in any line of business.

F. T. DALY, CAMBRIDGE, NEB.

FOR SALE—ENTIRE HERD OF

Registered Holsteins

Bred right. Many of them closely related to the cow "Western Ascalon" that sold at the National Sale for $5,500. These cattle will be priced right. Must sell because of failing health. Call or write. W. B. & E. M. DOWNS, ROUTE 1, YUMA, COLO.

BIG TYPE Poland China HOGS

Of most fashionable breeding. A few choice boars and bred gilts from the first-prize-winning herd of Colorado are for sale.

A. D. McGILLVRAY,

R. F. D. 1. BOULDER, COLO.

SCOTCH AND SCOTCH-TOPPED

SHORTHORNS

We now have ready for sale a few yearling and 2-year old bulls and heifers—grandsons and granddaughters of Imported Villager—at prices ranging from $175 to $300.

I. J. NOE & SON, Greenland, Colo.

OUR 1920 WINNINGS

At six fairs were more than satisfactory. You'll like the type and quality of our

DUROCS

For breeding stock write

Burt Hart & Sons, Longmont, Colo.

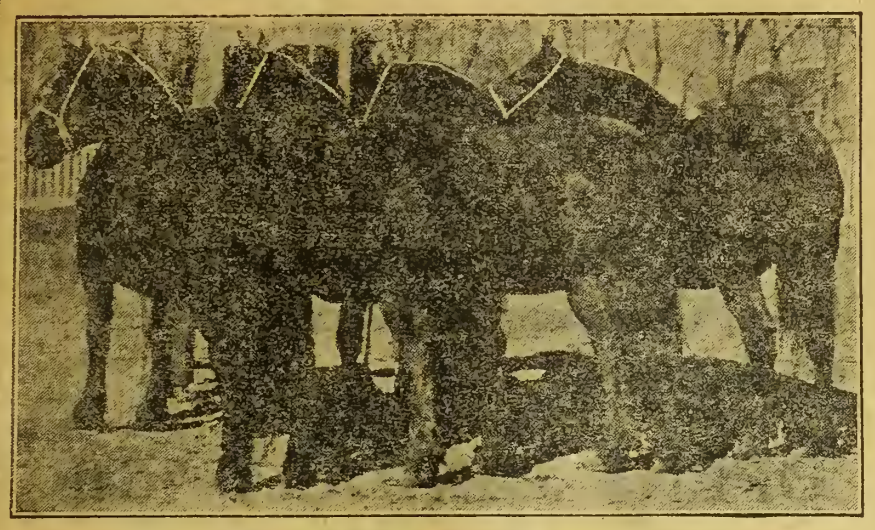
ANNUAL

DRAFT HORSE SALE

NATIONAL WESTERN STOCK SHOW WEEK

THURSDAY, JAN. 20, 1921

Beginning at 10 o'clock A. M.
IN THE MAIN STOCK SHOW PAVILION



Type of Mares that will be sold.

The offering will consist of

ABOUT 40 MARES AND 10 STALLIONS

All registered and guaranteed breeders.

These animals are consigned by the principal breeders of Colorado and sold under the auspices of the Colorado State Horse Breeders' Association.

All entries have been carefully selected by an inspection committee. — For catalog write

D. A. JAY, Sales Manager, Boulder, Colorado

Auctioneer: COL. ORD L. LEACHMAN, Stock Yards Station, Denver.

JERSEYS

I had expected to hold a sale of Jerseys in December, but on account of the expense connected with such a sale, have decided to knock off on the price of my cattle, and sell at private sale. I don't have stable room for all, and must sell about 20 head within the next thirty days, and I am going to make prices that will bring the checks.

I HAVE A NUMBER OF SPLENDID

Bull Calves

some of them out of Register of Merit dams, some of them extra fine, from babies up to 18 months old, and they have got to go—I need the room. Also some

Heifers

and 2 and 3 year old heifers, some of them fresh this fall, that are Going. I simply must have the room. I have 75 head, and I want to cut down to 50, or less.

FERN OF OAK HILL

NOW IS THE TIME TO GET SOME OF THIS GOOD STOCK, EITHER TO START IN, OR BUILD UP YOUR HERD.

You saw what we did out on the big show circuit this year, and they are real producers, too.

I never expected to sell purebred Jersey cattle as low as I am going to sell them in the next thirty days.

Write me about what you want, and I'll try and give you all the information you wish.

A. M. McClenahan, Greeley, Colo.

Your Verdict

would agree with a prominent Hereford breeder who said of our

YEARLING HEIFERS

"The most uniform bunch I have seen any place."

A few lots of extra choice REGISTERED HEREFORDS

FOR SALE

We can satisfy discriminating buyers.

HEREFORD CORPORATION. CHEYENNE, WYO.

DeWITT HEREFORDS

HERD BULL—MISCHIEVOUS JR., by THE HEIR

His dam is Mischievous 3rd, a full sister of BEAU MISCHIEF and the dam of PRINCE IMPERIAL. A very few high class Herd Bull prospects are for sale, sired by Prince Imperial and other celebrated bulls.

Also a carload of yearling heifers of
GAY LAD and BEAU MISCHIEF Breeding.

HERMOSA RANCH is on the Morrison Road, 9 miles from Denver.

T. F. DeWITT, Owner, 1550 Ogden St. DENVER

Blue Ribbon Herd Durocs

At the three big Duroc shows of Colorado in 1920 we won 23 ribbons at Denver; 33 ribbons at Rocky Ford; 36 ribbons at State Fair, Pueblo. Largest number of ribbons won at each show. Get the blood of the best at reasonable prices from

THE BLUE RIBBON LIVE STOCK CO.,

C. F. Burke, Mgr. PUEBLO, COLO.

The Cornforth Live Stock Co., Elbert, Colo.

Forest Glen Shorthorns

We have for sale and priced very reasonable,
20 HEAD OF REGISTERED COWS, in calf, and some with calf at side.
15 HEAD CHOICE HEIFER CALVES and 10 HEAD FINE BULL CALVES.
Write your wants or come and see them.

L. G. Davis Herefords

ANXIETY BRED

Sires in Service: The Great BEAU CARLOS 2ND; BONNIE WESTON, by Bonnie Brae 15th; WYOMING 4TH, Champion Senior Yearling, Denver, 1919.

Will have for sale at the National Western Stock Show, January 15—22,

40 HEIFERS, 10 to 20 Months Old

ALSO A CARLOAD OF YOUNG BULLS

Including several herd bulls. All of our own breeding. Will sell in lots to suit purchaser.

L. G. DAVIS, Saratoga, Wyo.

Stock Show Coming
SO IS THE DUROC SALE

of the Colorado Duroc Breeders' Association on JANUARY 18th at the Stock Show.. This is strictly a bred sow sale and will contain some of the famous prize winners of the state.

THE CATALOGUES ARE OUT. YOU WILL WANT ONE

Write for it today to The Colorado Duroc Breeders' Association.

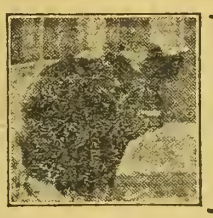
C. F. BURKE, Sec'y and Sale Manager, Pueblo, Colo.

Cloverdale Ranch Hampshire Hogs

Have just shipped a herd header, Hugo Boy, to Taylor Ridge, Ill. We still have a few good ones left. They are sired by Arriba Boy and out of Lookout dams. You'll like the style and size and the meat packers like 'em too. Write for prices and a free booklet on Hampshire hogs. Choice pigs in pairs or trios, not related. Also Sows bred.

N. E. MOSHER & SON, HUGO, COLO.

Won nine premiums on Hampshires, Colo. State Fair, 1920.



BEEF PROFITS

Now is the time that the extra pounds and quality of the Shorthorn makes, in many cases, the difference between profit and loss in growing beef. From 200 to 300 lbs. additional weight at maturity is what counts. The more Shorthorn blood represented, the more certain this extra weight and the quality that brings the high dollar per hundredweight. Ask for literature.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION,
13 Dexter Park Avenue Chicago, Illinois

"DICK" "ED"

Jay & Allan SHORTHORNS

15 Good Cows and Heifers for Sale.
12 Young Bulls for Sale.

Make your selections now.

BOULDER, COLORADO

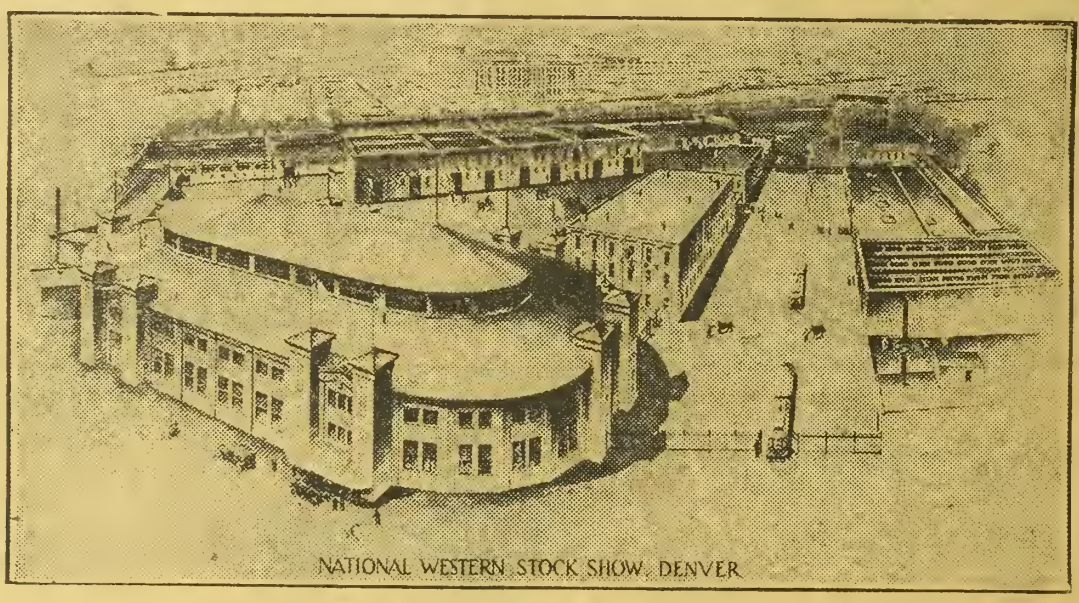
1906 **Fifteen Years** 1921

Of the

NATIONAL WESTERN STOCK SHOW

Small Tent Exhibit in 1906 Grows by 1921 to Second Largest Stock and Horse Shows in the United States, Covering 160 Acres of Land and Floor Space

Date of 1921 Show: OPENS JANUARY 15th CLOSES JANUARY 22d



NATIONAL WESTERN STOCK SHOW, DENVER

FEATURES

National Western Stock Show

Dairy, Fat and Breeding Cattle From Famous Herds.

Individual and Carlot Exhibits of Fat Swine

Fat and Breeding Sheep of Finest Blood Strains

Draft, Driving and Riding Horses from Celebrated Stables.

Carlot Sales of Feeding Cattle, 300 Carloads of which were Auctioned in One Day at Last Show.

Estimated Transactions at Stock Yards During Last Show Week $15,000,000.

Total Number of Individual Entries in 1920, 2,262.

Number of Carload Entries, 258

Total Attendance at Last Show Estimated at 100,000.

National Western Horse Show

High School and Jumping Horses.

Roadsters, Trotters, Light and Heavy Harness Horses.

Saddle Horses, 3 and 5 Gaited.

Ladies' and Childrens' Riding Horses.

$500 Stake for Best Colorado Cow Horse.

Polo Pony Prizes, Owners in Costume.

Stallions and Mares Shown Before Road Wagon.

Four $1,000 Stakes.

National Western Poultry Show

Recognized as Premier Poultry and Pet Stock Show of the United States.

Prize Birds from All Other Shows Meet Here in Final Grand Sweepstakes of Year.

Total Sales During Show Week Always Run Into Big Figures.

National Western Ribbons Most Valued by Fanciers of Nation.

Judges for 1921: Geo. M. Wells of Oshkosh, Wis.; Walter Burton of Arlington, Tex., and F. M. Pierce of Denver.. Individual Judging Rules.

Member American Poultry Association.

Glittering Parade of Automobiles, 2 Cars of Each Make at Every Arena Performance During Week

Denver in Gala Attire---Stores Brilliant with Show Week Bargains---Theaters Stage Finest Attractions of Year---Arrange to Attend and Bring the Family

Stock Show Entries Close Dec. 20, 1920
Poultry Show Entries Close Jan. 11, 1921
Horse Show Entries Close Jan. 3, 1921

Write H. L. Youngerman, Mgr., Union Stock Yards, Denver

For Information and Printed Matter

UNIVERSITY OF ILLINOIS-URBANA
3 0112 033475853